

# AO PEER Online Blended Course— **Principles of Clinical Research**

Online preparations:  
Starting mid-June,  
2021

Synchronous online  
event: July 6–7, 2021  
(UTC +2)

Online follow-up:  
July 8–15, 2021

PROGRAM



Are you a clinician who wants to do **research** and **publish** results?



# Get up to speed on every aspect of your research with **AO PEER**

AO PEER is a research education program that supports you, as a surgeon, in your research activities.

Learn about the fundamentals of research, critical reading, and grant writing. Get organised with study management, data management, and statistics. Learn how to properly present your results.

The subscription is free to all AO members. To learn more about the program and upcoming courses in your region, go to

[www.aopeer.org](http://www.aopeer.org)

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## Mission

The AO's mission is promoting excellence in patient care and outcomes in trauma and musculoskeletal disorders.

## Purpose statement

In its work to advance the AO's mission, AO PEER's purpose is to support surgeons in their clinical and translational research activities with innovative education and tools.

## AO PEER offerings

### Level 1

Principles of clinical research course

#### 8 modules

- Importance of research
- Basics of GCP
- Study questions
- Literature review
- Research environment
- Basics of statistical thinking
- Basics of medical writing
- Make your research project a success

### Level 2

Advanced courses

- Grant writing
- Study management and GCP
- Publication writing

### Level 3

Research mentorship program

## Welcome

Dear AO PEER course participant,

It is our distinct pleasure to welcome you to the AO PEER blended course. Like you, we understand that research is key to advancing patient outcomes and—like you—we know that initiating, planning and conducting research can be challenging. AO PEER learning opportunities are designed by surgeons, for surgeons, and the AO PEER Principles of Clinical Research course is designed to take your clinical research skills to the next level.

In this blended program including an online precourse (1 month) and a 2-days synchronous online event, we will introduce you to evidence-based medicine, ethical imperatives, critical appraisal of the literature, statistics, and publication writing.

We look forward to engaging with you and providing you with a memorable, best-in-class learning experience that will serve you for a lifetime.

Sincerely yours,



**Matthew Allen**

Chair  
Professor of Small  
Animal Surgery,  
Cambridge University,  
United Kingdom  
AO PEER Taskforce  
member



**Ken Johnson**

Co-chair  
Consultant specialist in orthopedics,  
Emeritus professor, University of  
Sydney School of Veterinary Science,  
Research affiliate, Prince Wales  
Hospital Surgery and Orthopaedic  
Research Laboratory, University of New  
South Wales, Sydney, Australia

## Course description

Participants will learn about the importance of research and evidence-based medicine (EBM), the relevant ethical considerations and guidelines for Good Clinical Practice (GCP) with a focus on the formulation of a clinical research question.

In addition to practicing some of the skills related to critical literature review, this course offers support in working with a statistician, and navigating the AO Program for Education and Excellence in Research (AO PEER) to help make their research project a success.

In this blended program, the basic principles will be taught in an online setting over a 1-month period, followed by a 2 days synchronous online event with interactive workshops and discussions.

**Time zone:**  
**Central European Time (UTC +2)**

For more information, please visit [www.aopeer.org](http://www.aopeer.org).

Access is free for all members of an AO Clinical Division.

## Goal of the course

The goal of this course is to introduce the principles of clinical research, including skills and knowledge on why and how to do research, how to build a good research environment, and where to find additional resources, tools, and reference packages to support a research project.

## Target participants

This course is targeted at individuals who want to learn or improve the skills for conducting clinical research and publishing results and also at those with a general interest in research and documentation of clinical cases.

## Learning objectives

At the end of this course, participants should be able to:

- Explain the importance of doing research and the link to evidence-based medicine
- Apply the basic principles of literature search and critical appraisal
- Follow GCP guidelines and adhere to ethical requirements, eg, informed consent
- Identify a clinical problem, formulate a clinical research question, and select the study design
- Collaborate with a statistician to perform sample size calculation and basic statistical analyses
- Describe the principles of medical writing
- Utilize available research environment, resources, and tools

## Chairpersons



**Matthew Allen**

Professor of Small Animal Surgery, Cambridge University, United Kingdom  
AO PEER Taskforce member



**Ken Johnson**

Consultant specialist in orthopedics, Emeritus professor, University of Sydney School of Veterinary Science, Research affiliate, Prince Wales Hospital Surgery and Orthopaedic Research Laboratory, University of New South Wales, Sydney, Australia

## Teachers



**Kirsten Häusler**

PhD, Certified Canine Rehabilitation Practitioner  
Zentrum für Tierphysiotherapie  
Stuttgart, Germany



**Frankie Leung**

MD, AO PEER Taskforce member  
Chief of Division of Orthopaedic Trauma  
Queen Mary Hospital  
Hong Kong



**Risto Kontio**

MD, DDS, PhD, AO PEER Taskforce member  
Vice Chair and Specialist Maxillofacial Surgeon at the University of Helsinki, Finland

# Online preparations: starting mid-June, 2021

Please note that these activities are mandatory and will not be repeated during the synchronous online event. Please complete the following precourse activities in Totara. Access after registration via <https://learn.aeducation.org>

## Welcome and introduction to the Totara system

### 1 hour

- Upload your picture to your profile
- Download the logbook to document your learnings
- Tell us about you and get to know each other in the forum
- Identify own gaps by completing the self-assessment

## Module 1

### Why is research important?

#### 1 hour 30 minutes

- Recognize the importance of clinical research
- Explain what evidence-based medicine (EBM) is and why it is important
- Define how EBM can be beneficial for you and contribute to your practice

## Module 2

### Does your study follow the ethical guidelines?

#### 2 hours 15 minutes

- Recognize the important milestones in the history of ethical principles in clinical research
- Describe the guidelines defining the ethical and scientific principles of clinical research
- Outline the concept of ethics committee review and where to find more details
- Apply principles of how to inform a patient about a study

## Module 3

### Step-by-step to your research question

#### 3 hours 20 minutes

- Explain what needs to be fulfilled to make a clinical problem suitable for a research project
- Describe the steps to formulate a structured and specific clinical research question by applying the PICOT concept
- Describe the different study designs, their pros and cons

## Module 4

### Literature—reading between the lines

#### 2 hours 10 minutes

- Explain the different purposes of literature searches
- Special focus: PubMed: Apply different types of searches
- Implement a systematic process to read, synthesize, and critically appraise the literature



## **Module 5**

### **How to navigate your research environment**

#### **1 hour 50 minutes**

- Describe the most important responsibilities of a principal investigator
- Outline the elements of a good research environment
- Recognize the value of mentorship and teamwork from the first idea through to publication

## **Module 6**

### **Give your study statistical power**

#### **2 hours 30 minutes**

- Explain the most important statistical terms (P value, confidence interval, numerical vs categorical variables, descriptive vs inferential statistics)
- Apply the most important statistical tools
- Apply the basic rules to setup and maintain a database in a clinical study

## **Module 7**

### **Getting ready to publish**

#### **1 hour 30 minutes**

- Recognize the structure of a manuscript about a clinical study and use the "Manuscript Maker"
- Explain why reference management systems should be used

## **Module 8**

### **Make your research a success**

#### **10 minutes**

- Navigate through the AO PEER platform to look for resources for self-directed learning

### **Post-course online follow-up**

#### **1 hour**

- Complete the postcourse self-assessment
- Complete the course assessment with knowledge questions about all modules
- Provide feedback about the course

**Tuesday** (Synchronous online event: UTC +2)  
July 6, 2021

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## Module 1

### Why is research important?

08:30–08:40	<b>Welcome</b>	Matthew Allen
08:40–09:10	<b>What can EBM do for you?</b> Small group discussions	Risto Kontio
09:10–09:20	<b>Wrap-up Module 1</b> Discussion	Frankie Leung

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## Module 2

### Does your study follow the ethical guidelines?

09:20–10:05	<b>Ethical approval case studies</b> Workshop	Matthew Allen
10:05–10:15	<b>Wrap-up Module 2</b> Discussion	Risto Kontio
10:15–10:30	Break	

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## Module 3

### Step-by-step to your research question

10:30–11:20	<b>PICOT and formulating a structured clinical research question</b> Introduction and practical exercise	Kirsten Häusler
11:20–11:35	<b>Study designs</b> Lecture	Kirsten Häusler
11:35–11:40	<b>Wrap-up Module 3</b> Discussion	Kirsten Häusler

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## Module 4

### Literature—reading between the lines

11:40–12:25	<b>Critical appraisal: Part 1</b> Workshop	Ken Johnson
12:25–12:30	<b>Wrap-up Day 1</b> Discussion	Matthew Allen

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## Module 4 (continues)

### Literature—reading between the lines

08:30–09:00	<b>Critical appraisal: Part 2</b> Workshop	Ken Johnson
09:00–09:15	<b>Wrap-up Module 4</b> Discussion	Ken Johnson

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## Module 5

### How to navigate your research environment

09:15–09:35	<b>Wrap-up Module 5</b> Discussion	Risto Kontio
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## Module 6

### Give your study statistical power

09:35–09:45	<b>How to work with a statistician</b> Discussion	Matthew Allen
09:45–10:15	<b>Wrap-up Module 6</b> Discussion	Matthew Allen
10:15–10:30	Break	

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## Module 7

### Getting ready to publish

10:30–10:45	<b>Avoiding bad practice in publishing</b> Plenary discussion and lecture	Ken Johnson
10:45–11:55	<b>Review a paper section by section</b> Practical exercise	Frankie Leung
11:55–12:10	<b>Wrap-up Module 7</b> Discussion	Risto Kontio

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## Module 8

### Make your research a success

12:10–12:20	<b>What's next for your research education</b> Lecture	Matthew Allen
12:20–12:30	<b>Conclusions and feedback</b> Plenary discussion	Matthew Allen
	End of the course	

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# Event information

## Organization

### AO VET

Oriana Sarman  
Stettbachstrasse 6  
8600 Dübendorf  
Switzerland  
Phone +41 44 802 65 20  
Mobile +41 79 887 34 13  
E-mail [oriana.sarman@aovet.org](mailto:oriana.sarman@aovet.org)

### AO PEER

Denise Hess  
Stettbachstrasse 6  
8600 Dübendorf  
Switzerland  
Phone +41 44 200 24 77  
Mobile +41 79 778 34 42  
E-mail [denise.hess@aofoundation.org](mailto:denise.hess@aofoundation.org)

## Event fee

EUR 250

EUR 225 for ECVS residents

Your registration fee includes:

- Attendance of all lectures/practical sessions
- Teaching material for the course

## Course certificate

The course certificates will be available at the end of the course after passing the assessment in Totara.

## Language

English

## AO funding sources

Unrestricted educational grants from different sources are collected and pooled together centrally by the AO. All events are planned and scheduled by local and regional AO surgeon groups based on local needs assessments. We rely on industrial commercial partners for in-kind support to run simulations and/or skills training if educationally necessary.

# General information



## Evaluation guidelines

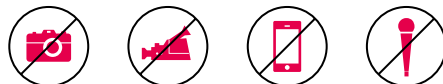
All AO PEER events apply the same evaluation process, which includes online before and after the event evaluation. This helps AO PEER to ensure that we continue to meet your training needs.

## Intellectual property

Event materials, presentations, and case studies are the intellectual property of the event faculty.

All rights are reserved. For more information, please see: [www.aofoundation.org/legal](http://www.aofoundation.org/legal).

**Recording, photographing, or copying lectures, practical exercises, case discussions, or any event materials is strictly forbidden. Participants violating intellectual property will be dismissed.**



The AO Foundation reserves the right to film, photograph, and audio record during its events. Participants must understand that in this context they may appear in these recorded materials. The AO Foundation assumes participants agree that these recorded materials may be used for the AO's marketing and other purposes, and that they may be made available to the public.

# Principles of AO educational events

## 1. Academic independence

Development of all curricula, design of scientific event programs, and selection of faculty are the sole responsibilities of volunteer AO network surgeons.

All education is planned based on needs assessment data, designed and evaluated using concepts and evidence from the most current medical education research, and reflects the expertise of the AO Education Institute ([www.aofoundation.org](http://www.aofoundation.org)).

Industry participation is not allowed during the entire curriculum development and planning process to ensure academic independence and to keep content free from bias.

## 2. Compliance to accreditation and industry codes

All planning, organization, and execution of educational activities follow existing codes for accreditation of high-quality education:

- Accreditation Criteria of the Accreditation Council for Continuing Medical Education, US ([www.accme.org](http://www.accme.org))
- ACCME Standards for Commercial Support: Standards to Ensure Independence in CME Activities ([www.accme.org](http://www.accme.org))
- Criteria for Accreditation of Live Educational Events of the European Accreditation Council for Continuing Medical Education ([www.uems.eu](http://www.uems.eu))

Events that receive direct or indirect unrestricted educational grants or in-kind support from industry also follow the ethical codes of the medical industry, such as:

- Eucomed Guidelines on Interactions with Healthcare Professionals ([www.medtecheurope.org](http://www.medtecheurope.org))
- AdvaMed Code of Ethics on Interactions with Health Care Professionals ([www.advamed.org](http://www.advamed.org))
- Mecomed Guidelines on Interactions with Healthcare Professionals ([www.mecomed.com](http://www.mecomed.com))

## 3. Branding and advertising

No industry logos or advertising (apart from the AO Foundation and its clinical divisions) are permitted in the area where educational activities take place.

Sponsors providing financial or in-kind support are allowed to have a promotional booth or run activities outside the educational area with approval from the event chairperson.

## 4. Use of technologies and products in practical sessions

In case practical sessions are chosen as an educational method to educate skills, the technologies and products used have been approved or reviewed by the AO Technical Commission—a large independent group of volunteer surgeons developing and peer-reviewing new technology on behalf of the AO Foundation.

Any technology and/or products used in the practical sessions of this event have been found suitable to serve the defined educational purposes.

This does not imply any statement about its use and performance in actual clinical scenarios.

More information on the AO Technical Commission can be found on the AO's website: [www.aofoundation.org/tc](http://www.aofoundation.org/tc).

## 5. Personnel

Industry staff members are not permitted to interfere with the educational content or engage in educational activities during the event.

## Notes



# Transforming Surgery– Changing Lives



The AO is a medically-guided, not-for-profit organization, a global network of surgeons, and the world's leading education, innovation, and research organization specializing in the surgical treatment of trauma and musculoskeletal disorders. Today the AO has a global community of over 215,000 health care professionals in the fields of trauma, spine, craniomaxillofacial, veterinary, and reconstructive surgery. Each year the AO offers over 830 educational events globally with over 58,000 participants and supported by 9,000 faculty.



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