

# BIOPHOTONICS

BRINGING LIGHT TO THE LIFE SCIENCES®

## WEBINARS

Join us for a **FREE Webinar**

### Fluorescence Lifetime Microscopy for Label-Free Imaging of Cellular Metabolism and Heterogeneity

Wednesday, November 30, 2022 1:00 PM - 2:00 PM EST

[Register Now](#)

#### .: About This Webinar

Cellular metabolism is the process by which cells generate energy. The process can be dysregulated in many diseases and pathologies, including cancer, neurodegeneration, and diabetes. Current biochemical assays for metabolism are limited to either cell-destructive protocols, such as mRNA analysis, or they measure readouts from collective cell populations, such as oxygen consumption assays. Nondestructive measurements of metabolism with single-cell resolution are needed to study the contributions of metabolic heterogeneity to disease progression, cancer metastasis, and resistance to therapies.

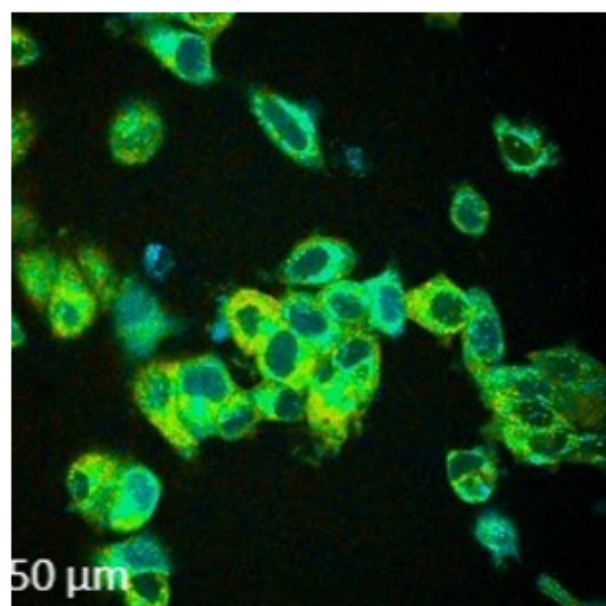
Fluorescence lifetime imaging of the metabolic coenzymes, reduced nicotinamide adenine (phosphate) dinucleotide (NAD(P)H), and oxidized flavin adenine dinucleotide (FAD) provides a label-free method to interrogate cellular metabolism. Both coenzymes, NAD(P)H and FAD, exist in either a free or protein-bound configuration with a distinct fluorescence lifetime. Single-cell segmentation and analysis of fluorescence lifetime images allow metabolic measurements at the cellular level. To facilitate cell-level analysis of fluorescence images, Alex Walsh of Texas A&M University and her colleagues are developing automated segmentation algorithms. Additionally, they are creating and testing models for predicting cell phenotypes from fluorescence lifetime metrics.

#### Who should attend:

Researchers, clinicians, lab managers, engineers, and those who use fluorescence microscopy in their work. Those who are interested in or who work in imaging cells. Anyone who uses chemical microscopy, spectroscopy, photolysis, imaging, and molecular research in industries such as medicine, biomedicine, pharmaceuticals, test and measurement, and cancer research.

#### About the presenter:

Alex Walsh (she/her) is an assistant professor in the Department of Biomedical Engineering at Texas A&M University. She leads the Quantitative Optical Imaging Lab, which seeks to develop and optimize optical imaging technologies for studying dynamic biological processes and identifying prognostic biomarkers of disease, progression, and response to treatment. Walsh is a founding member of her department's Respect, Equity, Diversity and Inclusion Committee and works to increase diversity and inclusion in science and engineering.



#### .: Mark Your Calendar

**Date: Wednesday, November 30, 2022**

**Time: 1:00 PM - 2:00 PM EST**

Space is limited. Reserve your Webinar seat now at: <https://attendee.gotowebinar.com/register/5669780569090926604?source=eblast>

After registering you will receive a confirmation email containing information about joining the Webinar.

#### SYSTEM REQUIREMENTS

##### Operating System

Windows® 7 or later, Mac OS® X 10.9 or later, Linux®, Google Chrome™ OS  
Android™ OS 5 or later, iOS® 10 or later

##### Web Browser

Google Chrome™ (most recent 2 versions)  
Mozilla Firefox® (most recent 2 versions)

##### Mobile Devices

Android™ 5 or later  
iPhone® 4S or later  
iPad® 2 or later  
Windows Phone® 8+, Windows® 8RT+

#### .: More from Photonics Media

##### Upcoming Webinars

- [A User Guide to Image Quality Assessment for Artificial Intelligence](#), 11/29/2022 10:30:00 AM EST

##### Archived Webinars

- [Looking Deeper by Listening to Light: Photoacoustic Imaging and Its Applications](#)
- [Managing Laser Degradation in Industrial Applications](#)
- [Harnessing Photons for Bond-Selective Imaging, Neuromodulation, and the Killing of Superbugs](#)

##### Don't miss out!

Sign up for our Webinar Alerts email today and never miss an upcoming event.

We respect your time and privacy. You are receiving this email because you are a Photonics Spectra magazine subscriber. You may use the links below to manage your subscriptions or contact us.

Questions: [info@photonics.com](mailto:info@photonics.com)

[Unsubscribe](#) | [Subscribe](#) | [Subscriptions](#) | [Privacy Policy](#) | [Terms and Conditions of Use](#)

Photonics Media, 100 West St., PO Box 4949, Pittsfield, MA 01202-4949

© 1996 - 2022 Laurin Publishing. All rights reserved. Photonics.com is Registered with the U.S. Patent & Trademark Office. Reproduction in whole or in part without permission is prohibited.



LAURIN PUBLISHING

PHOTONICS MEDIA