

# Swiss Biodesign for MedTech Innovators

## Certificate of Advanced Studies (CAS)



**Building Competence. Crossing Borders.**

In cooperation with

**Balgrist**  
University Hospital

STANFORD BYERS CENTER FOR  
**BIODESIGN**

**KGW**  
KANTONSSPITAL  
WINTERTHUR

# The Program

## Inspired by Stanford Biodesign

Immerse in the Silicon Valley approach to innovate for new medtech, digital health and therapeutics markets. Learn hands-on what clinical need to target, how to market-validate it and lead complex health care projects.

### BACKGROUND

This CAS program is modeled on the pioneering training concept of the Byers Center for Biodesign at Stanford University. Over nearly 20 years, the Biodesign process has proven highly effective in managing product innovation projects and has resulted in an unprecedented number of successful medtech and healthtech startups. The CAS program provides future innovation leaders with a proven process to identify major market opportunities and invent high potential products in the field of digital health/therapeutics and medical technology. Participants will benefit from lectures designed by Stanford and local faculty, coaching by industry experts and entrepreneurs, as well as an exclusive international network.

### LEARNING GOALS AND BENEFITS

Successful graduates of the program:

- know how to effectively plan and lead complex product innovation projects along a proven process;
- can apply design thinking to systematically identify major, unmet needs;
- are proficient in assessing market gaps and potential;
- can rely on tools to develop and test new product concepts;
- know the ingredients needed to create and present a compelling business plan;

- build a top-tier international network in the medical device market; and
- are enabled to successfully drive cultural change within their organization.

### TARGET AUDIENCE

This program is designed for restless intra- and entrepreneurs motivated to significantly improve current standards of care. To be prepared for this endeavor, candidates should have a solid performance track record and approx. three to ten years of healthcare experience in a technical, clinical, or business function. This includes:

- Startup founders and managers
- R&D project managers and software developers
- Product, marketing, business development, and business unit managers
- Physicians (including residents and consultants) and healthcare practitioners
- Life sciences researchers at the PhD and post-doc level
- Managers from medical technology, digital health, laboratory diagnostics, or pharmaceutical companies

We value diverse, international backgrounds and select candidates based on their motivation, experience, personality, and capacity to advance innovative projects internationally.



“An amazing quality of speakers from beginning to end and hands-on experience to run through the whole process of innovation.”

Jonathan Douissard, Staff Surgeon, University Hospital of Geneva, Swiss Biodesign Alumni

# Program Structure and Content

## A total of 12 intense, hands-on days over four months

The program starts with real-life needs analysis at the point of care and finishes with a patentable product concept and a market-validated business plan pitch.

### MODULE OVERVIEW

<b>MODULE 1</b> 6 ECTS credits	<b>MODULE 2</b> 6 ECTS credits
<b>Clinical Needs Analysis</b>	<b>Concept Development</b>
<ul style="list-style-type: none"><li>– Biodesign Process</li><li>– Strategic Focus</li><li>– Disease Fundamentals</li><li>– Clinical Immersion</li><li>– Needs Exploration</li><li>– Needs Statement Development</li><li>– Market Research Techniques</li><li>– Stakeholder Analysis</li><li>– Intellectual Property Search</li><li>– Needs Selection Process</li><li>– Design Thinking</li></ul>	<ul style="list-style-type: none"><li>– Concept Development and Prototyping</li><li>– Business Plan Coaching</li><li>– Regulatory Pathways Europe</li><li>– Clinical Study Requirements</li><li>– European Reimbursement Systems</li><li>– Health Economics</li><li>– Market Access</li><li>– Startup Funding and Team Creation</li><li>– Industry Insider Talks</li><li>– Final Presentation</li><li>– Graduation Dinner</li></ul>

### METHODOLOGY

The Swiss Biodesign process centers around a real innovation project starting on the first day of the course. In addition to expert lectures and case discussion, the following didactic methods are applied:

- Biodesign pre-readings
- Clinical observation in clinics and operating rooms
- Interviews with patients, physicians, and nurses
- Extensive coaching by industry experts and entrepreneurs
- Frequent project presentations and feedback

Coaching sessions and insider talks will provide ample opportunity for direct interaction with seasoned medical technology innovators, startups, and investors.

### CLINICAL IMMERSION

Over several days of clinical immersion at partner hospitals, you will join surgeries, shadow patients/physicians/nurses, learn to spot unfulfilled needs and conduct effective interviews. Primary access to physicians and clinical departments to our clinical partner will be organized. Individual clinical immersions can be organized by those participants, who have a certain medical/idea space in mind.



Clinical Immersion 2019

### **PROJECT TEAMS**

On the first day of the course, interdisciplinary, startup-like project teams with three to four participants will be formed. The team mission is to explore 40 customer needs in a new medical field that ought to be met and gradually target one of them through a patentable product concept and market-validated business plan.

### **SCHOLARSHIPS**

Together with Swiss Biodesign's Partner Hospitals, two fellowship awards will be granted to young physicians and researchers with demonstrated academic excellence and interest to innovate medical practice/technology. Please contact the Program Management for more information.

“

My personal highlight of the past five years. The course provides the missing piece on how to come to a real need-based business case and provides everything to go one step further.”

Christian Frei, Senior R&D Project Leader, Sonova, Stäfa, Swiss Biodesign Alumni

# International Faculty

## Experience from leading startups, corporations, and hospitals



**Tom Krummel**  
Co-Director of Stanford's  
Biodesign Program

### ABOUT

Prof. Krummel is the Co-Director of Stanford's Biodesign Program and guest lecturer in the Swiss Biodesign Bootcamp. He has been a pioneer in the application of information technology to simulation-based surgical training and surgical robotics and has received over USD 3 million in research funding in the course of his career. For more than 15 years, he has partnered with Dr. Paul Yock to direct the Biodesign Program at Stanford.

### INTERDISCIPLINARY INSTRUCTORS

The following persons have been instructors in past program courses (participation may vary upon availability):

- **Michel Adamina**, MD, Prof., Chief of Colorectal Surgery, Cantonal Hospital Winterthur
- **Mathias Bonmarin**, PhD, Prof., Head of Sensors and Measurement Systems Group, ZHAW
- **Philippe Etter**, MSc, Senior Partner, Medidée
- **Rainer Fuchs**, PhD, Prof., Head of Product Management, ZHAW
- **Ulrich Geilinger**, PhD, Health Care Investor, HBM Partners
- **Laurent Grandidier**, MBA, Serial-Entrepreneur and Startup Advisor
- **Patrick Griss**, PhD, Executive Partner, Zühlke Ventures
- **Christian Muehlendyck**, MD, MBA, Director Health Economics & Market Access, Johnson & Johnson
- **Markus Ott**, MSc, Head Global Market Access & Health Policy, Roche Diagnostics
- **Jess Snedeker**, Professor and Head of Orthopedic Biomechanics, ETH Zurich
- **Philipp Tholen**, MSc, VP Product & Technology, AvaWomen
- **Orestis Vardoulis**, PhD, Stanford School of Medicine and Startup Founder
- **Heiko Visarius**, PhD, MedTech Expert, Business Coach, Board Member, VISARTIS Healthcare GmbH
- **Jens Haarmann**, PhD, Senior Lecturer, Product Management (Program Lead), ZHAW



“I am looking forward to sharing my knowledge and experiences from the Innovation Fellowship and to contributing to the vibrant medical technology innovation community in Switzerland.”

Orestis Vardoulis is a Stanford Biodesign alumnus and Swiss Biodesign guest lecturer

# Contact

## Contact us for a personal counseling session



**Jens Haarmann, PhD**  
Healthcare Marketing Lecturer  
and former MedTech Manager

### HEAD OF PROGRAM

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### ADMINISTRATION AND ADMISSIONS

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## Institute of Marketing Management

The Institute of Marketing Management (IMM) at the ZHAW School of Management and Law aims to achieve synergy by combining scientific knowledge and practical experience.

The activities of the Institute encompass the whole spectrum of modern marketing and include research, consulting services, as well as degree programs and continuing education. The Institute collaborates at a national and international level with large corporations, SMEs, other institutions, and partner universities. A well-established network of specialists provides comprehensive expertise, which is continually developed further and integrated into IMM activities. In addition to its “CAS in Swiss Biodesign for MedTech Innovators”, the IMM offers a number of other continuing education programs, such as the “CAS in Health Care Marketing”.

>>> [www.zhaw.ch/imm/en](http://www.zhaw.ch/imm/en)

# Organizational Details

## Application-based admission

### ADMISSION REQUIREMENTS

Permitted are graduates of universities of applied sciences or universities with at least three years of professional experience in technical, medical or business-related fields and sufficient knowledge of English (at least level B2). Professionals without a university degree can be admitted provided they have at least six years of the above-mentioned professional experience and corresponding further education certificates (higher technical college or higher technical examination with federal certificate/diploma). Also expected is a letter of motivation in English and sufficient knowledge of English (at least Level B2). In exceptional cases, other applicants may be admitted if they can demonstrate their eligibility to participate by other evidence. The Head of Program decides on final admission.

### APPLICATION

To apply for the program and be invited for an interview, visit our website or email us:

>>> [www.zhaw.ch/imm/casswissbiodesign](http://www.zhaw.ch/imm/casswissbiodesign)

>>> [biodesign.sml@zhaw.ch](mailto:biodesign.sml@zhaw.ch)

### DATES AND SCHEDULE

The program dates are available online. For more details on the planned dates, see the document "Preliminary Schedule".

>>> [www.zhaw.ch/imm/casswissbiodesign](http://www.zhaw.ch/imm/casswissbiodesign)

### WORKLOAD

Participants who successfully complete the program are awarded 12 ECTS (European Credit Transfer System) credits. Per credit, a workload of 25 to 30 hours is expected. For the entire program, this corresponds to 300 to 360 hours.

### PERFORMANCE ASSESSMENTS

In Module 1, the performance assessment is an online test on the Biodesign pre-readings and a group presentation on needs selection and market analysis. In Module 2, a market-validated product concept and business plan must be presented to a jury.

### LOCATION

This is a part-time program at ZHAW School of Management and Law campus in Winterthur and Zurich and in partner hospitals. Classes take place from 8.30 am to 5.30 pm followed by extensive evening group work.

>>> [www.zhaw.ch/en/sml/about-us/infrastructure](http://www.zhaw.ch/en/sml/about-us/infrastructure)

### TIME FRAME

12 days in the classroom, clinic and Saturdays digitally over a period of four months.

### LANGUAGE OF INSTRUCTION

Classes and course materials are exclusively in English.

### QUALIFICATION

After successful completion of the program, participants receive a "Certificate of Advanced Studies ZHAW in Swiss Biodesign for MedTech Innovators" worth 12 ECTS credits. To qualify, participants must attend a minimum of 80 percent of all classroom sessions and complete all three performance assessments successfully.

### TUITION FEES

The tuition fee of CHF 9,800 includes clinical immersion, extensive group coaching, study materials, exam fees, kick-off seminar accommodation, and related social events.

### GENERAL CONDITIONS OF PARTICIPATION

For the general conditions of participation in continuing education programs at the ZHAW School of Management and Law. >>> [www.zhaw.ch/sml/atb-wb-en](http://www.zhaw.ch/sml/atb-wb-en)

Zurich University  
of Applied Sciences

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