

## Call for Proposals for the FUN 2020 Equipment Loan Grant Program:

The Faculty for Undergraduate Neuroscience (FUN) is pleased to announce the *Call for Proposals* for the 2020 Equipment Loan Program. Annually, the FUN Equipment Loan Program works through collaborations with equipment vendors to develop opportunities for neuroscience faculty to offer their products, services, and trainings on their equipment for up to a two-year loan with the intent to purchase the equipment at the end of the grant program. The vendors are always willing to work with the scientists so please apply even if you want a different version of the equipment listed here.

Through generous donations from **ADInstruments (ADI)**, **Data Sciences International (DSI)**, **Noldus Information Technology (NIT)**, **Nikon**, **San Diego Instruments (SDI)** and **Stoelting** we are now accepting applications for proposals requesting a loan for equipment supporting neuroscience faculty research and/or teaching for FUN members. A complete list of equipment that will be available for loan during this grant program cycle is listed below. *Please note that only single versions of the equipment listed below are available for loan at this time – it is not possible to request multiple pieces of a single item (unless otherwise noted or the awardee is seeking to purchase these additional pieces of equipment beyond the terms of the FUN Equipment Loan Program).*

All current dues-paying members of FUN are eligible to apply for this program. If you are not a member and would like to become one, please go to [www.funfaculty.org/drupal/](http://www.funfaculty.org/drupal/) and go to the member's link to register.

Grant program applications will be submitted electronically as a single pdf file to the Co-Chairs of the ELP program: [divya.sitaraman@csueastbay.edu](mailto:divya.sitaraman@csueastbay.edu) and [neuwirthl@oldwestbury.edu](mailto:neuwirthl@oldwestbury.edu). The deadline for the FUN 2020 Equipment Loan Program application submission is: February 29<sup>th</sup>, 2020 11:59 pm (PST). Awards will be announced in March 2020.

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## Terms of the FUN 2020 Equipment Loan Grant Program:

- Awardees will be given full use of the neuroscience equipment granted for a period of **two years**. For this cycle, all equipment can be requested for a **two-year** loan period unless otherwise noted (see Noldus).
- Awardees will absorb all costs associated with shipping the equipment to and from the equipment vendor/supplier.
- Awardees will return the neuroscience equipment at the end of the loan period clean, sanitized (if/when appropriate or requested specifically by the neuroscience equipment vendor/supplier), and in good working order to the vendor/supplier.
- Any publications or presentations resulting from the use of the equipment that was loaned through this program will acknowledge the neuroscience vendor/supplier company providing the equipment, as well as the FUN two-year Equipment Loan Program (ELP) grant.
- Any software that is included with a FUN two-year ELP grant will require that the grantee sign a provision that all software will be removed from their computers at the end of the grant program period.

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## Grant Program Applications:

Applications should be no more than **5 pages** in length (i.e., excluding cover page and reference pages). *Applications may be single spaced, with font size no less than 11, top and bottom margins of 1" as well as right and left margins of 0.75". Applications should be organized in the following manner:*

- Application Cover Page (Name, affiliation and equipment requested)
- Research proposal (i.e., including specific neuroscience equipment requested to be loaned, the proposed research, description of how the equipment will be used to complete the study proposed, and the expected outcomes from the research through the loaned equipment)
- Impact of the neuroscience equipment loaned on seeking future research grant funding and the long term development of the neuroscience faculty member's research program
- Role of undergraduates in the research proposal
- Institutional support for the proposal. This may include such things as matching grants from the institution (i.e., covering the purchase costs for the loaned items at the conclusion of the two-year equipment loan grant program, undergraduate research stipends, additional supply money, salary support for the faculty member, etc.) or other forms of institutional support.

Factors to be considered when reviewing the proposals will include:

- The scientific merit of the proposed research and use of the requested neuroscience equipment
- Some preference is given to faculty in the early stages of their career, although awards may also be made to more senior faculty, for example, if a faculty member is developing a new area of research
- Evidence that the loan will enhance the faculty members long-term research and/or teaching efforts
- Demonstrated institutional support for the project.

For more information contact: Drs. Divya Sitaraman (divya.sitaraman@csueastbay.edu) or Lorenz S. Neuwirth ([neuwrthl@oldwestbury.edu](mailto:neuwrthl@oldwestbury.edu))

### ***Neuroscience Vendor/Supplier # 1 - ADInstruments Equipment (ADI)***

Neuroscience Equipment loan will include:

ADInstruments PowerLab system is a high-speed multichannel computer-based data acquisition system appropriate for upper division undergraduate student neuroscience projects as well as research applications. PowerLab data acquisition potential applications include: extracellular/intracellular recordings, evoked potentials, current/voltage clamping, biopotential recordings and many other neuroscience protocols. The Team at ADInstruments will work with the award winner to configure the system to best meet the needs of the work that is proposed. The final form of the system might vary, but in general would make use of the Powerlab 4/26T platform and LabChart software.

PowerLab 4/26T (QTY 1) - <http://www.adinstruments.com/products/hardware/education/product/ML856/>

The PowerLab 26T is an integrated data recording unit featuring a dual Bio Amp, an isolated stimulator, trigger input and two independent analog outputs (non-isolated). The ML856 provides the option of up to four general DIN inputs (Inputs 3 & 4 are shared between the dual Bio Amp). With appropriate transducers and accessories the PowerLab 26T covers the broad experimental requirements in neurobiology education.

The ML856 PowerLab 26T includes:

- [LabChart](#), [Scope](#) and [LabTutor](#) software
- Teaching Resources CD (includes LabChart Experiments)
- Cable Kit including Power Cord, BNC to DIN Test Cable, USB Cable
- Getting Started with PowerLab Manual
- Getting Started with LabTutor Manual

- [LabChart Quick Reference Guide](#)
- MLA2540 [5-Lead Shielded Bio Amp Cable](#)
- MLA2505 [Shielded Lead Wires](#) (5)
- MLADDF30 [Stimulating Bar Electrode](#)
- MLAC22 [BNC to DIN Smart Adapter](#) (2)
- MLT1010/D [Finger Pulse Transducer](#)

PTK 19 (QTY 1) - <http://www.adinstruments.com/products/hardware/education/product/PTK19/>

The PTK19 is ideal for conducting experiments using isolated animal nerve, skeletal, smooth and cardiac muscle preparations. The Bridge Pod and transducer measure muscle contractile force. The cables connect to the Nerve Chamber or the Muscle Holder and plug directly into the analog inputs and analog outputs of the PowerLab system for recording and stimulating tissues.

The PTK 19 Nerve/Muscle Kit II Includes:

- ML301 [Bridge Pod](#) (signal amplifier)
- MLT500/A [Force Transducer \(0 - 500 g\)](#)
- MLT016/B [Nerve Chamber with Cable Options B](#)
- MLA0320 [Animal Nerve Stimulating Electrode](#)
- MLA013 [Muscle Holder](#)
- MLA1605 [Shielded Lead Wires \(25cm\)](#)
- MLA40 [Manipulator and Stand](#)

Complete software overview can be found here <http://www.adinstruments.com/solutions/research/Neurophysiology/>.

The included LabChart software has integrated post-hoc data analysis modules including Peak Analysis <http://www.adinstruments.com/products/software/research/modules/Peak-Analysis/Windows/> and Spike Histogram <http://www.adinstruments.com/products/software/research/modules/Spike-Histogram/Windows/>.

Although the acquisition software must be removed at the termination of the loan period, ADI does offer free downloads of the LabChart Reader software for review of previously collected data. <http://www.adinstruments.com/products/software/research/LabChart-Reader/>

Awardees are responsible for shipping costs associated with returning the equipment to the supplier. Equipment must be returned and insured (up to \$5K) via a registered carrier and in good working condition.

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### **Neuroscience Vendor/Supplier # 2 - Data Sciences International (DSI)**

Neuroscience Equipment loan will include:

- Computer & Monitor
- [Ponemah](#) Acquisition Software
- [NeuroScore](#) Analysis Software (appropriate analysis modules based on research needs)
- MX2 – 1
- Router – 1
- Switch – 1
- Receivers (RPC-1) – 4

- Four Implants (model dependent on research needs)
- Surgical Starter Kit
- On-site Installation and Training
- Surgical Training
- Data Analysis Services (via GoTo Meeting)

Description:

[Data Sciences International](#) (DSI) has implantable telemetry options for 24/7, chronic measurement of neurological information in conscious, freely moving laboratory animals. The equipment provided by DSI will be a small, complete system ideal for introducing young investigators to *in vivo* physiologic monitoring. The proven health benefits for laboratory animals make telemetry a reliable choice for physiologic monitoring.

DSI has developed robust neuroscience solutions for data acquisition and analysis from signals that were acquired via hardwired or implantable telemetry methods. DSI's monitoring solutions cover small to large animal models and offer researchers the ability to collect one or many physiological signals.

[DSI's PhysioTel](#)™ implants are designed for monitoring and collecting data from conscious, freely moving laboratory animals—providing stress-free data collection while eliminating percutaneous infections. PhysioTel implants are offered in different sizes to support a variety of research animal models ranging from mice and rats to dogs and non-human primates. The shape of DSI implants are also designed to accommodate various surgical placements including subcutaneous and intraperitoneal placement. DSI offers several implant models to help researchers monitor one or several physiologic parameters from a single animal.

[DSI's Ponemah](#) software is a complete physiologic data acquisition and analysis software platform used to confidently collect, accurately analyze, and quickly summarize data. NeuroScore software is used to analyze neurophysiology data collected in Ponemah. NeuroScore is designed to efficiently analyze large, continuous data sets common to sleep and seizure studies.

Typical use-case scenarios for applications that are supported by [NeuroScore](#) software include:

Rodent Sleep

- 2 EEG signals, 1 EMG signal, Activity
- Slow Wave Sleep (SWS), Paradoxical Sleep, Wake, and Active Wake sleep stages can be assigned

Large Animal Sleep

- 1 EEG Signal, 1 EOG Signal, 1 EMG Signal, Activity
- Non- REM (N1, N2, N3), REM, Wake, and Active Wake sleep stages can be assigned

Seizure

- Identify individual spikes and spike trains based on EEG amplitude thresholds and other spike characteristics

The team at DSI will work with the award winner to configure the system to best meet the needs of the research that is being proposed. Although the final form of the system may vary, in general it will make use of the [DSI PhysioTel](#) telemetry platform and [DSI Ponemah](#) and/or [NeuroScore](#) software.

The award will also include system installation, surgical training and opportunities for data services.

Awardees are responsible for shipping costs associated with returning the equipment to the supplier. Equipment must be returned and insured (up to \$6K) via a registered carrier and in good working condition.

Additional product information available at: <http://www.datasci.com/>

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### ***Neuroscience Vendor/Supplier # 3 - Noldus Information Technology (NIT)***

Neuroscience Equipment loan will include:

Noldus will provide one copy of the EthoVision XT software for a **1-year loan** period which includes:

- Software license hardware key (EthoVision XT)
- The USB hardware key has to be returned at the end of the trial/loan period. The winner is responsible for paying for the return of the key via UPS or Fed Ex.
- Noldus will provide advice regarding compatible computer and video hardware, as needed

Additional product information available at: <http://www.noldus.com/>

Noldus will also provide one copy of the UltraVox software for a 1 year loan period which includes:

Software license hardware key (UltraVox)

The USB hardware key has to be returned at the end of the trial/loan period. The winner is responsible for paying for the return of the key via UPS or Fed Ex.

**Hardware:** Cost for microphone (price subject to change) \$495.00 each and has to be bought by the winner.

**Shipping:** Awardee will need to pay for shipping and our preferred shipper is UPS.

Noldus will provide advice regarding compatible computer and video hardware, as needed

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### **Neuroscience Vendor/Supplier # 3 – Nikon**

One NIKON Eclipse Fluorescence Microscope:

E400 Microscope with trinocular head and adapters to accept digital camera.  
Included is an Epi-fluorescence illuminator and mercury light source.  
Filter cubes for DAPI, FITC, TRITC and Cy5.  
Microscope objective are Plan Fluor 4x, 10x, 40x dry and 100x oil immersion.

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### ***Neuroscience Vendor/Supplier # 4 - Noldus Information Technology (NIT)***

Neuroscience Equipment loan will include:

Noldus will provide one copy of the EthoVision XT software for a **1-year loan** period which includes:

- Software license hardware key (EthoVision XT)
- The USB hardware key has to be returned at the end of the trial/loan period. The winner is responsible for paying for the return of the key via UPS or Fed Ex.
- Noldus will provide advice regarding compatible computer and video hardware, as needed

Additional product information available at: <http://www.noldus.com/>

Noldus will also provide one copy of the UltraVox software for a 1 year loan period which includes:

Software license hardware key (UltraVox)

The USB hardware key has to be returned at the end of the trial/loan period. The winner is responsible for paying for the return of the key via UPS or Fed Ex.

**Hardware:** Cost for microphone (price subject to change) \$495.00 each and has to be bought by the winner.

**Shipping:** Awardee will need to pay for shipping and our preferred shipper is UPS.

Noldus will provide advice regarding compatible computer and video hardware, as needed

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### ***Neuroscience Vendor/Supplier # 5 - San Diego Instruments Equipment (SDI)***

**Note:** For whatever package is requested that used open fields, zero mazes, elevated plus mazes, T-mazes, Barnes Mazes, and/or Morris Water Mazes the awardee must purchase the maze(s) requested as SDI cannot restock or resell them once awarded. The different types of mazes can range from \$1,000 to \$4,500 (USD) and SDI will work with faculty to obtain an optimal solution for purchasing the neuroscience equipment at the conclusion of the grant award period.

Neuroscience Equipment loan will include:

#### **Two systems are available for loan as follows:**

SR-LAB System with Large Enclosures (2 Stations) (available in May, 2018)- The SR-LAB startle response system is the world's most widely used startle reflex behavioral research system and the most successful for measuring startle habituation, pre-pulse inhibition (PPI) and Fear Potentiated Startle (FPS) for both rats and mice. Small/Medium enclosures can be substituted for Large Enclosure for testing mice

#### **Additional systems available for loan are as follows:**

Place Preference - Used for addiction studies in mice and rats. Test stations can be either two compartment or three compartments. Researcher must decide in advance which style is desired.

Any-maze™ Video Tracking System with laptop. Up to two mazes/enclosures selected from the SDI offerings on the WEB site. (Note: The laptop is included and is the property of San Diego Instruments so **it must be returned** with the system.)

Other Systems you may want to consider and can be made available for loan are:

PAS Open Field with Rearing Frames - PAS-Open Field stations use a 16 x 16 photobeam configuration that offers the option to utilize a rearing frame. To accommodate rats and mice of different sizes, you will be able to position frame height anywhere on the posts.

Gemini Avoidance System - Passive and Active Avoidance and Learned Helplessness paradigms. Research drugs for cognitive enhancement.

Rotor Rod - Motor skill measurement. Can be configured for rats, mice or both. The SDI Rotor Rod is very tall and the only motivator used is fear of falling. Note: Shipping costs are high for this unit due to its size.

In addition, our friends at SDI are willing to work with individuals to setup additional behavioral systems for our loan program. If they have a system that could help establish your research program, and it is not currently available in our loan program, please go ahead and submit a proposal for that particular system. SDI will try hard to accommodate your specific research needs.

Additional product information available at: <http://www.sandiegoinstruments.com/>

## **Neuroscience Vendor/Supplier # 6 - Stoelting**

### **Stoelting Co/ANY-maze**

The following equipment packages are available for proposals.

#### **Stereotaxic Package**

Digital Just for Mouse™ Stereotaxic Instrument (51730D) with Integrated warmer (53800) and Stereotaxic Surgical Tool Kit (52189).

Our Just for Mouse Stereotaxic was specifically designed for use with knock-out and transgenic mice. It is far and away our most popular stereotaxic instrument. The stereotaxic has an integrated warming base that aids in improving surgical outcomes and overall longevity. A key feature of this instrument is its easy-to-read digital display, which allows for 10µm resolution and the coordinate zeroing feature eliminates the need for calculations. The stereotaxic package also includes Stoelting's Stereotaxic Surgical Instrument kit. This kit contains all the necessary tools for mouse stereotaxic surgery; Stoelting surgical instruments including a double sterilizing tray that will fit all the tools. Indeed, this kit also includes the Kane Clamp, exclusive to Stoelting for retracting the skin for optimal view of the skull without causing trauma to the surrounding tissue.

#### **Surgical Instrument Kit includes:**

- Large Ring Dissecting Scissors
- Micro-Dissecting Forceps, Curved and Straight
- Stainless Steel Forceps
- Micro Friedman Rongeur, Curved
- Kane Retractor
- Sterile Scalpel Blades
- Scalpel Handle
- Halsey Needle Holder
- Double Sterilizing Tray

Additional information is available at: [www.StoeltingCo.com](http://www.StoeltingCo.com)

Awardees are responsible for shipping costs associated with returning the equipment to the supplier. Equipment must be cleaned, decontaminated and returned in good working condition.

#### **ANY-maze Behavioral Tracking Package**

ANY-maze behavioral tracking software with camera and accessories bundle (60605). The bundle includes a camera, lens, ceiling-mount and necessary cables. The software also includes unlimited technical support to aid you in getting started.

ANY-maze is today's most advanced video tracking system. Trusted by thousands of researchers around the world, ANY-maze couples an unrivalled depth of features with a simple, familiar design, to provide automated testing in virtually any behavioural test.

Additional information is available at: [www.ANY-maze.com](http://www.ANY-maze.com)

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***Awardees are responsible for costs of shipping to and from the vendor/supplier and insuring the equipment is highly encouraged. All neuroscience equipment must be returned cleaned, sanitized and in good working condition. If the equipment is not insured with shipment and is damaged, the awardee will be responsible for covering the costs of the loaned neuroscience equipment.***

