

When citing an abstract from the 2021 annual meeting, please use the format below.

[Authors]. [Abstract Title]. Program No. XXX.XX. 2021 Neuroscience Meeting Planner.
Society for Neuroscience, 2021. Online.

2021 Copyright by the Society for Neuroscience all rights reserved. Permission to republish any abstract or part of any abstract in any form must be obtained in writing by SfN office prior to publication.

Virtual Product Demo

VPD01. Intravital Microscopy for Brain Imaging

Location: Virtual Only

Time: Monday, November 8, 2021, 4:30 PM - 5:30 PM

Description: IVIM Technology provides the intravital microscopy systems and service. Researchers can examine almost all tissues into living animals under the IVM series, intravital microscope system, so it can be a powerful method to research your interested biological process surrounded by microenvironment in the living body. Specially, in this virtual demo, we will show you how to prepare the experimental animals for repetitive brain imaging and some example application images for your further experiments.

Organizer/Moderator: *S. SOYEON AHN;
IVIM Technol., Washington, DC

Virtual Product Demo

VPD02. Sensapex uM microscope workstation – Towards automated ephys

Location: Virtual Only

Time: Tuesday, November 9, 2021, 7:30 AM - 8:30 AM

Description: During the demo we will get familiar with Sensapex uM microscope workstation and go through:

- Microscope system controls, enabling controlling microscope, micromanipulators and pressure controllers all with same easy-to-use user interface
- Automated pipette cleaning feature, enabling re-using same patch-clamp pipette up to 100 times
- Functionality of motorized objective changer, providing automated dipping feature for water immersion objectives together with motorized focus
- Image-based pipette tip targeting with free open-source software ACQ4 – Enables driving pipette tips simply by clicking the camera image with PC mouse

The hardware demo will be carried out with real hardware and high quality conference camera.

Organizer/Moderator: *T. SAUKKORIPI;
Sensapex, Oulu, Finland

Virtual Product Demo

VPD03. How to Exploit ANY-Maze Version 7 to Manage Operant Behavior Tests

Location: Virtual Only

Time: Tuesday, November 9, 2021, 4:30 PM - 5:30 PM

Description: ANY-maze version 7 adds support for the new ANY-maze Operant interface, pictured below. This device provides a simple way to control the broad range of operant equipment available from Med Associates, Inc.

Standard operant components, such as levers, lights, pellet dispensers, etc. plug straight into the interface, which connects directly to the PC via USB.

You can tell ANY-maze about the components you have connected using a user-friendly configuration window and it then automatically adds all the components into your protocol ready to use.

ANY-maze's easy-to-use but powerful procedures can then be used to define how you'd like the components to work in your tests. In the example below, the procedure will either deliver a shock or a pellet, depending on the state of the stimulus light.

ANY-maze seamlessly supports multiple Operant interfaces. For example, if you have 20 operant cages, then you can easily configure all the interfaces for all the cages simultaneously and then add them all to your protocol in one go.

Organizer/Moderator: *R. MILLS;
Stoelting Co., Wood Dale, IL

Virtual Product Demo

VPD04. Multi-Wavelength Photometry Demonstration

Location: Virtual Only

Time: Tuesday, November 9, 2021, 4:30 PM - 5:30 PM

Description: Our team of Sales Engineers will be giving a demonstration of the new capabilities of the Plexon Multi-Wavelength Photometry System. Plexon's Multi-Wavelength Photometry system offers three excitation ranges centered at 560 nm, 465 nm, and 410 nm and two detection ranges centered at 600 nm and 525 nm. Record from multiple locations in a single animal or up to 4 animals simultaneously with a single system.

Organizer/Moderator: *N. BURNS;
Plexon, Dallas, TX

Virtual Product Demo

VPD05. Functional Near-Infrared Spectroscopy and Multi-Modal Bio-Physiology Solution By NIRx

Location: Virtual Only

Time: Monday, November 8, 2021, 4:30 PM - 5:30 PM

Description: NIRx offers some of the most versatile fNIRS measurement systems out there with both lab-based and portable measurement devices (NIRScout or NIRSport2), multi-modal compatibility (EEG, fMRI, eye-tracking etc), whole-head imaging solutions and high-level scientific support from actual fNIRS researchers.

This demonstration will include high powered LED sources, integrated short-channel measures and all the capabilities mentioned above. Highlighted will be the new WINGS device, a wireless biophysiology monitoring add on to the NIRSport 2 platform. Respiration, temperature, ECG and more can be monitored along with fNIRS in this fully integrated solution from NIRx.

Our expert scientific consultants are on-hand to give you a demonstration of our technologies and how they could benefit your research and lead to your next high impact publication.

Organizer/Moderator: *J. BURNISON;

NIRx, Washington, DC

Virtual Product Demo

VPD06. Introducing Xerra: A Cryo-Fluorescence Tomography Platform

Location: Virtual Only

Time: Tuesday, November 9, 2021, 7:30 AM - 8:30 AM

Description: During EMIT Imaging's Virtual Product Demo, participants will be introduced to cryo-fluorescence tomography (CFT) and its role in neuroscience research. The session will introduce Xerra, the CFT instrumentation platform, that provides quantitative, high resolution fluorescence imaging. Participants will learn about the automation in workflow and see example images and data related to the study of physiology, anatomy, and molecular biology of the brain.

Organizer/Moderator: *A. CORDOVA;

Emit Imaging, Washington, DC

Virtual Product Demo

VPD07. TDT Webinar: Developments in Fiber Photometry

Location: Virtual Only

Time: Tuesday, November 9, 2021, 7:30 AM - 8:30 AM

Description: TDT is a leader in research systems for neuroscience - including electrophysiology, auditory, fiber photometry, and behavior control.

Fiber photometry is an in vivo technique for measuring neural-specific responses using biosensors (e.g. GCaMP, RCaMP, GRABDA, etc). TDT's RZ10X processor with Synapse is a plug-and-play solution for fiber photometry. Easily record from 2 animals with 2 biosensors simultaneously with the RZ10X. Combined with TDT's Tech Support, experiments are configured in no time.

Organizer/Moderator: *J. FALCONE;
Tucker-Davis Technologies, Washington, DC

Virtual Product Demo

VPD08. Intravital Microscopy for Brain Imaging

Location: Virtual Only

Time: Tuesday, November 9, 2021, 4:30 PM - 5:30 PM

Description: IVIM Technology provides the intravital microscopy systems and service. Researchers can examine almost all tissues into living animals under the IVM series, intravital microscope system, so it can be a powerful method to research your interested biological process surrounded by microenvironment in the living body. Specially, in this virtual demo, we will show you how to prepare the experimental animals for repetitive brain imaging and some example application images for your further experiments.

Organizer/Moderator: *S. SOYEON AHN;
IVIM Technol., Washington, DC

Virtual Product Demo

VPD09. Sensapex uM microscope workstation – Towards automated ephys

Location: Virtual Only

Time: Wednesday, November 10, 2021, 7:30 AM - 8:30 AM

Description: During the demo we will get familiar with Sensapex uM microscope workstation and go through:

- Microscope system controls, enabling controlling microscope, micromanipulators and pressure controllers all with same easy-to-use user interface
- Automated pipette cleaning feature, enabling re-using same patch-clamp pipette up to 100 times
- Functionality of motorized objective changer, providing automated dipping feature for water immersion objectives together with motorized focus
- Image-based pipette tip targeting with free open-source software ACQ4 – Enables driving pipette tips simply by clicking the camera image with PC mouse

The hardware demo will be carried out with real hardware and high quality conference camera.

Organizer/Moderator: *T. SAUKKORIPI;
Sensapex, Oulu, Finland

Virtual Product Demo

VPD10. Functional Near-Infrared Spectroscopy and Multi-Modal Bio-Physiology Solution By NIRx

Location: Virtual Only

Time: Thursday, November 11, 2021, 7:30 AM - 8:30 AM

Description: NIRx offers some of the most versatile fNIRS measurement systems out there with both lab-based and portable measurement devices (NIRScout or NIRSport2), multi-modal compatibility (EEG, fMRI, eye-tracking etc), whole-head imaging solutions and high-level scientific support from actual fNIRS researchers.

This demonstration will include high powered LED sources, integrated short-channel measures and all the capabilities mentioned above. Highlighted will be the new WINGS device, a wireless biophysiology monitoring add on to the NIRSport 2 platform. Respiration, temperature, ECG and more can be monitored along with fNIRS in this fully integrated solution from NIRx.

Our expert scientific consultants are on-hand to give you a demonstration of our technologies and how they could benefit your research and lead to your next high impact publication.

Organizer/Moderator: *J. BURNISON;
NIRx, Washington, DC

Virtual Product Demo

VPD11. Introducing Xerra: A Cryo-Fluorescence Tomography Platform

Location: Virtual Only

Time: Monday, November 8, 2021, 4:30 PM - 5:30 PM

Description: During EMIT Imaging's Virtual Product Demo, participants will be introduced to cryo-fluorescence tomography (CFT) and its role in neuroscience research. The session will introduce Xerra, the CFT instrumentation platform, that provides quantitative, high resolution fluorescence imaging. Participants will learn about the automation in workflow and see example images and data related to the study of physiology, anatomy, and molecular biology of the brain.

Organizer/Moderator: *A. CORDOVA;
Emit Imaging, Washington, DC

Virtual Product Demo

VPD12. TDT Webinar: Developments in Fiber Photometry

Location: Virtual Only

Time: Wednesday, November 10, 2021, 4:30 PM - 5:30 PM

Description: TDT is a leader in research systems for neuroscience - including electrophysiology, auditory, fiber photometry, and behavior control.

Fiber photometry is an in vivo technique for measuring neural-specific responses using biosensors (e.g. GCaMP, RCaMP, GRABDA, etc). TDT's RZ10X processor with Synapse is a plug-and-play solution for fiber photometry. Easily record from 2 animals with 2 biosensors simultaneously with the RZ10X. Combined with TDT's Tech Support, experiments are configured in no time.

Organizer/Moderator: *J. FALCONE;
Tucker-Davis Technologies, Washington, DC

Virtual Product Demo

VPD13. Open for Neuroscience: An Introduction to F1000Research

Location: Virtual Only

Time: Wednesday, November 10, 2021, 7:30 AM - 8:30 AM

Description: The aim of this demonstration is to provide an overview of the unique open publication model operated by F1000 and of the benefits of F1000Research, its main publishing platform.

Over the course of the presentation, we will introduce the publication process from start to finish, our open peer review process, our open data and software practices, and the various article types we offer.

We will also introduce our International Neuroinformatics Coordinating Facility (INCF) Community Gateway – a publication venue for research in Neuroinformatics research and research relating to INCF members and events.

Organizer/Moderator: *J. BARKER;
F1000 Res. Ltd, London, United Kingdom

Virtual Product Demo

VPD14. Automated Classification of Ultrasonic Vocalizations

Location: Virtual Only

Time: Tuesday, November 9, 2021, 7:30 AM - 8:30 AM

Description: During the demo we will show the Sonotrack Call Classification software which enables the researcher to perform fully automated classification of mouse calls into 15 different categories.

We will present:

- The types of Ultrasonic Vocalizations (USV) recordings that can be used

- The Call Classification process
- The possibility to edit the classified calls
- The default settings & possibilities to define your own settings profile
- The generation of result summaries & detailed results in Excel

We will also discuss topics like noise, echo, harmonics and other challenges in bioacoustics.

Organizer/Moderator: *R. BULTHUIS;
Metris B.V., Hoofddorp, Netherlands

Virtual Product Demo

VPD15. An Introduction to NeuroFUS, for Transcranial Focused Ultrasound Neuromodulation

Location: Virtual Only

Time: Tuesday, November 9, 2021, 7:30 AM - 8:30 AM

Description: In this session, the team at Brainbox Ltd will take a look at the NeuroFUS system for transcranial focused ultrasound (TUS) neuromodulation.

We will cover the fundamentals of TUS as a technique and highlight some of its uses in non-invasive brain stimulation research before exploring the features of the NeuroFUS PRO and demonstrating how to execute a successful TUS study.

Organizer/Moderator: *D. PHILLIPS;
Brainbox, Washington, DC

Virtual Product Demo

VPD16. Neuroscience and Pharmacology Research in ACS Journals

Location: Virtual Only

Time: Monday, November 8, 2021, 7:30 AM - 8:30 AM

Description: Join the editors of ACS Chemical Neuroscience and ACS Pharmacology & Translational Science, and ACS Publications staff, for a guide on publishing chemical, quantitative biological, biophysical, and bioengineering research reports on the nervous system and neurological disorders—from basic and preclinical studies to clinical trials.

Organizer/Moderator: *C. MACLAUGHLIN;
American Chem. Society, Washington, DC

Organizer/Moderator: *L. CLARK;
American Chem. Society, Washington, DC

Organizer/Moderator: *C. MÜLLER;
American Chem. Society, Washington, DC

Organizer/Moderator: *D. OLSON;
American Chem. Society, Washington, DC

Organizer/Moderator: *J. HOOKER;
American Chem. Society, Washington, DC

Virtual Product Demo

VPD17. Dual Color Miniscope Insights During Free Behavior with the nVue System

Location: Virtual Only

Time: Monday, November 8, 2021, 4:30 PM - 5:30 PM

Description: Dr. Waylin Yu and Robby Padia will discuss the various research questions that can be explored using dual color imaging with the nVue system. They will also show how we enabled simultaneous dual color imaging to record neural activity and blood flow dynamics in the same field of view over time during exploratory mouse behavior. Join us to learn more!

Organizer/Moderator: *W. YU;
Inscopix, Palo Alto, CA

Virtual Product Demo

VPD18. Dissecting Neural Circuits with Optical Approaches Using the nVoke System

Location: Virtual Only

Time: Tuesday, November 9, 2021, 4:30 PM - 5:30 PM

Description: Drs. Qing Liu and Becky Fallon will discuss how to combine viral tools with deep-brain, simultaneous, optogenetic and imaging miniscope technology to dissect the contributions of different neural circuits underlying behavior with the nVoke system. Join us to learn more!

Organizer/Moderator: *Q. LIU;
Inscopix, Palo Alto, CA

Virtual Product Demo

VPD19. Dynamic Insights Using Optical Sensors with Inscopix Miniscopes

Location: Virtual Only

Time: Wednesday, November 10, 2021, 4:30 PM - 5:30 PM

Description: Dr. Jane Chen and Fred Ling will show some recent and exciting application developments imaging striatal dopamine dynamics using fast, genetically-encoded optical sensors with Inscopix miniscopes. Join us to learn more!

Organizer/Moderator: *J. CHEN;
Inscopix, Washington, DC

Virtual Product Demo

VPD20. Automated Classification of Ultrasonic Vocalizations

Location: Virtual Only

Time: Wednesday, November 10, 2021, 7:30 AM - 8:30 AM

Description: During the demo we will show the Sonotrack Call Classification software which enables the researcher to perform fully automated classification of mouse calls into 15 different categories.

We will present:

- The types of Ultrasonic Vocalizations (USV) recordings that can be used
- The Call Classification process
- The possibility to edit the classified calls
- The default settings & possibilities to define your own settings profile
- The generation of result summaries & detailed results in Excel

We will also discuss topics like noise, echo, harmonics and other challenges in bioacoustics.

Organizer/Moderator: *R. BULTHUIS;
Metris B.V., Hoofddorp, Netherlands

Virtual Product Demo

VPD21. Expert in Neuroscience Research Solutions

Location: Virtual Only

Time: Thursday, November 11, 2021, 7:30 PM - 8:30 PM

Description: We invite Sandra who comes from Keck School of Medicine of USC share the latest research. At the same time, you will get to know about RWD Life Science better, and when you purchase the product from RWD, you can get up to 30% off during this meet.

Organizer/Moderator: *S. WU;
RWD Life Sci., Shenzhen City, China

Virtual Product Demo

VPD23. An Introduction to nurostym tES, for tDCS, tACS, and tRNS Techniques

Location: Virtual Only

Time: Wednesday, November 10, 2021, 7:30 AM - 8:30 AM

Description: The nurostym tES, available through Brainbox Ltd, is the world's first transcranial electrical stimulation device to be CE-certified for use with tDCS, tACS, and tRNS modalities. In this product demonstration, our team will walk you through all the features of the nurostym tES system - including how to use the built-in touchscreen and proprietary PC application; as well as demonstrate how to set-up and execute a best-in-class tES session for use in research or clinical applications.

Organizer/Moderator: *M. CRAWLEY;
Brainbox, Washington, DC

Virtual Product Demo

VPD24. An Introduction to the DuoMAG Range of TMS Devices

Location: Virtual Only

Time: Thursday, November 11, 2021, 7:30 AM - 8:30 AM

Description: In this **virtual product demonstration**, the Brainbox Ltd team will provide an overview of the DuoMAG range of TMS devices. In this session, we will take a look at the following products and their capabilities:

The DuoMAG MP, for single-pulse monophasic transcranial magnetic stimulation;

The DuoMAG MP-Dual, for paired-pulse transcranial magnetic stimulation (ppTMS);

The DuoMAG MP-Quad, the state-of-the-art system for quadripulse (QPS) stimulation;

And the DuoMAG XT, for repetitive transcranial magnetic stimulation (rTMS).

Organizer/Moderator: *M. CRAWLEY;
Brainbox, Washington, DC

Virtual Product Demo

VPD26. Noldus Tools for Automating Behavioral Research

Location: Virtual Only

Time: Thursday, November 11, 2021, 7:30 AM - 8:30 AM

Description: EthoVision XT & CatWalk XT: Each Demo (20 min) + Q&A (10 min)
EthoVision analyzes the movements of any subject, such as rodents, fish, or insects, in any arena or maze. A robust video tracking software, EthoVision can also take inputs from, as well as trigger, hardware such as optogenetics or operant conditioning tools.

CatWalk methodology uses natural gait movement to produce a quantitative assessment of footfalls and locomotion in rodents, providing insights into neurological disorders like Parkinson's, spinal cord injury, stroke, and more.

Organizer/Moderator: *M. GUIDI;

Noldus, Leesburg, VA

Virtual Product Demo

VPD27. Mentalab Explore - High Quality EXG Recordings for Any Scenario

Location: Virtual Only

Time: Monday, November 8, 2021, 7:30 AM - 8:30 AM

Description: The Mentalab Explore is a high-precision mobile ExG and movement wearable biosensor.

This short demo will introduce the system and show a live high-quality EEG measurement session, data acquisition, and visualization in real-time. Besides EEG, we will also show live positional data, as well as EMG, EOG or ECG. We will cover various software and API options, including Mentalab's open-source tools in various programming languages, but also integrations into professional third party software and commonly used tools like Matlab and LSL.

Organizer/Moderator: *L. HAINKE;

Mentalab, Washington, DC

Virtual Product Demo

VPD28. Mentalab Explore - High quality mobile EXG recordings for any scenario

Location: Virtual Only

Time: Thursday, November 11, 2021, 7:30 AM - 8:30 AM

Description: The Mentalab Explore is a high-precision mobile ExG and movement wearable biosensor.

This short demo will introduce the system and show a live high-quality EEG measurement session, data acquisition, and visualization in real-time. Besides EEG, we will also show live positional data, as well as EMG, EOG or ECG. We will cover various software and API options, including Mentalab's open-source tools in various programming languages, but also integrations into professional third party software and commonly used tools like Matlab and LSL.

Organizer/Moderator: *L. HAINKE;

Mentalab, Washington, DC

Virtual Product Demo

VPD29. DeepSIM of neurobiological samples

Location: Virtual Only

Time: Tuesday, November 9, 2021, 7:30 AM - 8:30 AM

Description: The virtual demo will showcase the new CrestOptics DeepSIM combined with X-light V3 spinning disk and demonstrate how it can help researchers to obtain truly meaningful and contextualized super-resolved deep data inside brain sections (over 100µm thick). Moreover you will appreciate how two-fold enhanced spatial resolution can be obtained also from low magnification objectives to expand the range of applications to include complex 3D models such as tissues, spheroids, organoids, and small organisms.

Organizer/Moderator: *L. CLARIO;
CrestOptics, Washington, DC

Organizer/Moderator: *A. SCARPELLINI;
CrestOptics, Washington, DC

Virtual Product Demo

VPD30. DeepSIM of neurobiological samples

Location: Virtual Only

Time: Thursday, November 11, 2021, 7:30 AM - 8:30 AM

Description: The virtual demo will showcase the new CrestOptics DeepSIM combined with X-light V3 spinning disk and demonstrate how it can help researchers to obtain truly meaningful and contextualized super-resolved deep data inside brain sections (over 100µm thick). Moreover you will appreciate how two-fold enhanced spatial resolution can be obtained also from low magnification objectives to expand the range of applications to include complex 3D models such as tissues, spheroids, organoids, and small organisms.

Organizer/Moderator: *L. CLARIO;
CrestOptics, Washington, DC

Organizer/Moderator: *A. SCARPELLINI;
CrestOptics, Washington, DC

Virtual Product Demo

VPD31. Pinpoint Drug Application Made Easy

Location: Virtual Only

Time: Tuesday, November 9, 2021, 7:30 AM - 8:30 AM

Description: npí electronic's devices are known for their quality and precision. In this presentation we introduce our product category for the precise application of substances by air pressure or electric pulses via micropipettes. This enables highly precise experiments to be carried out in temporal and spatial resolution.

Organizer/Moderator: *B. POLDER;
NPI Electronic, Washington, DC

Virtual Product Demo

VPD32. Pinpoint Drug Application Made Easy

Location: Virtual Only

Time: Wednesday, November 10, 2021, 4:30 PM - 5:30 PM

Description: npí electronic's devices are known for their quality and precision. In this presentation we introduce our product category for the precise application of substances by air pressure or electric pulses via micropipettes. This enables highly precise experiments to be carried out in temporal and spatial resolution.

Organizer/Moderator: *B. POLDER;
NPI Electronic, Washington, DC

Virtual Product Demo

VPD33. White Dwarf WD-1300-Dual for 3-Photon Microscopy

Location: Virtual Only

Time: Thursday, November 11, 2021, 7:30 AM - 8:30 AM

Description: The White Dwarf is a compact and a robust laser system specially designed for 3-photon microscopy, offering now simultaneously 1300 and 1700 nm at outstanding performance parameters. With the highest peak power available for 3-photon microscopy on the market, the White Dwarf allows neuroscientists to image deeper, faster and at better resolution than ever before at green and red fluorescent markers.

Organizer/Moderator: *L. HOFMANN;
Class 5 Photonics, Washington, DC

Virtual Product Demo

VPD34. INFINITY Microscopy Cameras

Location: Virtual Only

Time: Monday, November 8, 2021, 4:30 PM - 5:30 PM

Description: "Join Teledyne Lumenera's Shari Anne Bordeleau, Dir of Channel Sales, and Ian Holland, Senior Applications Engineer as they showcase INFINITY Microscope Cameras. Whether you are shopping for the best price-to-performance microscope camera to include with your new microscope setup, or you are looking to retrofit and older microscope to make it useful again, there is just the right INFINITY microscope camera to meet your needs.

This live demonstration will highlight:

- INFINITY microscopy camera ease of use
- Intuitive INFINITY ANALYZE microscopy software"

Organizer/Moderator: *S. BORDELEAU;
Teledyne Technologies, Washington, DC

Virtual Product Demo

VPD35. Med Associates Featured Products Highlight Session

Location: Virtual Only

Time: Monday, November 8, 2021, 7:30 AM - 8:30 AM

Description: Join us on Zoom for our live product demos and Q&A with our senior sales consultant Bobbi Bushey, who will be showcasing some of our most popular product lines: Operant Conditioning, Fear Conditioning, Self Administration, and Activity, as well as an overview of our interface system.

Organizer/Moderator: *B. BUSHEY;
Med. Associates, Washington, DC

Virtual Product Demo

VPD36. Med Associates Featured Products Highlight Session

Location: Virtual Only

Time: Tuesday, November 9, 2021, 7:30 AM - 8:30 AM

Description: Join us on Zoom for our live product demos and Q&A with our senior sales consultant Bobbi Bushey, who will be showcasing some of our most popular product lines: Operant Conditioning, Fear Conditioning, Self Administration, and Activity, as well as an overview of our interface system.

Organizer/Moderator: *B. BUSHEY;
Med. Associates, Washington, DC

Virtual Product Demo

VPD37. Artificial Neural Networks Meet Natural Neural Networks: Design Your Own Neurite Outgrowth Assay with TruAI technology

Location: Virtual Only

Time: Wednesday, November 10, 2021, 7:30 AM - 8:30 AM

Description: "Within the field of artificial intelligence, there have been numerous breakthroughs in applications driven by deep neural networks (DNNs) recently. DNNs, just like the human brain, can learn to recognize objects of interest in images, which makes them very attractive for the analysis of microscopy images. DNNs learn by incorporating information from large numbers of annotated images with the objects of interest (ground truth). Their performance is much better than classical thresholding-based methods, enabling to tackle image analyses that were not accessible a few years ago, such as the detection of cells in very low signal-to-noise conditions, high cell confluency or even label-free detection. TruAI is the deep learning technology from Olympus, with focus on segmentation and classification tasks, and easy to use. Neurite outgrowth assays are used to study the effect of various drugs on neuronal development and degeneration in cells of control or diseased conditions, enabling therapeutic research in neurodegenerative diseases. The effect of each treatment is typically evaluated by imaging neuronal cells in well plates on a high-content screening (HCS) microscope. This is followed by automated image analysis to detect outgrowths and quantify them. Ready-to-go analysis packages provided by several commercial sources are based on classical segmentation algorithms and require that the imaging be done in a very specific conditions (specific antibody staining for the recognition of different subcellular features, specific magnification lenses, good signal-to-noise ratio, etc...).

In this workshop, we present the Olympus scanR HCS microscope which, by using artificial neural networks integrated into an image-based cytometry approach, can tackle challenging and non-standard image analysis tasks. This means that researchers are not bound to a specific recipe of sample preparation or imaging modality. After a brief presentation of the operation for automated acquisition and analysis, the workflow for developing a DNN model for a neurite outgrowth assay will be presented step-by-step. Attendees will learn how easy it is to develop and apply deep neural networks without the need of having any previous experience in programming, machine learning or deep learning."

Organizer/Moderator: *M. VEIGA;
Olympus, Washington, DC

Virtual Product Demo

VPD38. Mightex Polygon - DMD Pattern Illuminator for Targeted Photostimulation

Location: Virtual Only

Time: Monday, November 8, 2021, 7:30 AM - 8:30 AM

Description: Mightex's market-leading Polygon DMD pattern illuminator provides precise spatiotemporal control of light with subcellular resolution, making it the perfect illumination tool for life science research including targeted optogenetics. We will demonstrate the key features of the Polygon and answer questions from the audience.

Organizer/Moderator: *F. RODRIGUES;
Mightex, Washington, DC

Virtual Product Demo

VPD39. Mightex OASIS Implant - In Vivo Cellular Resolution Imaging and Stimulation

Location: Virtual Only

Time: Tuesday, November 9, 2021, 7:30 AM - 8:30 AM

Description: The OASIS Implant is a ground-breaking platform for simultaneous cellular-resolution optogenetics and calcium imaging in freely-behaving animals to probe complex neuronal networks. We will demonstrate key features to provide visiting scientists with an opportunity to learn how they can conduct freely behaving cellular resolution calcium imaging and targeted stimulation. We will also be answering questions from the audience pertaining to the hardware and software demonstration and key features of the OASIS Implant.

Organizer/Moderator: *D. WEN;
Mightex, Washington, DC

Virtual Product Demo

VPD40. Mightex Macro - Mesoscope for Targeted Optogenetics and Biosensor and Intrinsic Imaging

Location: Virtual Only

Time: Monday, November 8, 2021, 4:30 PM - 5:30 PM

Description: The OASIS Macro is a mesoscope for all-optical targeted optogenetics, biosensor imaging, and intrinsic imaging. The OASIS Macro enables researchers to simultaneously image the entire mouse cortex and perform targeted optogenetics (with Mightex's market-leading Polygon DMD illuminator). We will demonstrate the key features of the OASIS Macro and answer questions from the audience

Organizer/Moderator: *D. KRAKOWSKI;
Mightex, Washington, DC

Virtual Product Demo

VPD41. Mightex Polygon - DMD Pattern Illuminator for Targeted Photostimulation

Location: Virtual Only

Time: Tuesday, November 9, 2021, 4:30 PM - 5:30 PM

Description: Mightex's market-leading Polygon DMD pattern illuminator provides precise spatiotemporal control of light with subcellular resolution, making it the perfect illumination tool for life science research including targeted optogenetics. We will demonstrate the key features of the Polygon and answer questions from the audience.

Organizer/Moderator: *F. RODRIGUES;
Mightex, Washington, DC

Virtual Product Demo

VPD42. Mightex OASIS Implant - in Vivo Cellular Resolution Imaging and Stimulation

Location: Virtual Only

Time: Wednesday, November 10, 2021, 4:30 PM - 5:30 PM

Description: The OASIS Implant is a ground-breaking platform for simultaneous cellular-resolution optogenetics and calcium imaging in freely-behaving animals to probe complex neuronal networks. We will demonstrate key features to provide visiting scientists with an opportunity to learn how they can conduct freely behaving cellular resolution calcium imaging and targeted stimulation. We will also be answering questions from the audience pertaining to the hardware and software demonstration and key features of the OASIS Implant.

Organizer/Moderator: *D. WEN;
Mightex, Washington, DC

Virtual Product Demo

VPD43. Mightex Macro - Mesoscope for Targeted Optogenetics and Biosensor and Intrinsic Imaging

Location: Virtual Only

Time: Wednesday, November 10, 2021, 7:30 AM - 8:30 AM

Description: The OASIS Macro is a mesoscope for all-optical targeted optogenetics, biosensor imaging, and intrinsic imaging. The OASIS Macro enables researchers to simultaneously image the entire mouse cortex and perform targeted optogenetics (with Mightex's market-leading Polygon DMD illuminator). We will demonstrate the key features of the OASIS Macro and answer questions from the audience

Organizer/Moderator: *D. KRAKOWSKI;
Mightex, Washington, DC

Virtual Product Demo

VPD44. Measuring Physiology: Anytime, Anywhere, Any Subject

Location: Virtual Only

Time: Wednesday, November 10, 2021, 4:30 PM - 5:30 PM

Description: Make greater discoveries in the lab, in the MRI, and in real-world and virtual environments using BIOPAC wired and wireless physiology measurement and interpretation solutions. Cited in over 42,500 peer-reviewed journal articles & scholarly references and trusted by the world's premier laboratories & leading researchers, BIOPAC's world-class life science research platforms provide the most advanced acquisition and analysis of ECG, EDA (GSR), EEG, EGG, EMG, EOG, and over 300 other signals and physiological measurements. Attend this presentation and learn about BIOPAC's full line of integrated physiology measurement and analysis solutions. BIOPAC will demo the MP160 System and AcqKnowledge software while discussing important system options and integrations such as Animal EEG, Human EEG, Virtual Reality, Eye Tracking, Blood Pressure, Stimulus Presentation, and MRI compatible tools.

Organizer/Moderator: *T. COOK;
BIOPAC Systems Inc., Goleta, CA

Virtual Product Demo

VPD45. TMS+NEUROMODULATION DEVICES: Presentation, Technique & Application

Location: Virtual Only

Time: Tuesday, November 9, 2021, 4:30 PM - 5:30 PM

Description: Demonstration of the latest technology in Transcranial Magnetic Stimulation (TMS), tDCS and EEG. New technology includes closed-loop eeg, quadripulse TMS, new tDCS devices.

Organizer/Moderator: *F. D. BENAVIDES, M.D.;
Jali Med., Waltham, MA

Virtual Product Demo

VPD46. EEG-TMS Close Loop; fMRI-EEG Applications

Location: Virtual Only

Time: Tuesday, November 9, 2021, 7:30 AM - 8:30 AM

Description: NeurOne Digital Out – Three Essential Features for Real-time Analysis
Bittium NeurOne™ Tesla EEG System
A high end EEG System for standard EEG/ERP studies which provides high performance capability for TMS-EEG, fMRI-EEG or tES-EEG.

Organizer/Moderator: *S.-P. SIMONAHÖ, PH.D.;
Bittium, Oulu, Finland

Virtual Product Demo

VPD47. Rewire Neuro's Pipsqueak Pro for Rapid Automated Cellular Image Quantification

Location: Virtual Only

Time: Tuesday, November 9, 2021, 4:30 PM - 5:30 PM

Description: Rewire Neuro is the maker of the Fiji/ImageJ Pipsqueak AI plugin for microscopy image analysis. Utilizing the power of AI, we smartly automate your biomarker and cell quantification, providing dramatically reduced analysis times and the consistency you need to feel confident in your data. This demo will feature our upcoming Pipsqueak Pro: an improved version on own software platform that expands our ability to provide additional features and customizations in a more stream-lined user interface.

Organizer/Moderator: *J. HARKNESS;
Washington State University, Vancouver, Portland, OR

Virtual Product Demo

VPD48. Accelerate Protein Analysis Through Streamlining Western Blotting Process

Location: Virtual Only

Time: Wednesday, November 10, 2021, 4:30 PM - 5:30 PM

Description: Western blotting is a commonly used analytical technique in protein analysis. However, the standard manual workflow from protein separation to detection is time-consuming and sometimes highly involved for researchers. In order to improve the workflow efficiency and data reproducibility, GenScript has developed a suite of innovative and customizable instrument-based solutions, including eBlot™ Fast Wet Transfer System, eStain™ Automated Protein Staining System and eZwest™ Lite Automated Western Device, that deliver western blot results consistently and quickly.

Organizer/Moderator: *M. SUN;
GenScript, Washington, DC

Virtual Product Demo

VPD49. TMS+NEUROMODULATION DEVICES: Presentation, Technique & Application

Location: Virtual Only

Time: Wednesday, November 10, 2021, 4:30 PM - 5:30 PM

Description: Demonstration of the latest technology in Transcranial Magnetic Stimulation (TMS), tDCS and EEG. New technology includes closed-loop eeg, quadripulse TMS, new tDCS devices.

Organizer/Moderator: *F. D. BENAVIDES, M.D.;
Jali Med., Waltham, MA

Virtual Product Demo

VPD50. EEG-TMS Close Loop; fMRI-EEG Applications

Location: Virtual Only

Time: Wednesday, November 10, 2021, 7:30 AM - 8:30 AM

Description: NeurOne Digital Out – Three Essential Features for Real-time Analysis
Bittium NeurOne™ Tesla EEG System
A high end EEG System for standard EEG/ERP studies which provides high performance capability for TMS-EEG, fMRI-EEG or tES-EEG.

Organizer/Moderator: *S.-P. SIMONAHÖ, PH.D.;
Bittium, Oulu, Finland

Virtual Product Demo

VPD51. Rewire Neuro's Pipsqueak Pro for Rapid Automated Cellular Image Quantification

Location: Virtual Only

Time: Wednesday, November 10, 2021, 4:30 PM - 5:30 PM

Description: Rewire Neuro is the maker of the Fiji/ImageJ Pipsqueak AI plugin for microscopy image analysis. Utilizing the power of AI, we smartly automate your biomarker and cell quantification, providing dramatically reduced analysis times and the consistency you need to feel confident in your data. This demo will feature our upcoming Pipsqueak Pro: an improved version on own software platform that expands our ability to provide additional features and customizations in a more stream-lined user interface.

Organizer/Moderator: *J. HARKNESS;
Washington State University, Vancouver, Portland, OR

Virtual Product Demo

VPD52. Accelerate Protein Analysis Through Streamlining Western Blotting Process

Location: Virtual Only

Time: Thursday, November 11, 2021, 4:30 PM - 5:30 PM

Description: Western blotting is a commonly used analytical technique in protein analysis. However, the standard manual workflow from protein separation to detection is time-consuming and sometimes highly involved for researchers. In order to improve the workflow efficiency and data reproducibility, GenScript has developed a suite of innovative and customizable instrument-based solutions, including eBlot™ Fast Wet Transfer System, eStain™ Automated Protein Staining System and eZwest™ Lite Automated Western Device, that deliver western blot results consistently and quickly.

Organizer/Moderator: *M. SUN;
GenScript, Washington, DC

Virtual Product Demo

VPD53. A comprehensive measurement and analysis on Action Potentials in neuroscience research

Location: Virtual Only

Time: Monday, November 8, 2021, 4:30 PM - 5:30 PM

Description: Action potential is used as the critical messenger to communicate among neurons in the central nervous system. It also reflects the state of excitability in neurons. Since it plays an important role in a variety of physiological processes, it is one of the most interests studied in many research groups. We developed a powerful tool called Action Potential Search which enables to extract important information from action potential signals acquired in the experiment.

Organizer/Moderator: *S. STELLA;
Mol. Devices, LLC, San Jose, CA

Virtual Product Demo

VPD54. A comprehensive measurement and analysis on Action Potentials in neuroscience research

Location: Virtual Only

Time: Wednesday, November 10, 2021, 7:30 AM - 8:30 AM

Description: Action potential is used as the critical messenger to communicate among neurons in the central nervous system. It also reflects the state of excitability in neurons. Since it plays an important role in a variety of physiological processes, it is one of the most interests studied in many research groups. We developed a powerful tool called Action Potential Search which enables to extract important information from action potential signals acquired in the experiment.

Organizer/Moderator: *S. STELLA;
Mol. Devices, LLC, San Jose, CA

Virtual Product Demo

VPD55. Whole brain imaging at subcellular resolution – fully automated UltraMicroscope Blaze™

Location: Virtual Only

Time: Wednesday, November 10, 2021, 7:30 AM - 8:30 AM

Description: Light sheet microscopy in combination with tissue clearing enables visualization of the intact brain and even entire mice bodies at cellular and subcellular level. In this product demo, we will introduce you to large-scale 3D fluorescence imaging with the brand new UltraMicroscope Blaze – the first fully automated light sheet microscope for large or multiple samples. With cutting-edge light sheet optics, the microscope operates as a virtual microtome which performs section-free high-resolution 3D imaging. You will learn how light sheet imaging can enable you to obtain an unbiased view at large samples such as cleared brains or brain organoids, from neural networks down to subcellular details, at an accelerated pace.

Organizer/Moderator: *E. NENT;
Miltenyi Biotec, Auburn, CA