

2023 HUG COURSE AND WET LAB:  
FUNDAMENTALS OF  
**OPHTHALMIC  
MICROSURGERY**

SAVE THE DATE ▼

OPHTHALMOLOGY

Friday 10 & Saturday 11 February 2023

Organized by  
**Prof. Dr. med. G. Thumann**  
Chair of the Division of  
Ophthalmology, HUG

## Faculty



Dr. H. Abou Zeid



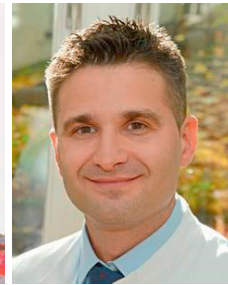
Dr. I. Ciotu



Dr. A. Consigli



Dr. E. De Clerck



Dr. I. Guber



Dr. G. Kann



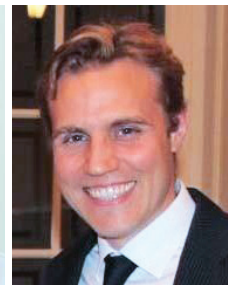
Dr. M. Kecik



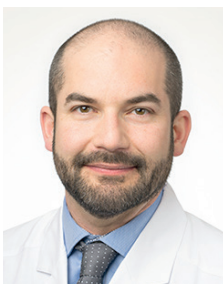
PD Dr. A. Kreis



PD Dr. A. Malclès



PD Dr. H. Massa



Dr. B. Pilly



Dr. C. Springer-Wanner



Dr. D. Tabibian



Dr. Z. Varga



Dr. B. Pajic

## Course Directors

**Prof. Dr. med.  
G. Thumann**

Head of the Division  
of Ophthalmology,  
Geneva University  
Hospitals (HUG),  
Geneva, CH



**Prof. Dr.  
J. Schutz**

Former Chief of Ophthalmology at  
the Patterson Army Hospital, Ft.  
Monmouth, NJ, USA

Retired, but still active in publishing  
articles. 2006-2014 Division of  
ophthalmology HUG, last years as  
"Professeur invité". Supervision of  
the "Urgences" and responsible  
for the academic schedule and  
continuing medical education and  
supervision of externs.

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## Course objectives

- Setting up the operating microscope
- Anatomic and physiologic bases of cataract surgery
- Preop preparation and positioning of the patient for routine intraocular surgery
- Aseptic technique in ophthalmic microsurgery
- 10-0 nylon suture handling
- Suturing conjunctiva and cornea
- Basics of biometry
- Premium IOLs - patient selection
- Strategy and tactics of phacoemulsification surgery (part II)
- Strategy phacoemulsification surgery part II
- Viscoelastics in the different steps of cataract surgery
- Phaco complications and anterior vitrectomy
- Introduction to anesthesia including management of complications
- Phaco and I/A console settings and their effects
- Repair of lid skin lacerations
- Core and peripheral vitrectomy

### Location

- **SFITS** - SWISS Foundation for Innovation and Training in Surgery  
Rue Gabrielle-Perret-Gentil 4  
1205 Geneva  
[www.sfits.ch](http://www.sfits.ch)

## 2023 Course Schedule

Friday, 10 February		
	Group 1	Group 2
08:00	Registration - Morning coffee	
08:20	Welcome and course objectives by Prof. G. Thumann	
08:30	Functions and set up of the phaco and I/A probes and console: Industry presentation	
09:00	Seminars 1-4	Wet Lab + Dry Lab
11:00	Wet Lab + Dry Lab	Seminars 1-4
12:20	Lunch	
13:30	Seminars 5-8	Wet Lab + Dry Lab
15:30	Wet Lab + Dry Lab	Seminars 5-8
16:50	Panel discussion	

Saturday, 11 February		
	Group 1	Group 2
8:00	Questions and answers - Morning coffee	
8:30	Review of functions and set up of phaco and I/A probes, console, and trouble shooting: Industry presentation	
9:00	Wet Lab + Dry Lab	Seminars 9-12
11:00	Seminars 9-12	Wet Lab + Dry Lab
12:20	Lunch	
13:30	Wet Lab + Dry Lab	Seminars 13-16
15:30	Seminars 13-16	Wet Lab + Dry Lab
16:50	Questions and course evaluation	

## Registration and Information

**Registration fee:** CHF 250.- per person

**Number of participants:** 30

**Course language:** English

**Registration deadline:** Wednesday, December 7, 2022

**Inscription:** Please book your participation via the SFITS Calendar web application

[calendar.sfits.ch](https://calendar.sfits.ch)



A certificate of attendance will be distributed at the end of the course

Friday, 10 February, 2023

### Morning Session

Registration – Morning coffee

Functions and set up of the phaco  
and I/A probes and console – Industry presentation

#### **Seminar 1:** **INTRODUCTION TO ANESTHESIA FOR INTRAOCULAR SURGERY INCLUDING MANAGEMENT OF COMPLICATIONS**

Open vs closed intraocular surgery;  
Positive vitreous pressure.

Retrobulbar, peribulbar, parabolbar blocks with  
MAC vs general anesthesia (.pdf handout by email);  
why, when, and how canthotomy and cantholysis?

#### **Seminar 2:** **ASEPTIC TECHNIQUE IN OPHTHALMIC MICROSURGERY**

How to avoid postop endophthalmitis: prep, draping, draping of  
lashes and skin, no touch technique (instrument tips), pre-op and  
post-op prophylaxis controversy, intracameral antibiotics.

#### **Seminar 3:** **PREOP PREPARATION AND POSITIONING OF THE PATIENT FOR ROUTINE INTRAOCULAR SURGERY**

Pupil dilation, position on the table, support of the head, head  
above the heart, anesthesia.

#### **Seminar 4:** **SETTING UP THE OPERATING MICROSCOPE**

Set up protocols for first case of day and for each case. Bracing  
of hands and wrist rest. Surgeon position.

#### **WET LAB + DRY LAB**

The course is organized in two groups. One group will start with  
the seminars as outlined; the second group will start with the  
Wet Lab and have the seminars between 11:00 and 12:20. Group  
assignment will be done at the time of registration. During the  
Wet Lab, participants have access to the microsurgery simulator  
to perform virtual surgery.

Lunch Break

### Afternoon Session

#### **Seminar 5:** **ANATOMIC AND PHYSIOLOGIC BASES OF CATARACT SURGERY**

Lens size and hardness, incision location options, the zonule,  
Weiger's ligament, IOP, positive vitreous pressure.

#### **Seminar 6:** **BASICS OF BIOMETRY**

How is IOL power chosen? Why is it important to get accurate  
axial length measurements? How axial length is best measured?

#### **Seminar 7:** **VISCOELASTICS IN THE DIFFERENT STEPS OF CATARACT SURGERY**

Which, when, why, viscoelastic acute ocular hypertension - cause  
and management, common viscoelastics and their uses, cohesive  
vs dispersive, viscoelastic "glaucoma", when, why, treatment  
guidelines (medical vs release of aqueous and its technique).

#### **Seminar 8:** **PHACO AND I/A CONSOLE SETTINGS AND THEIR EFFECTS**

Phaco and I/A handpiece functions. Console setting (infusion  
height, vacuum, flow, power) and their effects. Phaco probe  
variations.

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Wet Lab and have the seminars between 15:30 and 16:50. Group  
assignment will be done at the time of registration. During the  
Wet Lab, participants have access to the microsurgery simulator  
to perform virtual surgery.

Panel discussions

Saturday, 11 February, 2023

### Morning Session

Registration - Morning coffee - Questions and answers

Functions and set up of the phaco probe, console review and troubleshooting; anterior vitrectomy – Industry presentation

#### Seminar 9:

##### PREMIUM IOLS - PATIENT SELECTION

IOL fixation alternatives and their respective advantages and disadvantages (capsular bag, sulcus, sutured in sulcus, iris clip, angle).

#### Seminar 10:

##### STRATEGY AND TACTICS OF PHACOEMULSIFICATION SURGERY PART I

Primary incision: clock hour, corneal vs limbal, water-tight vs leaky, construction options (1, 2, 3 plane; length vs width). Side port incision(s): 1 or 2, optimum location, construction. Capsulorhexis vs can-opener, size and guidelines for safe creation. Hydrodissection: why, when, and how?

#### Seminar 11:

##### STRATEGY AND TACTICS OF PHACOEMULSIFICATION PART II

Nuclear removal techniques: 4 quadrant or chopping or soft nucleus aspiration

Cortical clean up: I/A tip or “split” I/A; how much cortex can you leave?

Posterior capsular polishing: when, why, how?

Typical IOL loading and injection in the “bag” or “sulcus”.

Removal of viscoelastic.

Water tight closure: hydration vs sutures.

#### Seminar 12:

##### PHACO COMPLICATIONS AND ANTERIOR VITRECTOMY

Reiteration of rhexis guidelines, why does a rhexis “go out”.

What to do when a rhexis goes out under the iris or if anterior capsular tear?

Signs of a ruptured posterior capsule and what to do about it.

Signs of zonular dehiscence intraop and what to do about it.

#### WET LAB + DRY LAB

The course is organized in two groups. One group will start with the seminars as outlined; the second group will start with the Wet Lab and have the seminars between 11:00 and 12:20. Group assignment will be done at the time of registration. During the Wet Lab, participants have access to the microsurgery simulator to perform virtual surgery.

Lunch Break

### Afternoon Session

#### Seminar 13:

##### REPAIR OF LID SKIN LACERATIONS

Basic principles of skin wound suturing. Be sure it is just skin.

Debridement (devitalized tissue and foreign material). Suture bites - apposition without crushing. Hemostasis. Eliminate dead space.

Suture materials and size. Closure under tension. Suture removal.

#### Seminar 14:

##### SUTURING CONJUNCTIVA AND CORNEA

Perpendicular bites for cornea, depth of bites, tightness of sutures, closing corneal-scleral incisions/lacerations.

#### Seminar 15:

##### 10-0 NYLON SUTURE HANDLING

10-0 nylon loading, suturing, tying, cutting. Burying of the knot. Pros and cons of suture elasticity. ▶

#### Seminar 16:

##### CORE AND PERIPHERAL VITRECTOMY

Patient preparation and follow-up. Antibiotics. Anti-VEGF.

Complications and management.

#### WET LAB + DRY LAB

The course is organized in two groups. One group will start with the seminars as outlined; the second group will start with the Wet Lab and have the seminars between 15:30 and 16:50. Group assignment will be done at the time of registration. During the Wet Lab, participants have access to the microsurgery simulator to perform virtual surgery.

Question and course evaluation

## Wet Lab Exercises

### Exercise 1. Operating Microscope Set-up

#### A: Before arrival of patient

- Center microscope focus (Z-axis).
- Center microscope X-Y axes.
- Place foot controls (if available) and assistant microscope.
- Oculars clean and adjusted: zeroed, interpupillary distance (PD), horizontal angle.
- Adjust surgeon's stool height for comfort.

#### B: With patient on the table: 6 critical set-up steps for every case

- Manually position microscope over eye; pull microscope so light on limbus.
- Manually pull microscope up (lift) or down (lower) for best focus on limbus.
- Foot control X-Y joy stick to center field on superior or temporal limbus.
- Foot control zoom up to maximum magnification.
- Foot control focus critically on the limbus.
- Zoom down magnification to a field of about 2 corneal diameters.

### Exercise 2. Practice instrument tie of square knots with spring action needle holder

An essential microsurgical skill, using 5-0 suture without microscope on a cotton pad. Practice tying in different directions until it is easy. What is the shortest length of suture you can easily tie?

### Exercise 3. Practice loading and tying 10-0 nylon safely

Without touching the needle with your fingers and without moving your eyes from the microscope oculars using a length of 10-0 nylon:

- Place 10-0 needle on the cornea or limbus of a practice porcine eye.
- Hold the suture 1.5-2.5 cm above the needle with tying platform of Bonn or Colibri forceps so the outer convex edge of the needle rests on the eye by gravity and tear film capillary action (keep the eye moist).
- Rotate the needle on the surface of the eye in the direction desired (practice this forehand, backhand, to the right and to the left so you can easily make the needle face any direction).
- Grab the needle 2/3 from the tip with the spring action needleholder.



## Wet Lab Exercises

### Exercise 4. Practice 10-0 nylon superficial corneal and scleral suture bites on porcine eyes and tie square knots (3-1-1) with tying forceps

- Practice suturing forehand, backhand, to right and left. Cut suture ends short with scissors before tying. Never touch the needle or suture with your gloved fingers, only the suture with forceps.
- Determine the shortest length of suture you can tie by trial and error.
- Determine the ideal length of cut suture ends for tying.

### Exercise 5. Suture incisions with 10-0 nylon

An essential microsurgical skill which requires practice to perform easily and consistently without breaking or overstretching the suture. Practice this in now and in the future until it is very easy for you.

- Practice 10-0 nylon suturing of half thickness corneal and limbal incisions (vertical, horizontal, oblique incisions) and close the incision with triple throw square knots (3-1-1); cut the knots short with scissors and later with a superblade. Bury the knot with tying forceps. (When cutting with superblade, draw the suture across the blade edge, holding the blade stationary and moving the suture.) How short you can cut the suture close to the knot without it untying?
- Practice suturing full thickness corneal incisions (vertical, horizontal, oblique) with 10-0 nylon, tying and cutting knots with scissors and with a blade. These suture bites should be very deep. Bury the knots.
- Practice suturing very shelved keratome phacoemulsification incisions (perfect apposition of these very shelved incisions is difficult).

### Exercise 6. Preparation for phaco

- Set up and test phaco emulsification machine, set console parameters.

### Exercise 7. Phaco – Clear Cornea

- Make side incision(s), instill viscoelastic, and make primary incision.
- Capsulorhexis under viscoelastic.
- Hydrodissection.
- Phaco the nucleus.
- Perform I/A or split I/A for cortical clean up.
- Load and insert IOL.
- Hydrate or suture the incision if necessary and bury knot(s). Test watertight.

### Exercise 8. Phaco – Limbal tunnel

- Make a 3.2 mm long, vertical, 1/3 – 1/2 depth, posterior limbal incision.
- Dissect scleral tunnel flap into clear cornea with crescent blade.
- Perform side port incisions and instill viscoelastic.
- Make primary phaco keratome incision into anterior chamber.
- Phacoemulsify and insert IOL.

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