The Industry Perspective

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GlobalHAB Symposium| August 26, 2022

YOKOGAWA

FlowCam®

Agenda

- FlowCam Evolution
- Yokogawa & FlowCam Team
- What We're Reading
- What We're Talking About
- Industry Challenges & Opportunities
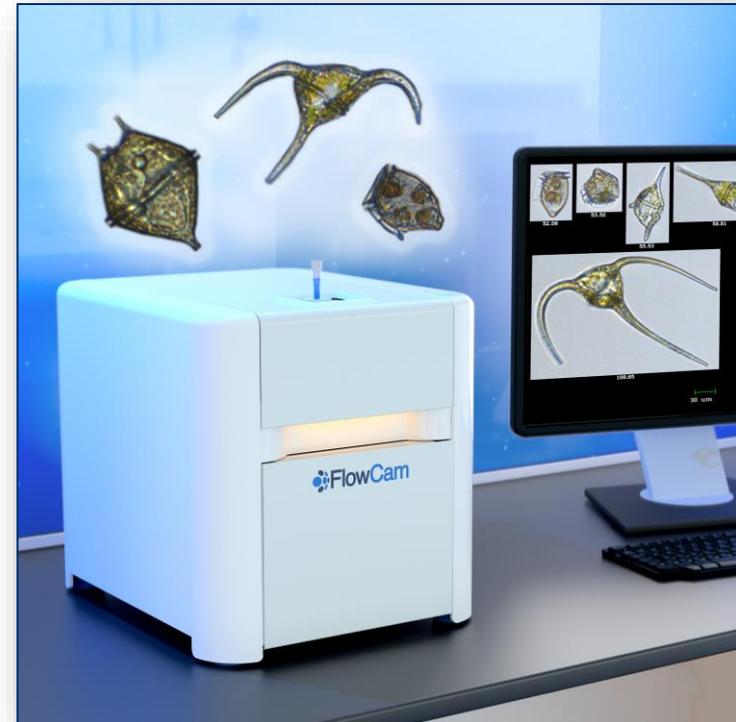
FlowCam 8000 with marine dinoflagellates

FlowCam Evolution

B2
(2006-2010)

Portable
(2006-2010)

FlowCam VS
(2010-2016)

FlowCam 8000
and Macro
(2016-Present)

FlowCam

FlowCam Images (1999)

Feb 21 99 FlowCAM Sample ── 50 um

FlowCam Images (2022)

Yokogawa

- Fluid Imaging was acquired by Yokogawa Electric Corporation (Japan) in 2022.

- FlowCam operations & team remain in Maine, USA.

- Customer service remains with us.

- Continuing to work with many of same international distributors, while also integrating Yokogawa's offices to provide additional international support.

- Yokogawa specializes in industrial automation and are growing their Life Business unit.

- Leadership Team
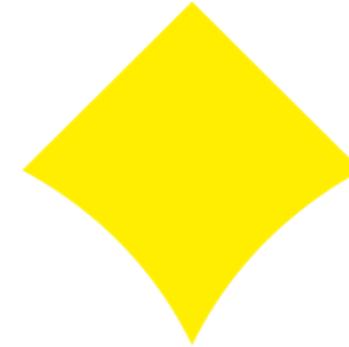
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Yokogawa Fluid Imaging Technologies, Inc.

FlowCam

The U.S. FlowCam Team

FlowCam

What We're Reading

Reporting of methods for automated devices: A systematic review and recommendation for studies using FlowCam for phytoplankton

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Abstract

Accurate and detailed reporting of methods is essential for scientific progress, yet it is widely accepted that authors across all scientific fields tend to provide insufficient methods detail. Given the recent proliferation of automated and semi-automated technologies for data collection, to address this widespread issue the details needed for interpretation and reproducibility for each specific technique first need to be identified. A systematic literature review assessed the comprehensiveness of method details reported by 116 peer-reviewed studies published between 2017 and 2020 using the FlowCam (a widely used imaging flow cytometer) to image phytoplankton, finding all to be lacking in critical details, inhibiting reproducibility, and limiting the veracity of some findings. Through this review and three case studies, we identify several key method details that should be reported by FlowCam studies to ensure their findings are credible, comparable, and replicable and illustrate the wide-reaching implications for not doing so. Future studies using FlowCam for phytoplankton analyses should ensure clear reporting of all relevant details relating to the FlowCam unit, sample preparation, run settings, post-processing of images, and the considered use of only verified measurement outputs. A methods reporting template is presented as a guideline intended to enhance the quality, interpretability, and repeatability of future FlowCam papers. The pervasiveness of inadequacies in FlowCam methods reporting identified here highlights how vital it is for users of any automated or semi-automated scientific technologies to have a clear understanding of the impact of all method details on their findings, and to report these details adequately.

What We're Talking About

- Streamlined tools for FlowCam users to upload to Ecotaxa

- Standards of method reporting in publications (Owen et al 2022)

- User Groups

- FlowCam 8000 enhancements

- New technical content for users

- Continuous monitoring?

- Supply chain – and shipping ☹

- Harry Nelson's retirement ☹

❀ FlowCam

Industry Challenges & Opportunities

- Intercomparison of data & specifications: instrument & machine variation

- Standards for data acquisition in a highly customizable software environment

- Automated classification & taxonomy

- Operator training
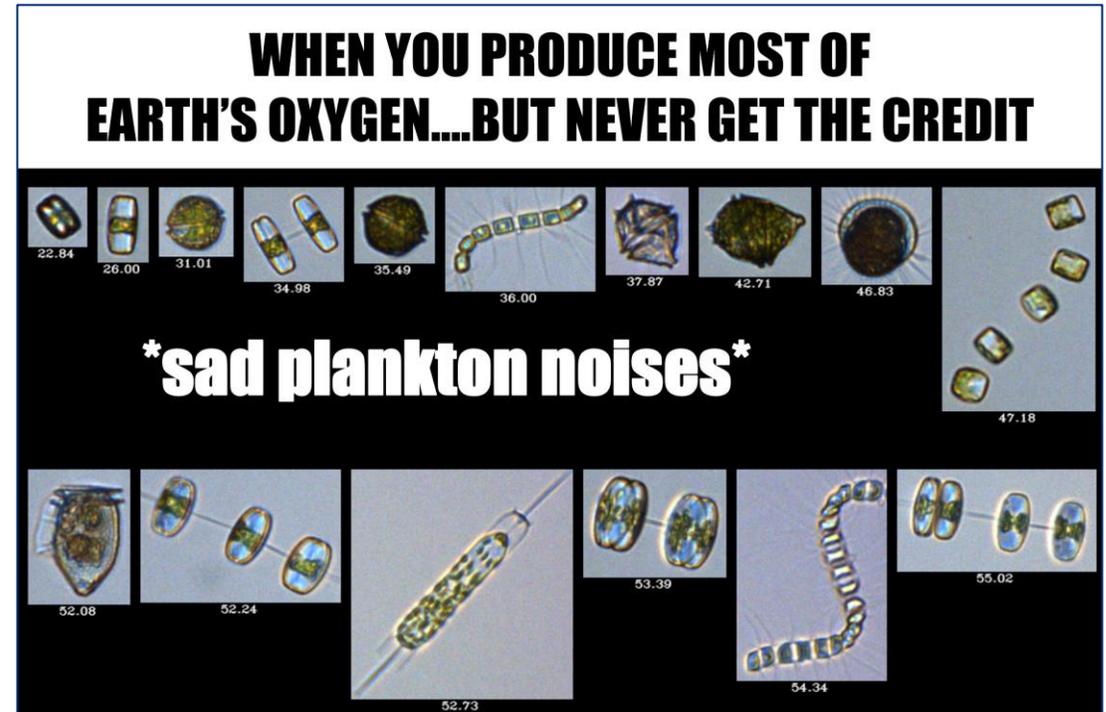
Thank you!

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FlowCam