## The American Laser Study Club Presents

# Myths and Physics of Surgical and Dental Lasers

## Including Laser-Tissue Interaction, Laser Safety, and **Hands-On Training**

1-Day Participation Laser Surgery Workshop

(Intended audience: physicians, dentists and veterinarians)

**When:** Saturday
December 1st, 2018
January 5th, 2019
Februay 9th, 2019

**Time:** 9:00 AM - 3:00 PM

**Where:** 11818 N Creek Pkwy N
Suite 100
Bothell, WA 98011

## Meet the Instructor

**Peter Vitruk**
PhD, MInstP, CPhys, DABLS

Dr. Vitruk is a laser physicist who founded the American Laser Study Club and several laser companies, including LightScalpel, LLC; Aesculight, LLC; and Luxar-Care, LLC. Dr. Vitruk has co-authored 10 patents and over 50 articles on $CO_2$ laser technology and applications. He is a Member of The Institute of Physics, UK and is passionate about laser-tissue interaction education.

## Tuition

ALSC Members: $345
Non-Members: $395
LightScalpel / Aesculight Owners: $100 OFF

## Registration

To register, please follow the link:

**alsc.club/seattle**

**Introduction:** What makes a good surgical laser? A good surgical laser for cutting soft tissue must be able to (1) efficiently vaporize soft tissue, and, at the same time, (2) efficiently coagulate surgical margins. Not all laser wavelengths are suitable to comply with both requirements. How deep does the laser cut? How deep do different laser wavelengths and pulse settings coagulate? Clearly, different settings deliver different laser-tissue effects, which must be efficiently managed and controlled by properly trained and knowledgeable surgeons.

This course focuses on the practical aspects of soft tissue laser surgery, as well as on the fundamental processes involved in the laser-tissue interaction and helps attendees learn how deep the laser beam cuts and how deep the coagulation and hemostasis extend into the surgical margins. Our **hands-on participation lab** is designed to be second to none in training attendees on what surgical lasers can do safely and efficiently. (2-3 attendees per laser station, 1 pig jaw per attendee, approx. **60 minutes of laser use time per attendee**, each laser station is equipped with high speed suction/plume evacuation, USA designed and made LightScalpel and VetScalpel lasers and accessories are utilized).

**Laser Curriculum:** Laser Surgery and Safety Basic Knowledge Certification Curriculum for this Course has been developed by the American Laser Study Club (ALSC). The ALSC's curriculum overcomes the known limitations of many laser dentistry courses, and includes the detailed physics of soft tissue ablation and coagulation with laser and hot tip (non-laser) devices. ALSC will provide lecture note handouts, ALSC online laser-tissue interaction knowledge exam and an option for online laser safety training and examination through the Laser Institute of America. Laser hands-on wetlab on tissue samples will include laser safety instructions and demonstrations.

**Course Certificates:** Course participants, who successfully complete examination, will be awarded a **LASER SAFETY basic knowledge CERTIFICATE** from the Board of Laser Safety of the Laser Institute of America (**DISCOUNTED** cost for the ALSC members), as well as a **Laser Dentistry and Laser Surgery Basic Knowledge and Hands-On participation Wetlab CERTIFICATE** from the American Laser Study Club (**FREE** for the course participants).

Laser Institute of America

THIS PROCLAMATION CERTIFIES THAT

PETER VITRUK

HAS COMPLETED LASER INSTITUTE OF AMERICA'S

$CO_2$ MEDICAL LASER SAFETY ONLINE

TRAINING CONSISTING OF BIOPHYSICS AND TISSUE INTERACTION, SAFETY STANDARDS, OPERATIONAL SKILLS, AND POSTOPERATIVE LASER SAFETY. SCORED 0.1 ON POSTS BY THE BOARD OF LASER SAFETY.

JANUARY 24, 2018 — DATE

EDUCATION DIRECTOR

American Laser Study Club

Jane J. Doe, DDS, MD, DVM, PhD

Attended xxxx hours of Surgical & Dental Laser Hands-On Participation Workshop and Wetlab, and Successfully Passed the Written Examination and is Awarded a Certificate of Completion in Laser Dentistry, Laser Surgery and Laser Safety Studies

Certificate No. Number

## Agenda

**3 hours - Didactic material:**

- Why Wavelength Matters
- Light Absorption by the Soft Tissue and Hard Tissue
- Light Scattering
- Photo-Thermal Laser Tissue Interaction
- Thermal Relaxation Time
- Tissue Ablation and Vaporization
- Ablation Threshold Fluence
- Ablation and Cutting Depth
- SuperPulse
- Cutting Depth Control
- Coagulation and Hemostasis

**Hands-On Participation Session:**

- Laser Safety
- Laser Surgical Technique Simulations
- Superficial Ablation
- Superficial Coagulation
- Shallow Incisions
- Deep Incisions
- Practicing Surgical Techniques on a Pig Jaw

**3 hours**

**About the ALSC:** American Laser Study Club (ALSC - www.AmericanLaserStudyClub.com) was founded by Peter Vitruk, PhD, MInstP, CPhys to promote science-based laser dentistry, surgery and safety education. The ALSC is proud of its curriculum and its distinguished membership, including our honorary members **Gordon J. Christensen**, DDS, MSD, PhD and **Rella P. Christensen**, RDH, PhD, world renowned leaders in dental product research and education, who welcomed ALSC's mission: "Peter, we congratulate you on starting a laser study club. It is greatly needed, and you are the man to do it." Other Honorary Members of the ALSC are **Charles M. Cobb**, DDS, MS, PhD, Professor Emeritus, Department of Periodontics, School of Dentistry, University of Missouri-Kansas City; and **C. Kumar N. Patel**, PhD, MS, the Inventor of the $CO_2$ Laser; Recipient of National Medal of Science (1996); Member of US National Inventors Hall of Fame 2012; Professor Emeritus, UCLA. The ALSC is proud to have helped many dentists and surgeons.