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## 2014 CHINA WORKSHOP, OMNIPLEX 1.11.3, 2015 WORKSHOP DATES AND MORE

### REGISTRATION NOW OPEN FOR 2014 CHINA WORKSHOP



Plexon is pleased to announce that registration is now open along with the dates and location for the 3rd Annual Plexon China Regional Neurophysiology Workshop taking place July 22-24, 2014 at the East China Normal University in Shanghai.

This event, completely managed by Plexon's Chinese partner, Hong Kong Plexon Limited, has grown to become a hugely successful training event in only a couple years. Last year, nearly 80 attendees representing almost 40 laboratories from across the country were in attendance.

This year, the China Workshop is expected to be even stronger. The agenda will cover the basics through advanced topics related to operating the OmniPlex® Neural Data Acquisition System, CinePlex® Behavioral Research System, PlexBright™ Optogenetic Stimulation System, Offline Sorter™, NeuroExplorer® and much more. The Hong Kong Plexon team invites each research lab using a Plexon system in China to send two researchers without having to pay a registration fee! Additional attendees beyond the two are welcome to participate at a registration price of RMB800.

Contact [Jerry@plexon.com.hk](mailto:Jerry@plexon.com.hk) for more information or to register.

### OMNIPLEX SOFTWARE 1.11.3 RELEASED

OmniPlex Software v1.11.3 is now available online for all configurations of the OmniPlex Neural Data Acquisition System. This update is primarily a minor, interim bug fix release in response to a few issues reported since the OmniPlex Software v1.11 was released earlier this year.

Fixes and improvements relate to PlexNetRemote functionality, waveform length modifications, digital input card default settings, standard thresholding, error messages and start-up behavior following a Windows restart or reboot amongst other topics. Additionally, the demonstration version of the OmniPlex Software now runs properly.

This latest download is available for both Windows® 7 and XP platforms, and can be found on the OmniPlex System webpage along with the updated demonstration version. The downloads are also available at [www.plexon.com/software-downloads](http://www.plexon.com/software-downloads) under the OmniPlex Neural Data Acquisition System header. For more information regarding these or other improvements, contact [info@plexon.com](mailto:info@plexon.com).

### SAVE THE DATE: 6TH ANNUAL PLEXON WORKSHOP

Mark your calendars! Plexon's 6th Annual Neurophysiology and Behavior Workshop has been set for the week of April 27, 2015. It will once again be held in Dallas, Texas, USA with limited seating.

Previous attendees can attest, the Plexon Workshop is not a sales event! It is a nearly-exhausting, intense, multiday, hands-on, fully exercise-based training event with one-on-one coaching. Spend a few days with us and watch the quality, depth and efficiency of your lab's data recording and analysis significantly improve - immediately and for years to come.

Check out the statement later in this newsletter where Dr. Farran Briggs from Dartmouth describes her Plexon Workshop experience.

For more information or for special, deeply discounted registration pricing when accompanied by a PlexBright System with a 4 Channel Optogenetic Controller, an OmniPlex System (any channel count), or a CinePlex System purchase, contact [workshop@plexon.com](mailto:workshop@plexon.com).

**BEHAVIORAL RESEARCHERS – LET’S CONNECT IN MAY & JUNE**

As Plexon expands its products to support behavioral research labs – including the PlexBright Optogenetic Stimulation System, new CinePlex Behavioral Research System offerings and integrated solutions incorporating Lafayette Instrument’s rodent chambers to name a few - we will be attending several behavioral-focused conferences new to us simply as attendees (no booth) to meet with you.

In May, we will be at the International Behavioural and Neural Genetics Society’s (IBANGS) 16th Annual Genes, Brain & Behavior Meeting in Chicago, Illinois, USA followed by the International Behavioral Neuroscience Society’s (IBNS) 23rd Annual meeting in Las Vegas, Nevada, USA in June. Plexon’s Meltem Ballan will be available by appointment to discuss your questions and research needs on a one-on-one basis. If you will be in attendance at either event, please let us know! Email [meltem@plexon.com](mailto:meltem@plexon.com) to arrange a time to talk. We hope to see you there!

**DID YOU KNOW . . . HOW TO SEND VIDEO TRACKING DATA TO PL2™/PLX FILES?**

With the CinePlex Tracking Option license installed, you can configure CinePlex Studio to generate video tracking data (positional coordinates) and store the data in AVI and DVT files. In addition, you can instruct the system to send video tracking data to OmniPlex to be stored in PL2™ or PLX files. This is a very convenient feature because it embeds the tracking coordinates in the neural data files for future analysis. PL2/PLX files with tracking coordinates can then be opened in NeuroExplorer for place cell analysis, for example.

To include video tracking data in your PL2/PLX files, you will need to perform the following steps:

- Start OmniPlex Server and PlexControl,
- Start data acquisition in OmniPlex by pressing the ‘Start Data’ button on the PlexControl toolbar,
- Start CinePlex Studio and set-up video tracking,
- In the Studio tracking pane, click the PLX buttons for the animal center of gravity, LEDs or markers associated with the coordinates that need to be sent (currently, the data can be sent for Camera 1 only),
- Arm CinePlex Studio by pressing the ‘A’ button on the Studio toolbar,
- Start simultaneous recording of neural and video files by pressing the ‘Start Recording’ button in PlexControl.

The data stream from CinePlex can be observed in the SPK-Activity pane in PlexControl (CPX1 data row).

For more details please refer to CinePlex V3 User Manual (Chapters 2 and 3).

**PLEXON WORKSHOP ALUMNI SPEAK OUT**

“I am a relatively new PI and Plexon user and I attended the Plexon Workshop along with two of my lab members. For us, a week of intense hands-on training was well spent and probably saved us countless lab hours that would otherwise have been devoted to learning the systems on our own. I would highly recommend the Plexon Workshop to anyone starting out with a Plexon system or thinking of upgrading to Plexon components.”

Farran Briggs, PhD

Department of Physiology; Geisel School of Medicine at Dartmouth

**JOVE PUBLICATION GRANT CONTEST WITH PLEXBRIGHT**

Calling all researchers with original, unpublished research performed using the PlexBright™ Optogenetic Stimulation System! Enter to win a full grant to publish in the peer-reviewed *Journal of Visualized Experimentation (JoVE)*. Application and abstract due May 31, 2014. More information available online. Good luck to all entrants!

**DIRECT LINKS NOW IN RESEARCH SPOTLIGHT**

We have now been honoring the publications of labs using Plexon equipment in the monthly newsletter for about a year – and it has really become popular! This past month we stepped up our game and began embedding direct links to the articles for faster access in addition to the references.

Once again, we salute the excellent research you are producing! Thank you for referencing the Plexon equipment used in your research!!

**ADDITION OF “DID YOU KNOW” TECHNICAL TIPS**

Starting in February, we added a new technical tips column to the newsletter called “Did You Know . . .” Each month there will be a new practical topic such as the February tip on OmniPlex System channel mapping and the March tip discussing special considerations when measuring output from the high performance PlexBright System.

Let us know if there is a topic that you think should be covered by sending an email to [stacie@plexon.com](mailto:stacie@plexon.com). Hope you enjoy the tips!

**UPCOMING EVENTS**

- **Canadian Neuroscience Meeting 2014**, May 25-28; Montreal, Canada

**OFFICE CLOSURES**

In honor of Memorial Day, Plexon World Headquarters will be closed Monday, May 26 and will reopen for business on Tuesday at our standard business time.

See annual office closures for the US and European offices for additional closures throughout the year.

**RESEARCH SPOTLIGHT**

Let us know about your 2014 publication citing Plexon and our equipment and we will send you a thank you award with a mug and a T-shirt! Send notices, address and T-shirt size to [publications@plexon.com](mailto:publications@plexon.com)

All articles listed are alphabetical based on first author within two categories: articles published online in electronic-only journals or ahead of print, and articles published in full print.

**Recent articles published online in electronic-only journals or ahead of print:**

- Almeida Filho, Daniel Gomes, Vitor Lopes dos-Santos, Nivaldo AP Vasconcelos, Jose GV Miranda, Adriano BL Tort, and Sidarta Ribeiro. "An investigation of Hebbian phase sequences as assembly graphs." *Frontiers in Neural Circuits* 8 (2014): 34.
- Amita, Hidetoshi, and Toshiya Matsushima. "Competitor suppresses neuronal representation of food reward in the nucleus accumbens/medial striatum of domestic chicks." *Behavioural Brain Research* (2014).
- Chen, Chao, Duk Shin, Hidenori Watanabe, Yasuhiko Nakanishi, Hiroyuki Kambara, Natsue Yoshimura, Atsushi Nambu, Tadashi Isa, Yukio Nishimura, and Yasuharu Koike. "Decoding grasp force profile from electrocorticography signals in non-human primate sensorimotor cortex." *Neuroscience Research* (2014).
- Coelho, A., R. Oliveira, O. Rossetto, C. D. Cruz, F. Cruz, and A. Avelino. "Intrathecal administration of botulinum toxin type A improves urinary bladder function and reduces pain in rats with cystitis." *European Journal of Pain* (2014).
- De Faveri, Sara, Emma Maggolini, Ermanno Miele, Francesco De Angelis, Fabrizia Cesca, Fabio Benfenati, and Luciano Fadiga. "Bio-inspired hybrid microelectrodes: a hybrid solution to improve long-term performance of chronic intracortical implants." *Frontiers in Neuroengineering* 7 (2014): 7.
- Dorval, Alan D., and Warren M. Grill. "Deep Brain Stimulation of the Subthalamic Nucleus Reestablishes Neuronal Information Transmission in the 6-OHDA Rat Model of Parkinsonism." *Journal of Neurophysiology* (2014).
- Gale, John Thomas, Donald C. Shields, Yumiko Ishizawa, and Emad N. Eskandar. "Reward and reinforcement activity in the nucleus accumbens during learning." *Frontiers in Behavioral Neuroscience* 8 (2014): 114.
- Gavornik, Jeffrey P., and Mark F. Bear. "Learned spatiotemporal sequence recognition and prediction in primary visual cortex." *Nature Neuroscience* (2014).
- Golub, Matthew D., M. Yu Byron, Andrew B. Schwartz, and Steven M. Chase. "Motor cortical control of movement speed with implications for brain-machine interface control." *Journal of Neurophysiology* (2014).
- Gowda, Suraj, A. Orsborn, S. Overduin, H. Moorman, and J. Carmena. "Designing dynamical properties of brain-machine interfaces to optimize task-specific performance". 1-1. Volume: PP, Issue 99; ISSN: 1534-4320 *IEEE Engineering in Medicine and Biology Society*.
- Honjoh, Tatsuya, Zhi-Gang Ji, Yukinobu Yokoyama, Akira Sumiyoshi, Yuma Shibuya, Yoshiya Matsuzaka, Ryuta Kawashima, Hajime Mushiaki, Toru Ishizuka, and Hiromu Yawo. "Optogenetic Patterning of Whisker-Barrel Cortical System in Transgenic Rat Expressing Channelrhodopsin-2." *PLOS ONE* 9, no. 4 (2014): e93706.
- Kambi, Niranjan, Priyabrata Halder, Radhika Rajan, Vasav Arora, Prem Chand, Manika Arora, and Neeraj Jain. "Large-scale reorganization of the somatosensory cortex following spinal cord injuries is due to brainstem plasticity." *Nature Communications* 5 (2014).
- Lee, Hanmi, Barbara K. Brott, Lowry A. Kirkby, Jaimie D. Adelson, Sarah Cheng, Marla B. Feller, Akash Datwani, and Carla J. Shatz. "Synapse elimination and learning rules co-regulated by MHC class I H2-Db." *Nature* (2014).
- Liu, Kefei, and Haishan Yao. "Contrast dependent OFF-dominance in cat primary visual cortex facilitates discrimination of stimuli with natural contrast statistics." *European Journal of Neuroscience* (2014).
- Liu, Jun, Wei Wei, Hui Kuang, Joe Z. Tsien, and Fang Zhao. "Heart Rate and Heart Rate Variability Assessment Identifies Individual Differences in Fear Response Magnitudes to Earthquake, Free Fall, and Air Puff in Mice." *PLOS ONE* 9, no. 3 (2014): e93270.
- Martín-García, Elena, Julien Courtin, Prisca Renault, Jean-François Fiancette, Hélène Wurtz, Amélie Simonnet, Florian Levet, Cyril Herry, and Véronique Deroche-Gamonet. "Frequency of Cocaine Self-Administration Influences Drug Seeking in the Rat: Optogenetic Evidence for a Role of the Prelimbic Cortex." *Neuropsychopharmacology* (2014).
- Meyer, Arne F., Jan-Philipp Diepenbrock, Max FK Happel, Frank W. Ohl, and Jörn Anemüller. "Discriminative Learning of Receptive Fields from Responses to Non-Gaussian Stimulus Ensembles." *PLOS ONE* 9, no. 4 (2014).

- Nguyen, Chien Le, Anh Hai Tran, Jumpei Matsumoto, Etsuro Hori, Teruko Uwano, Taketoshi Ono, and Hisao Nishijo. "Hippocampal place cell responses to distal and proximal cue manipulations in dopamine D2 receptor-knockout mice." *Brain Research* (2014).
  - Nguyen, David P., and Shih-Chieh Lin. "A frontal cortex event-related potential driven by the basal forebrain." *eLife* 3 (2014): e02148.
  - Ognjanovski, Nicolette N., Daniel Maruyama, Nora Lashner, Michal Zochowski, and Sara J. Aton. "CA1 hippocampal network activity changes during sleep-dependent memory consolidation." *Frontiers in Systems Neuroscience* 8 (2014): 61.
  - Ouyang, Mei, Shuangyan Li, and Xin Tian. "Functional Connectivity among Spikes in Low Dimensional Space during Working Memory Task in Rat." *PLOS ONE* 9, no. 3 (2014): e91481.
  - Pani, Pierpaolo, Tom Theys, Maria C. Romero, and Peter Janssen. "Grasping Execution and Grasping Observation Activity of Single Neurons in the Macaque Anterior Intraparietal Area." *Journal of Neurophysiology* (2014).
  - Phillips, Jessica M., and Stefan Everling. "Event-related potentials associated with performance monitoring in non-human primates." *NeuroImage* (2014).
  - Remedios, Ryan, Nikos K. Logothetis, and Christoph Kayser. "A role of the claustrum in auditory scene analysis by reflecting sensory change." *Frontiers in Systems Neuroscience* 8 (2014): 44.
  - Ribeiro, Tiago L., Sidarta Ribeiro, Hindiael Belchior, Fábio Caixeta, and Mauro Copelli. "Undersampled Critical Branching Processes on Small-World and Random Networks Fail to Reproduce the Statistics of Spike Avalanches." *PLOS ONE* 9, no. 4 (2014): e94992.
  - Rosas-Vidal, Luis E., Fabricio H. Do-Monte, Francisco Sotres-Bayon, and Gregory J. Quirk. "Hippocampal-Prefrontal BDNF and Memory for Fear Extinction." *Neuropsychopharmacology* (2014).
  - Sarnaik, Rashmi, Hui Chen, Xiaorong Liu, and Jianhua Cang. "Genetic Disruption of the On Visual Pathway Affects Cortical Orientation Selectivity and Contrast Sensitivity in Mice." *Journal of Neurophysiology* (2014).
  - Waschkowski, Florian, Stephan Hesse, Anne Christine Rieck, Tibor Lohmann, Claudia Brockmann, Thomas Laube, Norbert Bornfeld et al. "Development of very large electrode arrays for epiretinal stimulation (VLARS)." *Biomedical Engineering Online* 13, no. 1 (2014): 11.
  - West, Elizabeth A., Michael P. Saddoris, Erin C. Kerfoot, and Regina M. Carelli. "Prelimbic and infralimbic cortical regions differentially encode cocaine-associated stimuli and cocaine-seeking before and following abstinence." *European Journal of Neuroscience* (2014).
  - Wu, Calvin, Kamakshi Gopal, Thomas J. Lukas, Guenter W. Gross, and Ernest J. Moore. "Pharmacodynamics of postassium channel openers in cultured neuronal networks." *European Journal of Pharmacology* (2014).
  - Xu, Hong, Pascal Wallisch, and David C. Bradley. "Spiral motion selective neurons in area MSTd contribute to judgments of heading." *Journal of Neurophysiology* (2014): jn-00999.
  - Xu, Jian, Tong Wu, Wentai Liu, and Zhi Yang. "A Frequency Shaping Neural Recorder With 3 pF Input Capacitance and 11 Plus 4.5 Bits Dynamic Range." 1-1. Volume: PP, Issue 99; ISSN: 1932-4545 *IEEE Circuits and Systems Society*.
  - Zitnik, Gerard A., Brian D. Clark, and Barry D. Waterhouse. "Effects of intracerebroventricular corticotropin releasing factor on sensory-evoked responses in the rat visual thalamus." *Brain Research* (2014).
- Recent articles published in full print:**
- Arce-McShane, Fritzie I., Nicholas G. Hatsopoulos, Jye-Chang Lee, Callum F. Ross, and Barry J. Sessle. "Modulation Dynamics in the Orofacial Sensorimotor Cortex during Motor Skill Acquisition." *The Journal of Neuroscience* 34, no. 17 (2014): 5985-5997.
  - Bremner, Lindsay R., and Richard A. Andersen. "Temporal Analysis of Reference Frames in Parietal Cortex Area 5d during Reach Planning." *The Journal of Neuroscience* 34, no. 15 (2014): 5273-5284.
  - Cardoso-Cruz, Helder, Margarida Dourado, Clara Monteiro, Mariana R. Matos, and Vasco Galhardo. "Activation of Dopaminergic D2/D3 Receptors Modulates Dorsoventral Connectivity in the Hippocampus and Reverses the Impairment of Working Memory after Nerve Injury." *The Journal of Neuroscience* 34, no. 17 (2014): 5861-5873.
  - Godlove, David C., Alexander Maier, Geoffrey F. Woodman, and Jeffrey D. Schall. "Microcircuitry of Agranular Frontal Cortex: Testing the Generality of the Canonical Cortical Microcircuit." *The Journal of Neuroscience* 34, no. 15 (2014): 5355-5369.
  - Komban, Stanley Jose, Jens Kremkow, Jianzhong Jin, Yushi Wang, Reza Lashgari, Xiaobing Li, Qasim Zaidi, and Jose-Manuel Alonso. "Neuronal and Perceptual Differences in the Temporal Processing of Darks and Lights." *Neuron* 82, no. 1 (2014): 224-234.
  - Velliste, Meel, Scott D. Kennedy, Andrew B. Schwartz, Andrew S. Whitford, Jeong-Woo Sohn, and Angus JC McMorland. "Motor Cortical Correlates of Arm Resting in the Context of a Reaching Task and Implications for Prosthetic Control." *The Journal of Neuroscience* 34, no. 17 (2014): 6011-6022.
  - Zirnsak, Marc, Nicholas A. Steinmetz, Behrad Noudoost, Kitty Z. Xu, and Tirin Moore. "Visual space is compressed in prefrontal cortex before eye movements." *Nature* 507, no. 7493 (2014): 504-507.