

Program

NeuroStereology Workshop

**Marine Biological Laboratory
April 17-22, 2010**

Woods Hole, Massachusetts

Organizer:

Mark West

Professor of Medical Neurobiology

Aarhus, Denmark

Saturday, April 17, 2010

12:00 noon-12:00 midnight Arrival and Registration at the Swope Center, MBL

18:00 – 19:30 ***Dinner:*** MBL Cafeteria (Swope Center)

19:30 – 21:30 ***Short Presentation of Participant Projects***

(Max. 2 minutes, 1-2 Power Point slides on a USB stick)

Sunday, April 18, 2010

7:30 – 8:30 Breakfast: MBL Cafeteria

8:30 – 9:15 Lecture: What is unbiased stereology: Probes, events, formulas (MJW)

9:15 – 10:00 Lecture: Point Probes, Area, Volume, Cavalieri Principle (MJW)

10:00 – 10:20 Coffee

10:20 – 11:30 Exercise: Volume Estimation of CA of Human Hippocampus (MJW)

11:30 – 12:00 Discussion

12:00 – 13:30 Lunch: MBL Cafeteria

13:30 – 14:30 Lecture: 3-D Probe (disector) Neuron Number, $N_v \times V_{ref}$ (LS)

14:30 – 15:30 Exercise: Total Neuron Number in CA1 of Human Hippocampus (LS)

15:30 – 15:50 Coffee

15:50 – 16:30 Lecture: Fractionator Sampling and Optical Fractionator (MJW)

16:30 – 17:00 Discussion

17:00 – Dinner: MBL Cafeteria

19:30 – Microscope Demonstrations Microbrightfield

Participant-Instructor Consultations

Monday April 19, 2010

- 7:30 – 8:30 Breakfast: MBL Cafeteria
- 8:30 – 10:00 Lecture: Isotropy, Vertical Sections, Local Estimators (LS)
- 10:00 – 10:15 Coffee:
- 10:15 – 11:00 Exercise: Mean Cell Volume, Nucleator (LS)
- 11:00 – 11:45 Lecture: Tissue Shrinkage and Practical Issues (MJW)
- 11:45 – 12:00 Discussion
- 12:00 – 13:30 Lunch: MBL Cafeteria
- 13:30 – 13:45 Lecture: Precision versus Bias, Systematic Sampling (MJW)
- 13:45 – 15:00 Lecture and discussion: Estimator Variance (LS)
- 15:00 – 15:25 Coffee
- 15:25 – 16:25 Lecture and discussion: Estimator Variance (cont)
- 17:00 – Dinner: MBL Cafeteria_
- 19:30 – Microscope Demonstrations
Participant-Instructor Consultations

Tuesday, April 20, 2010

7:30 – 8:30 Breakfast: MBL Cafeteria

8:30 – 9:30 Lecture: Length (LS)

9:30 – 10:30 Exercise: Estimates of Length with IUR planar probes (MJW)

10:30 – 10:45 Coffee

10:45 – 11:15 Lecture: Length with Isotropic Spherical Probes (MJW)

11:15 – 12:00 Exercise: Length with Isotropic Probes (MJW)

12:00 – 13:30 Lunch: MBL Cafeteria

13:30 – 15:00 Lecture and discussion: Designing a Stereological Study: How many samples,
how many sections, how many animals?

15:00 – 15:30 Lecture: Designing a Pilot Sampling Scheme (LS)

15:30 – 15:45 Coffee

15:45 – 16:45 Lecture: Stereology with the Electron Microscope: Counting and measuring
synaptic contacts (MJW)

17:00 – Dinner: MBL Cafeteria

19:30 – Microscope Demonstrations Microbrightfield

Participant-Instructor Consultations

Wednesday April 21, 2010

- 7:30 – 8:30 *Breakfast:* MBL Cafeteria
- 8:30 – 10:00 *Guest Lecturer:* Dr. Juan Troncoso, Head of Stereology Core of the Alzheimer's Disease and Parkinson's Disease Research Centers at Johns Hopkins University
- 10:00 – 10:20 *Coffee*
- 10:20 – 12:00 *Presentation of StereoInvestigator Software by MicroBrightfield*
- 12:00 – 13:30 *Lunch*
- 13:30 – 15:00 *Lecture and discussion:* Data Reporting
- 15:00 – 15:20 *Coffee*
- 15:20 – 16:00 *Participant Projects Revisited* (5 min. each)...
- 19:00 – *Lobster Bake:* Hosted by Maryam Golchin
(details to be announced)

Workshop Ends

Thursday April 22, 2010

8:00- 9:30 ***Breakfast:*** MBL Cafeteria

10:00 **Latest departure from room**

Instructors:

Mark J. West **(MJW)**
Institute of Anatomy/Neurobiology
University of Aarhus, Denmark

Lutz Slomianka **(LS)**
Department of Anatomy
Zurich University
Switzerland