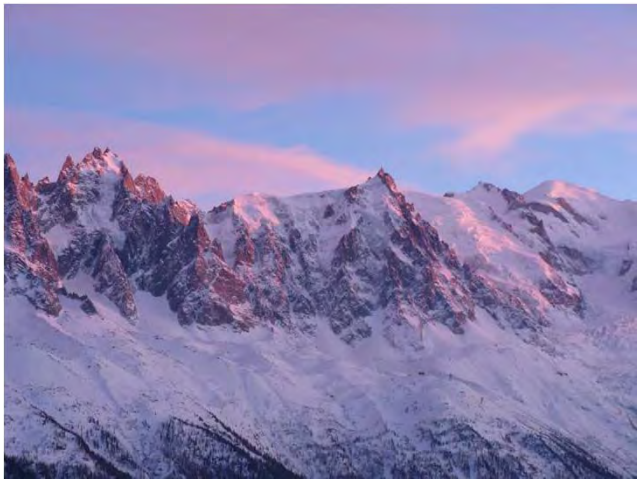
Winter School on THERAPEUTIC ULTRASOUND

Les HOUCHES, France

March 8th – 13nd 2015

Information about the School



Directors: Gail ter Haar (Sutton),
Vera Khokhlova (Moscow) & Jean-Francois Aubry (Paris)

Organized by:
Mathieu Pernot, Thomas Deffieux (Paris) & Cyril Lafon (Lyon)

Objectives:

This Winter School will explore the rapidly emerging field of therapeutic ultrasound. Topics will range from an introduction to the physics and biophysics necessary for understanding these techniques through to their clinical application.

The objectives of the School are to provide a current overview of the field as a contextual background for the work of individuals participating; to encourage discussion and shared consideration of different approaches to understanding ultrasound therapy. Participants will be expected to have a sound basis in their own subject at honours degree level or equivalent, and to be active in the study of minimally invasive therapies in the broadest sense. The course will be given at postgraduate level, and we envisage the course being of primary benefit to two groups: One includes PhD students and new post-docs whose research area falls somewhere within the broad sweep of minimally invasive therapy. The other comprises practising clinical scientists, active in one or more areas of the field, who want a better understanding of current techniques and progress, and wish to anticipate new developments. This is a broad and complex topic in which the synergy of a multidisciplinary approach is particularly valuable. The Winter School will encourage this approach. Each topic will be covered by an Invited Speaker who is a world authority in the field.

Location: The institute is located at Les Houches, near Chamonix, in the French Alps, http://houches.ujf-grenoble.fr/

School Sponsors include:

FLi France Life Imaging

Focused Ultrasound Surgery Foundation

ESHO European Society for Hyperthermic Oncology

ISTU International Society for Therapeutic Ultrasound

Acoustical Society of America
The premier international scientific society in acoustics, dedicated to increasing and diffusing the knowledge of acoustics and its practical applications.

Society for Thermal Medicine

Participants of the School

Program

DATE	TIME	LECTURER	TITLE
Sunday March 8	*From 3.00 pm Arrival – Registration*		
Monday March 9	8.45 – 9.00	J.-F. Aubry / G. ter Haar / V. Khokhlova	Welcome/ Overview & introduction
	Chair: Larry Crum		
	9.00 -9.45	V. Khokhlova	Acoustic propagation – soft tissue
	9.45 – 10.30	J.-F. Aubry	Focusing Ultrasound
	Coffee break		
	11.00 -1130	G. ter Haar	Biophysics: Heating, thermometry
	1130 - 12.15	R. Roy	Biophysics: Cavitation
	12.30 Lunch *5.00 pm Coffee*		
	Chair: Jean-Francois Aubry		
	5.30 – 6.00	T. Deffieux	Basics of US imaging
	6.00 – 6.30	F. Steinmeyer	Basics of MR imaging
	6.30 pm Welcome Drink *Dinner*		
Tuesday March 10	*Chair: Florian Steinmeyer*		
	8.45 - 9.15	R. Berriet	Ultrasound transducers
	9.15 – 9.50	M. Pernot	Monitoring & Guidance – US
	9.50 – 10.30	F. Romano	The route to commercialisation
	Coffee break		
	11.15 – 11.55	E. Repasky	Tumour biology & physiology
	11.55 – 12.30	R. Dallapiazza	Oncology: conventional physical treatments
	12.30 Lunch *5.00 pm Coffee*		
	Chair: Cyril Lafon		
	5.15 -5.45	L. Crum	Cavitation – applications
	5.45 - 6.15	H. Gruell	Thermal biology, thermal dose, cavitation dose
	6.15 – 6.45	O. Sapozhnikov	Calibration & field characterisation
	Evening : L.Crum Glühwein Lecture		

DATE	TIME	LECTURER	TITLE
Wednesday March 11	*Chair:Betsy Repasky*		
	8.45 - 9.30	B. Quesson	Monitoring & Guidance – MR
	9.30 -10.15	H. Gruell	Ultrasound mediated drug delivery
	Coffee break		
	10.40 -11.15	G. ter Haar	Histology for HIFU
	11.15-12.00	R. Dallapiazza	Brain therapies
	12.00 Lunch *5.30 pm Coffee*		
	Chair: Robert Dallapiazza		
	5.45 – 6.05	G. ter Haar	HIFU treatment of pain
	6.05 - 6.45	D. Cosgrove	Cancers of the abdomen
	Evening : F Steinmeyer / B Quesson: What you always wanted to know about MRI and did not dare to ask		
Thursday March 12	*Chair: Oleg Sapozhnikov*		
	9.00 – 9.45	B. Fowlkes	Histotripsy
	9.45-10.15	E. Repasky	Tumour immunology/immunotherapy
	Coffee break		
	11.00-11.45	R. Cleveland	Lithotripsy & SWT
	12.00 Lunch *4.30 pm Coffee*		
	Chair:Brian Fowlkes		
	5.30 –6.45	Student presentations	
	Evening : (Table) Football world cup		
Friday March 13	*Chair: Vera Khokhlova*		
	9.00 - 9.45	F. Prieur	Matching transducer geometry to clinical targets
	9.45 - 10.15	G. ter Haar	Experimental design
	Coffee break		
	11.00 - 11.45	J.-F. Aubry	FDA and CE Approved Devices
	11.45 - 12.00	Closing	
	Lunch *Departure to the airport*		

Lecturers

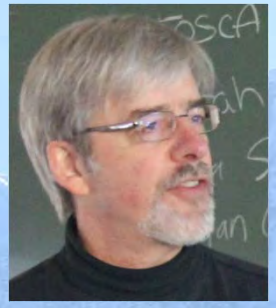
Lecturer	Institute	Country
J.F. Aubry	Institut Langevin, Paris	France
V. Khokhlova	Moscow State University, Moscow	Russia
G. ter Haar	Institute of Cancer Research, Sutton	Great Britain
R. Roy	University of Oxford	Great Britain
L. Crum	University of Washington, Seattle	USA
M. Pernot	Institut Langevin, Paris	France
R. Berriet	Imasonic, Besançon	France
B. Quesson	Université Bordeaux	France
T. Deffieux	Institut Langevin, Paris	France
F. Steinmeyer	Technische Hochschule Nuremberg	Germany
F. Romano	EyeTechCare, Lyon	France
O. Sapozhnikov	Moscow State University, Moscow	Russia
E. Repasky	Roswell Park Cancer Institute, New York	USA
B. Fowlkes	University of Michigan, Ann Arbor	USA
F. Prieur	LabTau, Inserm U1032, Lyon	France
R. Dallapiazza	University of Virginia, Charlottesville	USA
H. Gruell	Eindhoven University of Technology	Netherlands
D. Cosgrove	Imperial College, London	Great Britain
R. Cleveland	University of Oxford	Great Britain

Lecturers

J.F. Aubry

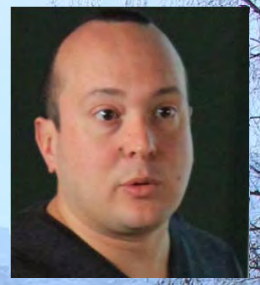
V. Khokhlova

G. ter Haar

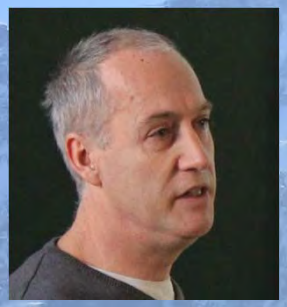


R. Roy

L. Crum



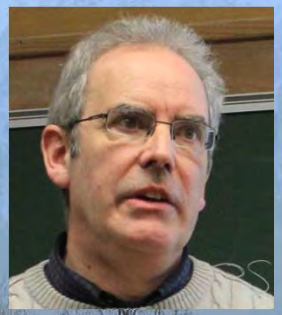
M. Pernot



R. Berriet

B. Quesson

T. Deffieux



F. Stenmeyer

F. Romano

O. Sapozhnikov

E. Repasky

B. Fowlkes

F. Prieur

R. Dallapiazza

H. Gruell

D. Cosgrove

R. Cleveland

Participants from MSU, Russia

O. Sapozhnikov

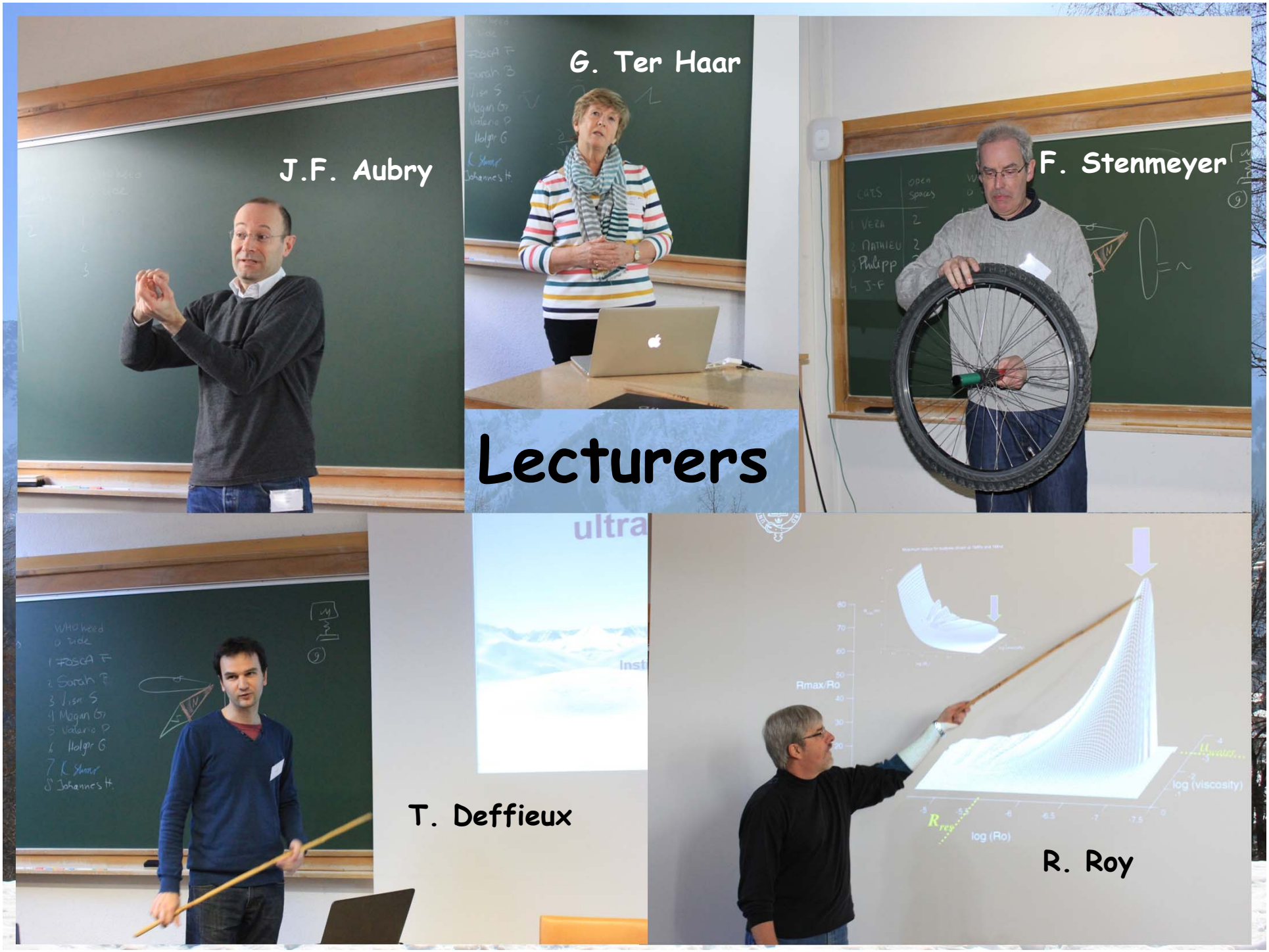
P. Rosnitskiy

V. Khokhlova

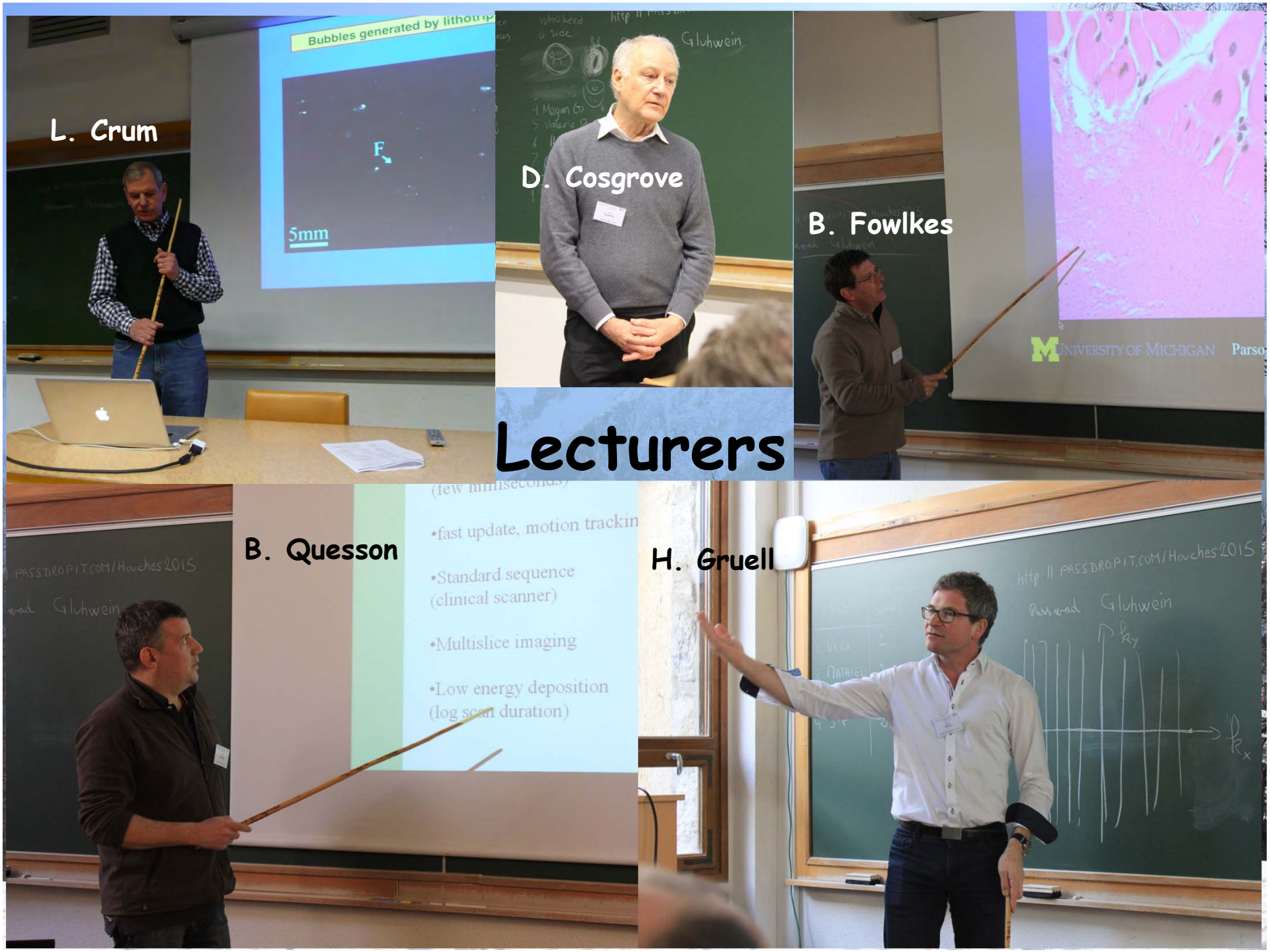
A. Nikolaeva

M. Karzova

E. Annenkova

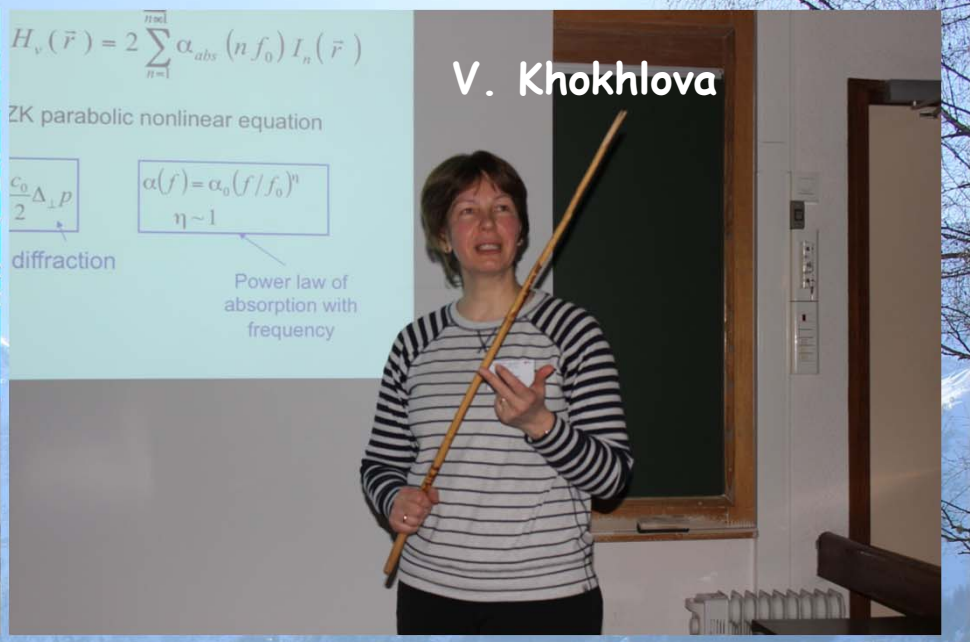

J.F. Aubry
G. Ter Haar
F. Stenmeyer
Lecturers
T. Deffieux
R. Roy
Rmax/Ro
log (Ro)
log (viscosity)

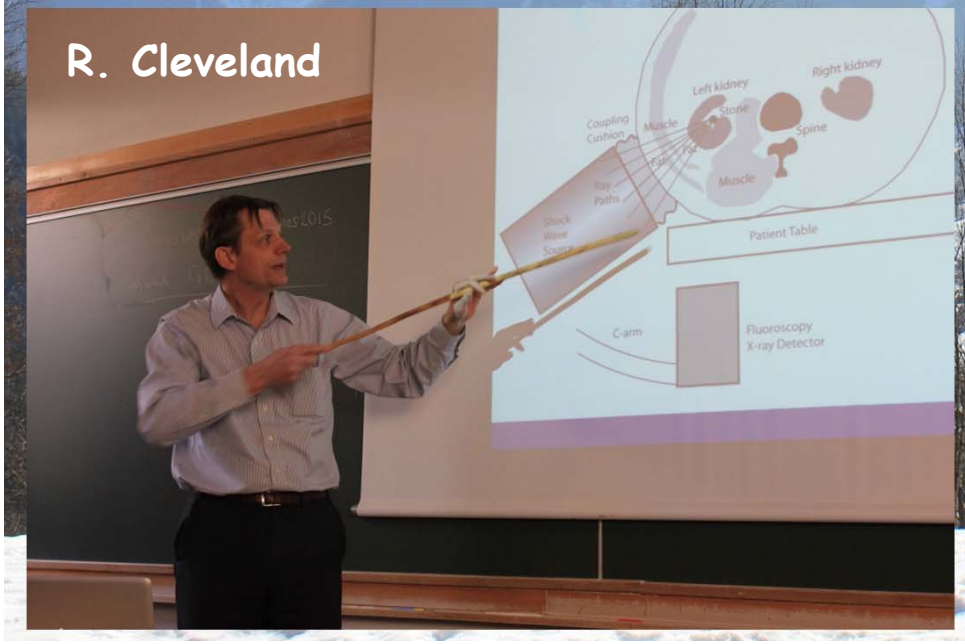

R. Berriet
M. Pernot
R. Dallapiazza
Lecturers
F. Romano
EyeOP1
E. Repasky
Elizabeth A. Repasky, Ph.D.
Dept. of Immunology
Roswell Park Cancer Institute
Buffalo, New York, USA
Elizabeth.repasky@roswellpark.org
Winter School on Therapeutic Ultrasound
Les Houches, France
March 10, 2015


L. Crum
Bubbles generated by lithotripter
5mm
D. Cosgrove
Gluhwein
B. Fowlkes
UNIVERSITY OF MICHIGAN
Lecturers
B. Quesson
•fast update, motion trackin
•Standard sequence (clinical scanner)
•Multislice imaging
•Low energy deposition (log scan duration)
H. Gruell
http // PASSDROPIT.COM/Houches2015
Gluhwein

Lecturers


O. Sapozhnikov


V. Khokhlova
ZK parabolic nonlinear equation
diffraction
Power law of absorption with frequency


R. Cleveland
Left kidney
Right kidney
Stone
Spine
Muscle
Coupling Cushion
Patient Table
C-arm
Fluoroscopy
X-ray Detector


F. Prieur
Therapeutic transducers

Lecture room

Accommodation

Coffee breaks

Student presentations


Anastasiia Nikolaeva


Suomi Visa


Johannes Helfrich


James Robertson


Bjoerm Georg


Pavel Rosnitskiy


Maria Karzova


Kya Shoar


Olivier Villemain


Justine Robin


Elena Annenkova


Maxim Lafond


Karla Mercado


Emma Grygotis


Paul Greillier


Sarah Brueningk


Shenwen Huang


Karin Skalina


Michael Plaksin


Peter Gyring


Megan Grundy


Harriet Lea-Banks

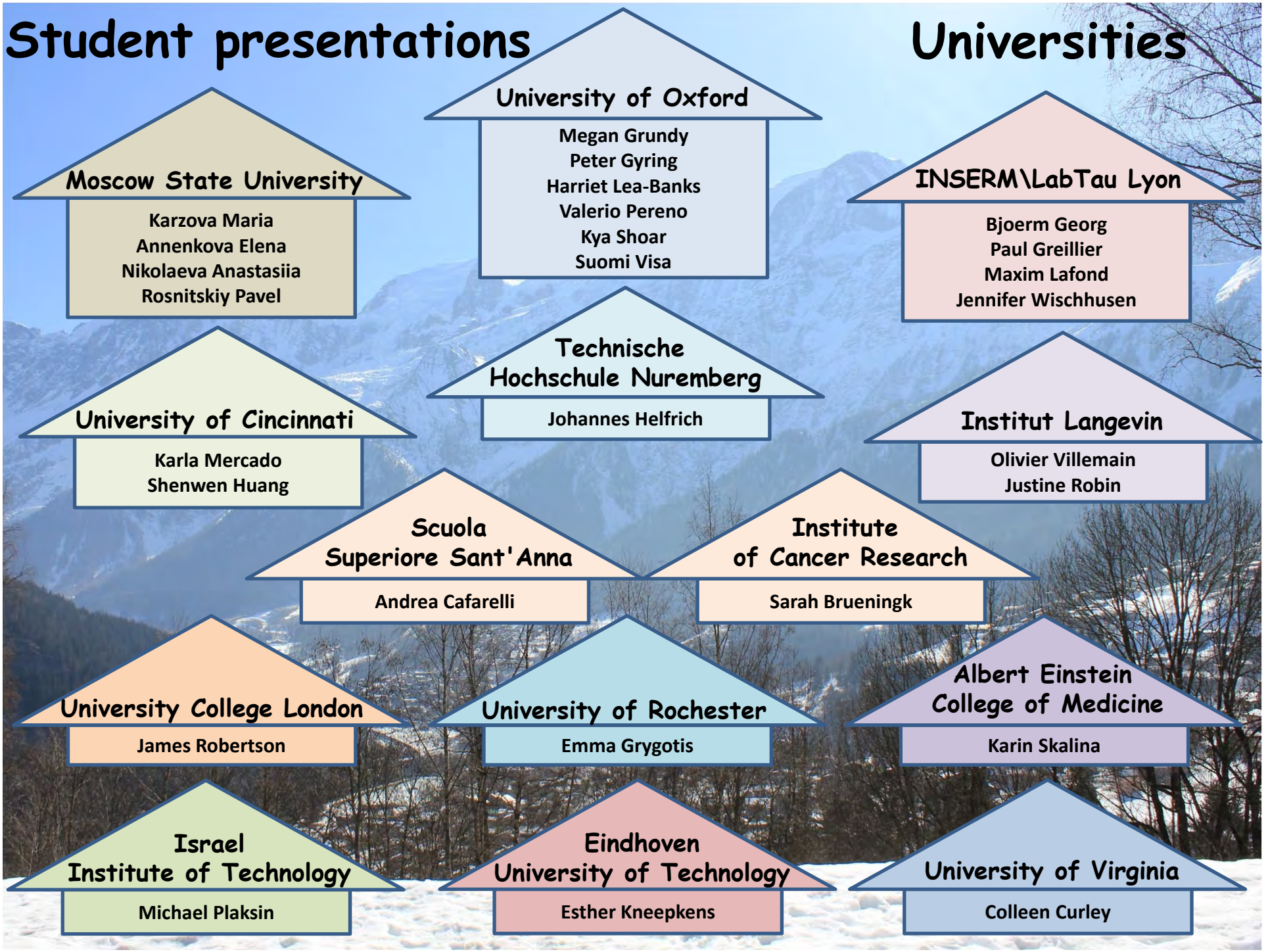

Esther Kneepkens


Valerio Pereno


Jennifer Wischhusen


Colleen Curley


Andrea Cafarelli


Student presentations
Universities
University of Oxford
Megan Grundy
Peter Gyring
Harriet Lea-Banks
Valerio Pereno
Kya Shoar
Suomi Visa
Moscow State University
Karzova Maria
Annenkova Elena
Nikolaeva Anastasiia
Rosnitskiy Pavel
INSERM\LabTau Lyon
Bjoerm Georg
Paul Greillier
Maxim Lafond
Jennifer Wischhusen
Technische Hochschule Nuremberg
Johannes Helfrich
University of Cincinnati
Karla Mercado
Shenwen Huang
Institut Langevin
Olivier Villemain
Justine Robin
Scuola Superiore Sant'Anna
Andrea Cafarelli
Institute of Cancer Research
Sarah Brueningk
University College London
James Robertson
University of Rochester
Emma Grygotis
Albert Einstein College of Medicine
Karin Skalina
Israel Institute of Technology
Michael Plaksin
Eindhoven University of Technology
Esther Kneepkens
University of Virginia
Colleen Curley

Restaurant

In the evenings

Gala dinner

Award Ceremony

Best student presentations

Best student presentations

Evening lectures

Debutant

Skiing

Chamonix


univers du Bonbon
PHOTO ALPINE


BUREAU
de la C des GUIDES
RENSEIGNEMENTS
LCL
Zanetta


See you in 2017