

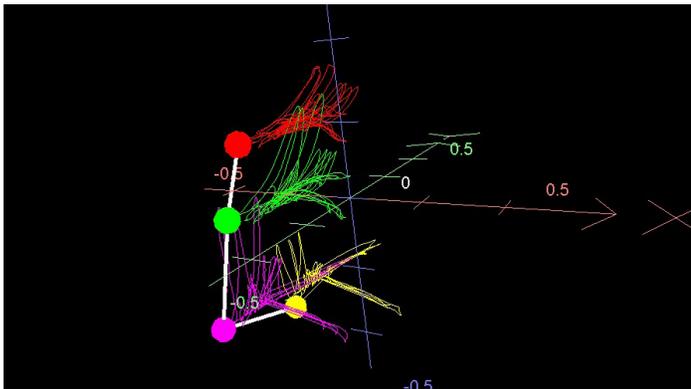


AUGUST 31, 2015

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3D TRACKING IN THE EU, PLEXON & WINDOWS 10, TECH TITANS WINNERS, STEM EDUCATION AND MORE!

3D VIDEO TRACKING ON THE RISE IN EUROPE



CinePlex® 3D is one of three advanced application-specific options to enhance Plexon's CinePlex Behavioral Research System operated in synchrony with any of Plexon's neural data acquisition systems. The specialized capabilities unleashed through CinePlex 3D can be grouped into two primary topics: the remarkable ability to track an animal's movements in three dimensions, and the brilliant simplicity of RapidGrid™ camera and system calibration, no longer requiring a dedicated environment for video capture.

Recently, Plexon has seen a rapid increase in the demand for video recording in three dimensions in Europe. Researchers are performing a wide variety of fascinating experiments requiring both neural recording and locomotion enabled by the sophistication of CinePlex 3D such as:

- Studying limb movements during reaching tasks in a freely roaming, non-human primate in an open cage;
- Exploring the reptilian cortex with an emphasis on olfactory and visual areas by evaluating turtle behavior in an open field environment; and
- Evaluating rodents performing fine walking and reaching tasks.

For the above, CinePlex 3D utilizes from two to four simultaneously recording video feeds. The optimal number of cameras depends on the complexity of the experimental arena and the objects' expected movements.

CinePlex 3D embeds a highly sophisticated – yet easy to execute – RapidGrid protocol within the program to reduce calibration time to only minutes per camera. Researchers are free to establish experiments wherever they deem appropriate – any room, building or facility most conducive to eliciting the results desired for their immediate purpose. CinePlex 3D's almost "mobile" approach redefines the possibilities for the behaviorist.

As the discoveries we seek become more complicated, tools must become more sophisticated. If the data your lab requires necessitates understanding – or simply just recording for record keeping - behavior in three dimensions, contact sales@plexon.com for more information.

COUNT DOWN TO NEUROSCIENCE 2015 – AND AN UNUSUAL SURPRISE!

Neuroscience comes early this year and is only about six weeks away. Plexon has some pretty exciting things planned for you. As you have come to expect, we will be launching new products and accessories that will be available to handle, discuss and even demo. However, we are also doing something different than we have ever done before.

As a result of polling our Annual Workshop attendees, with special attention directed at the young and burgeoning neuroscientists, we have listened and are advancing into completely new territory . . . *that will be revealed in the next newsletter!*

Stay tuned! This launch will impact EVERY researcher using Plexon hardware or software – and it involves FREE stuff!

PLEXON SUPPORTS, CONGRATULATES 2015 TECH TITANS WINNERS

Plexon steps up to support the North Texas technology community through its leadership in the 15th Annual Tech Titans Awards sponsored by the Metroplex Technology Business Council (MTBC). Plexon was represented by Stacie Hyatt, Vice President, Sales, Support and Marketing, as one of ten judges invited from the MTBC's Board of Directors to evaluate the outstanding entrants across 14 categories.

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The annual Tech Titans Awards recognizes outstanding technology companies and individuals in the North Texas area who have made significant contributions to funding, generating or adopting the latest innovations during the past year. Plexon enthusiastically congratulates all finalists and the resulting winners:

- **Hall of Fame:** Dr. David E. Daniel, Deputy Chancellor of the University of Texas System
- **Corporate Innovation Award:** Qorvo
- **Emerging Company Innovation Award:** Ziosk
- **Corporate CEO Award:** Beatriz Manetta, Argent Associates
- **Emerging Company CEO Award:** Anuj Jain, Orchestra Technology
- **CTO Award:** Mamie Jones, Intuit
- **CIO Award:** Pam Parisian, AT&T
- **Technology Inventor Award:** Ray Baughman, PhD
- **Technology Adopter Award:** Alex Zeltcer, Artizone
- **Investment Catalyst Award:** Whitney Johns Martin, Texas Women Ventures
- **Technology Advocate Award:** Tad McIntosh, HumCap
- **Tech Titan of the Future – University Level:** Drs. Yan Wan & Shengli Fu, University of North Texas
- **Tech Titan of the Future – High School Level:** Michael Yakubovsky, Coppell High School
- **Fast Tech Award:** 4WEB Medical
- **Community Hero:** Gil Lee, Intellichoice

Plexon has been on the radar of the MTBC for years and has been a Fast Tech Finalist five times – sharing the accomplishment of becoming a finalist more times than any other company with only one other.

Plexon is proud to be an active part of the thriving North Texas technology community. The company's president, Harvey W. Wiggins, remains steadfast in his commitment to support innovation. Congratulations once more to all finalists and winners!

SUPPORTING STEM EDUCATION

Plexon is a proud sponsor of science, technology, engineering and mathematics (STEM) education! Currently, there are more United States job openings in STEM fields than qualified STEM job seekers, and that gap is predicted to widen without significant, intentional redirection. The future economic prosperity for many countries is closely linked with student success in the STEM fields. Accordingly, the subject has elevated to a national priority here in the United States, with strategic initiatives to drive five areas:

1. Improving STEM instruction in preschool through 12th grade;
2. Increasing and sustaining public and youth engagement with STEM;
3. Improving the STEM experience for undergraduate students;
4. Better serving groups historically underrepresented in STEM fields; and
5. Designing graduate education for tomorrow's STEM workforce.

Plexon is partnering with the MTBC to support projects like its STEM Robotics Project, programs with North Texas independent school districts, as well as other relevant local programs and events.

Science and engineering are clearly near and dear to all of our hearts. Positive influences supporting STEM initiatives come in many forms from getting involved in local elementary STEM programs using your experience and time, to simply writing a check to help fund programs.

If you have not taken steps to support STEM programs in your area, we encourage you to consider doing so. Every supportive effort, no matter how small, is a win for us all.

DID YOU KNOW . . . PLEXON DOES NOT SUPPORT WINDOWS 10?

Microsoft has recently released Windows® 10 and has been using a unique approach encouraging users to upgrade. It launched a specific Windows update via an icon in the system tray that presents the option to upgrade from Windows 7 to Windows 10. This is done in much the same way someone might receive a relatively benign notice on his/her iPhone that a new operating system release is available. The approach is so subtle, that it may lead people to accept the upgrade without giving much thought to the significant ramifications of converting from one Microsoft platform to another.

We bring this to your attention because the latest version of Windows that Plexon hardware and software supports is Windows 7. There may be a point in the future when Plexon will start supporting Windows 10, but it is not a certainty at this time. If you encounter the Windows 10 upgrade notification on any computer operating, or intended on operating Plexon equipment, decline the offer.

If you do see the notification and consider it a nuisance, there is a fairly straightforward way to remove it as described here. The notification is part of a specific Windows update, KB3035583. Open "Windows Update" from the Control Panel and click on "Installed Updates". Right click the entry that says "Update for Microsoft Windows (KB3035583)" and select "Uninstall". Restart the computer when prompted.

Researchers currently purchasing computers through us are protected. Any computers purchased through Plexon since the launch of the Windows 10 upgrade icon have had this feature removed prior to shipping.

Additionally, not only is this issue relevant for Plexon-supplied computers, but also please keep it in mind when purchasing non-Plexon-supplied computers for use with our hardware and/or software. If you have any questions, feel free to reach out to support@plexon.com at any time.

PLEXON WORKSHOP ALUMNI SPEAK OUT: NAKYIA HINTON

"I attended the 2015 Plexon workshop for the first time and I was so impressed with everything and everyone I encountered. Coming to the workshop I was nervous about it due in part to my fellow lab mates having used the systems before and me being inexperienced with using the Plexon systems. As soon as I stepped foot into the workshop all of that nervousness went out the window; from the start I was learning about the systems step by step.

"The workshop provided a great hands-on experience that allowed me to explore every aspect that came to my mind. The best part was that any questions I had or problems I encountered were addressed right there by the Plexon developers. The workshop provides you with countless material so even if you didn't quite get it the first time you could just look at the material and complete the tasks.

I would definitely recommend the workshop to anyone that is currently using the Plexon systems or plan to in the future but also to researchers in the neural field because with Plexon you always learn something new."

NaKyia Hinton, MS

Norfolk State University

HARVEY TRAVELS TO ITALY

This month, Plexon's President, Harvey W. Wiggins, makes the trip across the Atlantic to visit a few Italian university labs to explore some pretty exciting innovations. Who knows, maybe a few of the ideas will make their way into commercially available products!

We are always seeking to help bring exciting technology to the field of neuroscience, whether it originates organically or through the excellent discovery of researchers in the field. Give us a call!

FREE PLEXSTIM™ FIRMWARE UPGRADES

Reminder to existing users of the PlexStim™ Electrical Stimulator: PlexStim Software v2.3 requires a FREE firmware upgrade to benefit from the new functionality as well as improved reliability and enhanced electrical isolation. Email support@plexon.com to take advantage of the offer.

FREE OFS V4 UPGRADES FOR 2015 V3 ORDERS

Just a reminder to those labs who purchased new licenses of OFS v3 in 2015 prior to April 23 - you are entitled to a FREE upgrade to OFS v4. Email info@plexon.com for more information. Offer expires on December 21, 2015.

70% OFS V4 UPGRADE DISCOUNTS FOR Q4, 2014 V3 ORDERS

Just a reminder to those labs who purchased new licenses of OFS v3 between Oct. 1 and Dec. 31, 2014 - you are entitled to 70% off of the standard OFS v4 upgrade. Email info@plexon.com for more information and/or a quote. Offer expires on December 21, 2015.

PLEXON KEEPS HIRING!

We keep growing and are constantly seeking outstanding, neuroscience-loving candidates for the following roles:

- Electrophysiology Sales
- Behavioral Neuroscience Sales
- Inside Sales for Neuroscience
- Senior Windows Software Engineer for Neuroscience
- Senior Windows System Administrator

We especially encourage students and lab technicians from neuroscience and behavior research labs to apply. If you are interested, send your resume to jobs@plexon.com.

OFFICE CLOSURES

In observation of Labor Day in the United States, Plexon's world headquarters will be closed Monday, September 7th. Standard operations will resume Tuesday, September 8th.

RESEARCH SPOTLIGHT

Let us know about your 2015 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.

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:

- Basura, Gregory J., Seth D. Koehler, and Susan E. Shore. "Bimodal Stimulus Timing Dependent Plasticity in Primary Auditory Cortex is Altered After Noise Exposure With and Without Tinnitus." *Journal of Neurophysiology* (2015).
- Bissonette, Gregory B., and Matthew R. Roesch. "Rule encoding in dorsal striatum impacts action selection." *European Journal of Neuroscience* (2015).
- Bukalo, Olena, Courtney R. Pinard, Shana Silverstein, Christina Brehm, Nolan D. Hartley, Nigel Whittle, Giovanni Colacicco et al. "Prefrontal inputs to the amygdala instruct fear extinction memory formation." *Science Advances* 1, no. 6 (2015).
- Constantinou, Maria, Daniel H. Elijah, Daniel Squirrel, John Gigg, and Marcelo A. Montemurro. "Phase-locking of bursting neuronal firing to dominant LFP frequency components." *Biosystems* (2015).
- Fransen, James William, Gobinda Pangeni, Ian Scott Pyle, and Maureen A. McCall. "Functional Changes in TG P23H-1 Retinal Responses: Differences between on and off pathway transmission to the superior Colliculus." *Journal of Neurophysiology* (2015).
- Kornblith, Simon, Timothy J. Buschman, and Earl K. Miller. "Stimulus Load and Oscillatory Activity in Higher Cortex." *Cerebral Cortex* (2015).
- Maccione, Alessandro, Mauro Gandolfo, Stefano Zordan, Hayder Amin, Stefano Di Marco, Thierry Nieu, Gian Nicola Angotzi, and Luca Berdondini. "Microelectronics, bioinformatics and neurocomputation for massive neuronal recordings in brain circuits with large scale multielectrode array probes." *Brain Research Bulletin* (2015).
- McWilliams, Marc A., Rita Bhui, David W. Taylor, and Jason D. Slinker. "The Electronic Influence of Abasic Sites in DNA." *Journal of the American Chemical Society* (2015).
- Rueckemann, J. W., A. J. DiMauro, L. M. Rangel, X. Han, E. S. Boyden, and H. Eichenbaum. "Transient optogenetic inactivation of the medial entorhinal cortex biases the active population of hippocampal neurons." *Hippocampus* (2015).
- Simone, Luciano, Stefano Rozzi, Marco Bimbi, and Leonardo Fogassi. "Movement related activity during goal-directed hand actions in monkey ventrolateral prefrontal cortex." *European Journal of Neuroscience* (2015)
- Tan, Xiaodong, Hunter Young, Agnella Izzo Matic, Whitney Zirkle, Suhrud Rajguru, and Claus-Peter Richter. "Temporal properties of inferior colliculus neurons to photonic stimulation in the cochlea." *Physiological Reports* 3, no. 8 (2015).
- Walker, Marquis T., Alan Rupp, Rebecca Elsaesser, Ali D. Güler, Wenlong Sheng, Shijun Weng, David M. Berson, Samer Hattar, and Craig Montell. "RdgB2 required for dim light input into intrinsically photosensitive retinal ganglion cells." *Molecular Biology of the Cell* (2015)
- Lee, Kwan Yeop, and Steven A. Prescott. "Chloride dysregulation and inhibitory receptor blockade yield equivalent disinhibition of spinal neurons yet are differentially reversed by carbonic anhydrase blockade." *PAIN* (2015).

Recent articles published in full print:

- Desrochers, Theresa M., Ken-ichi Amemori, and Ann M. Graybiel. "Habit Learning by Naive Macaques Is Marked by Response Sharpening of Striatal Neurons Representing the Cost and Outcome of Acquired Action Sequences." *Neuron* 87, no. 4 (2015): 853-868.
- Disney, Anita A., Collin McKinney, Larry Grissom, Xuekun Lu, and John H. Reynolds. "A multi-site array for combined local electrochemistry and electrophysiology in the non-human primate brain." *Journal of Neuroscience Methods* 255 (2015): 29-37.
- González-Menéndez, Irene, Katja Reinhard, Jorge Tolivia, Bernd Wissinger, and Thomas A. Münch. "Influence of Opa1 Mutation on Survival and Function of Retinal Ganglion Cells Effect of Opa1 Mutation on RGCs." *Investigative Ophthalmology & Visual Science* 56, no. 8 (2015): 4835-4845.
- Ma, Liya, Kevin Skoblenick, Jeremy K. Seamans, and Stefan Everling. "Ketamine-Induced Changes in the Signal and Noise of Rule Representation in Working Memory by Lateral Prefrontal Neurons." *The Journal of Neuroscience* 35, no. 33 (2015): 11612-11622.
- Mottaghi, Soheil, Richard Pinnell, and Ulrich G. Hofmann. "A 16-bit High-Voltage Digital Charge-Control Electrical Stimulator." *In World Congress on Medical Physics and Biomedical Engineering*, June 7-12, 2015, Toronto, Canada, pp. 1208-1212. Springer International Publishing, 2015.
- Saez, A., M. Rigotti, S. Ostojic, S. Fusi, and C. D. Salzman. "Abstract Context Representations in Primate Amygdala and Prefrontal Cortex." *Neuron* 87, no. 4 (2015): 869-881.
- Tamaki, Shunsuke, Toshinobu Kuki, Tadao Matsunaga, Hajime Mushiake, Yoshihito Furusawa, and Yoichi Haga. "Flexible Tube-Shaped Neural Probe for Recording and Optical Stimulation of Neurons at Arbitrary Depths." *Sensors and Materials* 27, no. 7 (2015): 507-523.
- Zandvakili, Amin, and Adam Kohn. "Coordinated Neuronal Activity Enhances Corticocortical Communication." *Neuron* 87, no. 4 (2015): 827-839. *Neuroscience* (2015).