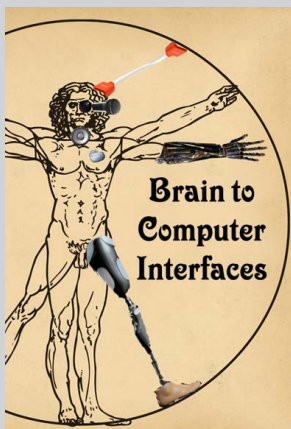


THE UNIVERSITY OF CHICAGO

Section of Neurosurgery,
Department of Surgery

INAUGURAL SPENCER BLOCK LECTURE 2016 KLUVER SYMPOSIUM SERIES

THE FUTURE OF BRAIN/MACHINE INTERFACES



Friday, June 24th, 2016

8:00am – 2:15pm

THE GORDON CENTER FOR
INTEGRATIVE SCIENCE

929 E. 57th Street
W301/W303
Chicago, IL 60637

COURSE DIRECTORS:

David M. Frim, MD, PhD
*The Ralph Cannon Professor of Surgery,
Neurology, and Pediatrics
Chief, Section of Neurosurgery
The University of Chicago Medicine*

V. Leo Towle, PhD
*Professor of Neurology, Surgery, and
Psychiatry
Technical Director, Intraoperative
Monitoring Service
Director, Clinical Evoked Potential
Laboratory
The University of Chicago Medicine*

This educational activity is funded by the Heinrich
Kluver Memorial Lectureship Endowment.

For additional information visit:
cme.uchicago.edu/SpencerBlock



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The University of Chicago Medicine*

INAUGURAL SPENCER BLOCK LECTURER

Philip R. Troyk, PhD

*Associate Dean of Armour College of Engineering
Professor of Biomedical Engineering
Professor, Stuart School of Business
Illinois Institute of Technology*

KLUVER MEMORIAL VISITING FACULTY

Alik Widge, MD, PhD

*Director, Translational NeuroEngineering Laboratory Division of
Neurotherapeutics
Massachusetts General Hospital Assistant Professor of Psychiatry
Harvard Medical School Clinical Fellow, Picower Institute for Learning
& Memory (MIT)
Massachusetts General Hospital/Harvard Medical School*

Andrew B. Schwartz, PhD

*Distinguished Professor of Neurobiology
University of Pittsburgh*

Fan-Gang Zeng, PhD

*Professor and Director, Center for Hearing Research
University of California Irvine*

Frank J. Lane, PhD

*Associate Professor of Psychology
Associate Chair of the Department of Psychology
Illinois Institute of Technology*

FACULTY DISCLOSURE

As a provider accredited by the ACCME, The University of Chicago Pritzker School of Medicine requires everyone who is in a position to control the content of an education activity to disclose all relevant financial relationships with any commercial interest. This includes any entity producing, marketing, re-selling, or distributing health care goods or services consumed by, or used on, patients. The ACCME defines “relevant financial relationships” as financial relationships in any amount, occurring within the past 12 months, including financial relationships of a spouse or life partner that could create a conflict of interest. Mechanisms are in place to identify and resolve any potential conflict of interest prior to the start of the activity. Additionally, The University of Chicago Pritzker School of Medicine requires Authors to identify investigational products or off-label uses of products regulated by the US Food and Drug Administration, at first mention and where appropriate in the content.

COURSE DESCRIPTION

This one-day symposium will present the background, history, and current research of brain/computer interfaces. Speakers drawn from across the United States will present state-of-the-art advances in the development of areas like cochlear implants to partially restore hearing in previously deaf patients and devices to restore motor function in amputees or patients with spinal cord damage. Additional lectures will examine preliminary work to enhance cognition. A final presentation will review the ethical considerations in prosthetic research and the future availability of prosthetic devices.

TARGET AUDIENCE

This event will be of special interest to physicians, scientists, and bioengineers, and is also appropriate for faculty and students in disciplines such as philosophy, bioethics, neurosurgery, and neurology.

LEARNING OBJECTIVES

- *To describe the basic history, progress, problems, and future of brain/machine interfaces.*
- *To identify how the cochlear implant restores hearing and what cochlear implant improvements are in development.*
- *To illustrate how artificial limbs are being developed and the different strategies the brain uses to control them.*
- *To evaluate the merits of retinal and cortical visual prostheses and their potential impact.*
- *To discuss how cognition might be enhanced through interfaces with computer technology.*
- *To analyze the ethical controversies surrounding prosthetic research, including how such expensive technology can be equitably provided to individuals who would benefit from them.*

ACCREDITATION AND CREDIT DESIGNATION

The University of Chicago Pritzker School of Medicine is accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education for physicians.

The University of Chicago Pritzker School of Medicine designates this live activity for a maximum 4 *AMA PRA Category 1 Credits™*. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

Nurses and other healthcare professionals will receive a Certificate of Participation. For information on the applicability and acceptance of certificates of participation for educational activities certified for *AMA PRA Category 1 Credit™* from organizations accredited by the ACCME, please consult your professional licensing board.

EDUCATIONAL GRANTS/COMMERCIAL SUPPORT

This CME certified activity has not requested or received any support or funding from commercial interests. This includes, but is not limited to, pharmaceutical companies and medical device manufacturers.

SYMPOSIUM AGENDA

FRIDAY, JUNE 24TH, 2016

8:00 am - 8:45 am	REGISTRATION & CONTINENTAL BREAKFAST BUFFET
8:45 am - 9:00 am	WELCOME AND INTRODUCTIONS <i>David M. Frim, MD, PhD, and Leo Towle, PhD</i>
9:00 am - 9:45 am	The Story of the Cochlear Implant <i>Fan-Gang Zeng, PhD (UC Irvine)</i>
9:45 am - 10:30 am	Development of a Hand Prosthesis <i>Andrew B. Schwartz, PhD (U of Pittsburgh)</i>
10:30 am - 10:45 am	COFFEE BREAK & BLOCK FAMILY ADDRESS
10:45 am - 11:30 am	Development of a Cortical Visual Prosthesis <i>Philip R. Troyk, PhD (IIT)</i>
11:30 am - 12:30 pm	LUNCH
12:30 pm - 1:15 pm	Toward Enhanced Cognition <i>Alik Widge, MD, PhD (MGH/Harvard)</i>
1:15 pm - 2:00 pm	Ethics of Brain/Machine Enhancements <i>Frank J. Lane, PhD (IIT)</i>
2:00 pm - 2:15 pm	CONCLUSIONS

LOCATION

The Gordon Center for Integrative Science
929 E. 57th Street
W301/W303
Chicago, IL 60637

Program agenda and speaker selection are subject to change.

The University of Chicago reserves the right to cancel or postpone this symposium due to unforeseen circumstances. In the unlikely event this activity must be cancelled or postponed, the registration fee will be refunded; however, The University of Chicago is not responsible for any related costs, charges, or expenses to participants, including fees assessed by airline/travel/lodging agencies.

REGISTRATION

HOW TO REGISTER

 **EMAIL** Cecilia Ehlenbach at cehlenbach@surgery.bsd.uchicago.edu

Check and cash will be collected the day of the symposium.
Please make all checks payable to **The University of Chicago**
(Tax ID# 36-2177139)

REGISTRATION FEE

The registration fee includes symposium materials, breakfast, and lunch. ***While registration is open until the start of the symposium, we do encourage early registration to enable us to provide the best possible service to participants.***

General Public	Complimentary
CME credit	\$40

ACCESSIBILITY

The University of Chicago is committed to providing equal access appropriate to need and circumstance and complies fully with the legal requirements of the Americans with Disabilities Act.

If you are in need of special accommodation or have any questions or concerns, please contact Cecilia at 773-702-8544 or by email at cehlenbach@surgery.bsd.uchicago.edu.



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