CURRY NEWSLETTER

Jan 5, 2024 / Vol 1

CURRY NEWSFLASH

Why a CURRY Newsletter?

- **CURRY NeuroTalks**
- **CURRY updates**
- **CURRY in the News**
- **Publication Highlights**
- **CURRY in a Hurry**

CURRY was created as a neuro-signal software, pioneering MEG data processing over 30 years ago. Since then, CURRY has evolved from a brain signal data processing tool to a modular multi-modal neuroimaging suite with a focus on neurophysiological data handling. CURRY users are using this powerful tool for detecting and localizing complex epileptic discharges from the scalp to the intracranial space, identifying the critical functional areas of the brain, evaluating the severity of traumatic brain injury, and revealing important neuro signal properties in cognitive neuroscientific research. From hospitals to research labs, CURRY has served the global brain health and science community for 3 decades.

Starting this month, the Compumedics team will issue a quarterly CURRY Newsletter as a channel to our global customers, providing exciting news updates about CURRY development, feature updates, customer publications, webinars, and CURRY workshops. Our goal is simple: keep you updated with the latest developments of the product, service, and user activities. We hope to witness your successes, help improve the lives of patients and the quality of research, and gather your feedback along the way, because CURRY's evolution depends on understanding its users.

CURRY NeuroTalks

We proudly present the quarterly CURRY Webinar series, NeuroTalks, focusing on sharing research and clinical practices around epilepsy and other primary brain disorders, facilitating communications among scientists and clinicians, and inspiring new advancements within their fields.

Register Now!

FEB 9, 2024

1:30PM EST (10:30AM PST)

Bin He, Ph.D

Trustee Professor,
Neuroscience Institute and
Electrical and Computer
Engineering,
Carnegie Mellon University

"Recent Advances in Epilepsy Source Localization and Imaging"

John S. Ebersole, MD

Overlook MEG Center,
Atlantic Health Neuroscience
Institute, Summit, NJ

"The Value of Simultaneous EEG and MEG Source Modeling in Epilepsy Evaluations"

See page 3 for the featured speakers' abstracts on the topics for the upcoming CURRY NeuroTalks webinar.

CURRY Updates

Version 9.0.2

Each CURRY version release includes important feature updates and hotfixes that improve the stability of the software and extend the capabilities of the tools and/or your user experience. For a full list of enhancements and issues addressed in CURRY 9.0.2, please see the **release notes**. **Check for updates** to access the CURRY 9.0.2 release patches.

Summary of major updates:

- Support for Okti 32, 64, and 128 channel amplifiers. Compumedics' newest amplifier, the portable, wireless and high-definition Okti, is now supported in CURRY.
- Shared-databases with revision control. Users can now work on a copy of a CURRY database and any changes made will be updated automatically across all instances. Revision control allows users to maintain a detailed log of changes.
- Support for latest generation digitizer devices. CURRY now supports the optical digitizers NDI Polaris Vega and Polaris Lyra.

CURRY in the News

Report from the field

An Australian woman with chronic epilepsy is now seizure-free thanks to brain-scanning technology developed by Swinburne University. The neuroscience team using the CURRY platform discovered the exact malfunction in her brain, leading to a life-changing operation.

News Story

COMPUMEDICS Neuroscan™

World Leader in Functional Neuroimaging

Publication Highlights

105

publications since Jan 2023, according to Google Scholar:

Selected publications:

Sun R, Zhang W, Bagic A, He B: "Deep learning based source imaging provides strong sublobar localization of epileptogenic zone from MEG interictal spikes" NeuroImage, 281, 120366, 2023.

Read More

Jin L, Choi JY, Bulacio J, et al., Wang Z: "Multimodal Image Integration for Epilepsy Presurgical Evaluation: A Clinical Workflow", Frontiers in Neurology, Sec. Epilepsy, Volume 12, 2021

Read More

CURRY in a Hurry

Quick Tips to Optimize your use

Did you know that CURRY 9 is equipped with fully automatic spike detection capability plus a dipole clustering feature to ensure the most accurate spike categorization? For a detailed demonstration, see this video in our knowledge base playlist.

Read More

Did you also know that CURRY is compatible with PACS (Picture Archiving and Communications System) for seamless integration of multi-model imaging? With just a few clicks, your patient's MRI data in the PACS can be easily imported into CURRY for head model construction and source localization. For a detailed demonstration, see this video in our knowledge base playlist.

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CURRY NeuroTalks Speaker Abstracts

John S. Ebersole, MD

Overlook MEG Center,
Atlantic Health Neuroscience Institute,
Summit, NJ

"The Value of Simultaneous EEG and MEG Source Modeling in Epilepsy Evaluations"

MEG and EEG source modeling have complementary strengths in the localization of epileptic spike and seizure sources. Although MEG fields are not attenuated or altered by the skull and scalp, and MEG systems typically include hundreds of sensors, both unlike EEG, MEG localization is only precise for sources with a tangential or nearly tangential orientation. As cortical source orientation becomes more radial, MEG sensitivity drops. Radial sources from convexity cortex cannot be modeled by MEG. In such situations, source modeling using EEG provides the needed diagnostic accuracy. Optimal localization of epileptic foci cannot be achieved by either MEG or EEG source modeling alone, rather both should be performed on simultaneously recorded data whenever possible. This complementary relationship will be illustrated with clinical cases.

Bin He, Ph.D

Trustee Professor, Neuroscience Institute and Electrical and Computer Engineering,
Carnegie Mellon University

"Recent Advances in Epilepsy Source Localization and Imaging"

Electrophysiological source imaging from non-invasively recorded electroence-phalogram (EEG) and magnetoence-phalography (MEG) has played a significant role in advancing our ability to map and localize epileptogenic zones, aiding presurgical planning in drug-resistant focal epilepsy patients. We will discuss recent progress in epilepsy biomarkers and source localization and show that significantly improved performance can be obtained from spatiotemporal source imaging of neural oscillations including seizure oscillations and pathological high-frequency oscillations (HFOs). Within interictal events, we found that scalp-recorded HFOs riding spikes represent a highly efficient biomarker delineating epileptogenic sources. Recent advancements in machine learning and AI have allowed us to noninvasively estimate and image the source location and extent, as well as temporal dynamics of ictal and interictal events from scalp high-density EEG. Our source imaging techniques have been rigorously validated in drug-resistant focal epilepsy patients against intracranial EEG recordings and surgical resection outcomes.

For more information or have questions, please contact CurryNewsletter@compumedics.com