



^b
**UNIVERSITÄT
BERN**

Science for public health

50 years of the Institute of Social and Preventive Medicine







Foreword

Dear reader



Theodor Abelin
Director 1971–2000

Fifty years ago, social and preventive medicine was new to Switzerland. Research in the field was varied and evolving rapidly, and the changes and new challenges have never abated. That dynamic may explain why four of the original five university institutes for social and preventive medicine that were founded in Switzerland in the 1960s and 1970s changed their names over the years to include terms such as public health, epidemiology, or *santé globale*. Yet the University of Bern's Institute of Social and Preventive Medicine has not altered the name that encompasses practitioners in varied disciplines, who collaborate in a single institute and can have a great impact on health, medicine, and health care systems, and directly benefit the lives of individuals as well as address health at the population level. More than ever, ISPM exemplifies its founding philosophy and expansive scope as it meets the needs of society in the twenty-first century. This is worth celebrating.

Tracing the development of ISPM Bern over its first 50 years under the leadership of its three directors reveals a background and connections that might otherwise not be visible. This report explains how the Institute was conceived and how it has evolved in the face of global developments in health, societies, and technology, and in human needs. In its first half-century, the Institute has engaged multiple health crises, among them the Chernobyl reactor disaster in 1986 and, in the 1990s, the HIV/AIDS epidemic in Switzerland. Soon thereafter, supported by the US National Institutes of Health the Institute began work on HIV and tuberculosis in Africa,



Matthias Egger
Director 2002–2017

Latin America, and Asia. During the last decade, ISPM collaborated with WHO in West Africa on the evaluation of the first vaccine against Ebola, and since the beginning of last year researchers across the Institute have directed broad epidemiological expertise to the COVID-19 pandemic. At the same time, ISPM has extended its research to ongoing epidemics of noncommunicable disorders, and evaluating the impact of climate change upon health.



Oscar H. Franco
Director since 2018

Fifty years ago, few outside the Institute were familiar with social and preventive medicine and its potential and methods. University teaching in the new field had to be initiated and taught in the medical faculty as well as several other programs. From that beginning to today, instruction has required continual updating, which is reflected by an instructional milestone, the textbook *Public Health kompakt* (de Gruyter). First published in 2012 under the auspices of ISPM, the book is now in its fourth edition. And change and growth could not remain entirely within the Institute. For many years, ISPM offered methodological guidance for clinical researchers. Then, in 2007, with the support of the Swiss National Science Foundation the Clinical Trials Unit was established as an independent, collaborating neighbor of ISPM.

In this report, we discuss these developments and others in more detail, and hope to bring the 50 years of ISPM to a wide circle of readers. We celebrate five decades of efforts by hundreds of scientists committed to caring for people and preventing illness, and we are ready to face new challenges that surely await us.

Theodor Abelin, Matthias Egger, Oscar H. Franco

Table of contents

8 Greeting

Part 1

Mission health research

13 The path to a global health perspective
24 "The professor just told me not to ask such
stupid questions"
30 Milestones

Part 2

Research and teaching for a healthy world

40 Giving knowledge and taking knowledge
46 Globally connected
49 ISPM's partner institutes in Bern
52 Tracking cancer in children
60 Health is more than not being sick
67 The science of searching the literature
73 Detective work for the benefit of patients

Part 3

New ways for new challenges

82 The world is not enough
88 "We want to create a space where scientific
innovation becomes possible"

100 Closing words

Greeting

**50 years of the University of Bern's Institute
of Social and Preventive Medicine**



Claudio Bassetti
Dean of the Medical Faculty
University of Bern

It is my pleasure and honor as Dean of the Faculty of Medicine to write a short preface to this Festschrift.

Public health has a long tradition in Switzerland. In 1761, the Lausanne physician Auguste Tissot published "Avis au peuple sur sa santé," which was translated into 17 languages. In 1899, the Swiss Society for School Health Care was founded, and in 1920 it became the Swiss Society for Health Care and later the Swiss Society for Preventive Medicine. The introduction of the subject into the compulsory examination material in the state examination for physicians was mandated by the Federal Council in 1964, and implemented by the medical faculties in 1968.

At the end of December 1970, the Bernese Government Council established ISPM and chose Theodor Abelin as full professor and director of the Institute. (The first chair for the subject had been established at the University of Zurich in 1963.) The Institute's initial Swiss National Science Foundation projects were aimed at "Disabilities and Needs of the Elderly in Switzerland" and "Morbidity in Medical Practice."

In 2002, Matthias Egger became ISPM's second director. The Swiss Childhood Cancer Registry was taken over and expanded, and a multicohort study of HIV/AIDS patients in Southern African countries received NIH support. In 2007, the Swiss National Science Foundation selected ISPM's submission to establish a Clinical Trials Unit. And in 2017, Prof. Egger

was elected President of the Research Council of the Swiss National Science Foundation and stepped down as ISPM's director.

When Oscar H. Franco became the new director of ISPM in June 2018, international collaboration and research was extended to cardiometabolic diseases and the environment's role in disease. ISPM researchers used computer models to analyze the transmission behavior of the coronavirus early in 2020, and staff have been heavily involved nationally and internationally in the pandemic response.

Among the varied contributors to the health of the population, public health plays a central role. ISPM in Bern has met this task with excellence during its first 50 years. Today, the Institute enjoys an international reputation and its researchers are among the most cited scientists in the world. For the medical faculty's Strategy 2030, social and preventive medicine have been selected as thematic priorities.

The Faculty of Medicine is proud of ISPM! My respect and thanks go to all the staff of the Institute and its three directors, who have inspired the Institute with their commitment, competence, courage, and curiosity over five decades of teaching and research.

Congratulations on the anniversary!

Prof. Claudio Lino Alberto Bassetti

Bern, August 31, 2021

ISPM in numbers
2020

158

employees

143

researchers

15

employees working
in administration and IT

15

research groups

3

research platforms

Finances
2020

ca. 17 m

CHF overall budget, of which:

3.22 m

CHF were from the Swiss National
Science Foundation

29

nationalities

39

years average age
of all employees

4.88 m

CHF from other competitive research
funding sources (EU, NIH, etc.)

As of: 18.08.2021

Part 1
Mission health research



Pictures pages 12–23: University of Bern archive

Antismoking poster from 1980s: Northern Ireland

History

ISPM 1971–2021

The path to a global health perspective

Before the Institute of Social and Preventive Medicine was founded at the University of Bern in 1971, epidemiology did not have a high profile in Switzerland¹. At that time, Swiss physicians crossed the pond to the USA to further their training in social and preventive medicine. Among those who did so was the young physician Theodor Abelin.

In 1964 the impetus for founding ISPM came from the Federal Council with a revision of the federal regulations for examination of medical doctors. “During the examination, the candidate has to answer questions from the field of social and preventive medicine,” the new regulations said². The requirements covered occupational and insurance medicine, epidemiology, vaccinations, general environmental influences, and health care. Medical faculties also had to teach the subject, but the students in Bern were still taught by external lecturers in the years after the decision. The Government Council then approved the creation of ISPM at the University of Bern. Theodor Abelin, returned from training and research in public health in the USA, was appointed as the first director of the ISPM in the medical faculty at the University of Bern on December 29, 1970. The following summer semester ISPM began operations in provisional premises on Waldheimstrasse.

1 M. Schär. Vierteljahresschrift der NGZH, 112/3 (1967) S. 139–142.

2 Reglement für die eidgenössischen Medizinalprüfungen (22.12.1964).



Switzerland

“The beginning was not easy,” recalls Abelin. “We were still a stranger to the medical faculty at that time.” Medicine had made spectacular progress during and after World War II. With the advent of antibiotics and new vaccines, infectious diseases were increasingly brought under control. The first heart transplant in 1967 fascinated the public as much as the first moon landing did two years later. The possibilities seemed unlimited. The downside was the steadily rising cost of health care and the growing burden of chronic, noncommunicable diseases.

Slow build-up

The young epidemiologist also recognized these tensions. After his medical studies in Bern and two years of research at the Institute for Hygiene and Occupational Physiology at the ETH Zurich, Abelin went to Boston in 1962 to earn a master’s degree at Harvard University’s renowned School of Public Health, and he subsequently worked as a researcher and lecturer in the Department of Epidemiology and then the Department of Behavioral Sciences. After his return to Switzerland, Abelin emphasized the fundamental importance of such institutional contributors to the public health system in a strategy paper he submitted to the medical school leadership, in the summer of 1970, in anticipation of his appointment in Bern. “Social and preventive medicine addresses problems that, while perhaps appearing less sensational, directly affect larger segments of the population and are of the greatest social and economic importance,” he wrote. He outlined in detail the tasks and structures of such an institute: teaching, research, and tasks the institute should fulfill as a central cantonal office for social and preventive medicine. With the medical faculty he agreed to gradually building, over five years, an “interdisciplinary staff that should include physicians (with special training in social and preventive medicine) as well as a biostatistician, a sociologist, and a social worker.”

When Theodor Abelin began work in the summer semester of 1971, he had limited resources at his disposal. Social and preventive medicine existed in the shadow of the spectacular success of therapeutic medicine during the postwar decades. Nevertheless, the first ISPM director was confident of his mission.

However, the build-up was slow. In spite of the national realization that public health research in Switzerland needed to catch up, in 1971 Abelin began with only a resident and a secretary. Five years later, the crucial biostatistics and social science positions were still not filled.

A broad mandate

Despite limited resources and understaffing, the Waldheimstrasse team immediately set about tackling the many tasks at hand³, which included

- A vaccination campaign against rubella in girls before they left school, in collaboration with the cantonal and school medical services, and accompanying research
- Conceiving and planning new, innovative teaching modules for medical students
- Research projects on topics promising relevant results in the short term: over-nutrition in the first year of life, disabilities and needs of the elderly, health education projects in schools and the workplace, a study on environment and heredity in the causation of schizophrenia which had already begun in the USA

“When I chose topics, I always based them on how useful something is for prevention and society,” says Abelin. The focus was on the health care of the population rather than the science of medicine. “In the US,” he recalls, “they said, ‘The community is my patient’. My patient was the canton of Bern and also Switzerland.”

Around the world, public health was undergoing a transformation. Advocates who criticized the one-sided focus on biologicistic and curative medicine strived instead for a comprehensive understanding of health that also included people’s social and economic living

³ Five-year report ISPM 1971–1975.



Switzerland

conditions⁴. “A rethinking is taking place in health care,” wrote Abelin in an editorial in the Swiss journal *Sozial- und Präventivmedizin*⁵. “The realization is gaining ground that health is more than cured disease and symptoms kept under control. Healthy living takes place in the everyday lives of individuals, families, workplaces, and communities, and has little to do with individual physician interventions.” Abelin was president, from 1987 to 1992, of that journal’s publisher, which was the forerunner of today’s Swiss Society for Public Health. The journal, which Abelin edited from 1972 to 1980, became the *International Journal of Public Health*.

Focus on tobacco use

Theodor Abelin’s research in Boston already engaged healthy living in everyday life. He focused on the use of tobacco, which remained a topic of interest for him in all its facets at ISPM. Research on the smoking habits of adolescents and physicians, the effect of cessation campaigns, the use of nicotine patches, and epidemiological questions about the causes of addictive behavior were part of his program. Abelin served on national and international committees, but also repeatedly campaigned in the press and on television for more effective protection from tobacco and against tobacco advertising in public places.

ISPM observed its 20th anniversary on June 24, 1992 with an official celebration, which was followed by international colloquia and an open day. The anniversary allowed ISPM to present itself as an indispensable part of the Bernese health care system, and to counter ongoing questioning of its *raison d’être*. Even the dean of the medical faculty had asked Abelin, “Does German-speaking Switzerland really need more than one institute for social and preventive medicine?” Thus Abelin asked the director of the Federal Office of Public Health,

4 B. Ruckstuhl & E. Ryter, 2017. Von der Seuchenpolizei zu Public Health. Öffentliche Gesundheit in der Schweiz seit 1750, Chronos-Verlag, Zürich.

5 *Soz Präventivmed* 32, 277–279 (1987).



Northern Ireland

Thomas Zeltner, to contribute a greeting to the ceremony. In this problematic situation, Abelin foresaw the value of a "serious reference to the diverse tasks of our institutes from outside the narrow, university perspective."

Environmental research after Chernobyl

After two decades, ISPM had grown to 40 persons, though less than half had a permanent position funded by the university⁶. The majority of the positions, especially those directly associated with research projects, still depended on third-party, external funding from services such as prevention campaigns and interventions. In addition to its directorate and general services such as the library, ISPM was organized by Medical Epidemiology and Prevention, headed by Abelin himself; Medical Statistics, led by Christoph Minder; and the Department of Health Research, led by Horst Noack. The last was largely comprised of a large-scale program for health promotion in the working environment, which was led by Noack, who also was the Deputy Director of ISPM.

In retrospect, 1992 was a year of change. Research priorities were redefined, partly due to personnel changes and partly in response to the needs of society. The entire field of environmental epidemiology was expanded. After the Chernobyl reactor disaster in 1986, a project was developed in close coordination with the World Health Organization on the health consequences of radioactive contamination in children in Belarus. In addition, a large-scale commissioned project on the effects of electromagnetic radiation at the Schwarzenburg shortwave transmitter was launched. The problems of AIDS and addiction came increasingly to the fore, and various nationally and internationally oriented prevention and intervention projects gained in importance.

⁶ ISPM press release, June 24, 1992



Switzerland

Equally important was ISPM's continuing involvement in education and training. In 1992, the three institutes of social and preventive medicine of the universities of Bern, Basel, and Zurich launched an interuniversity master's program in public health in German-speaking Switzerland⁷. The course was interdisciplinary in nature and also open to nonmedical specialists. The course exists today, and many of its graduates have gone on to occupy key positions in the public health sector.

New millennium, new dynamics

In 2000, Theodor Abelin took emeritus status after almost thirty years as director. Following a short interim, Matthias Egger returned to Switzerland from the University of Bristol, where he held a professorship in clinical epidemiology, to become the second director of ISPM in 2002. Egger already knew ISPM from his early research years. As a young physician, he had trained in epidemiology and biostatistics at the London School of Hygiene and Tropical Medicine. After receiving a multiyear career fellowship from the Swiss National Science Foundation in 1993, he joined ISPM's Medical Epidemiology and Prevention Group. Egger conducted research as part of the famous Swiss HIV Cohort Study founded in Zurich in 1988, which soon became one of the most important longitudinal studies in Switzerland. Its findings were used to inform better treatments for thousands of patients. Above all, Egger was interested in systematic literature reviews, and especially meta-analyses in which the results of many studies are summarized and statistically evaluated. That long-term commitment to systematic reviews and meta-analysis is reflected by the eponymous Egger test, which is a method for detecting bias in meta-analyses that has become much used and cited in medical statistics.

When asked about the importance of his work, Matthias Egger said, "With public health and epidemiology you often achieve much more for people's



Brasil

health than if you only treat the diseases of individuals." Egger had been particularly impressed by his stay in a mission hospital in Ghana, where he spent his elective year as a University of Bern medical student. In Ghana he saw many diseases that could have been avoided with preventive measures. An improved water supply, more education, and a better standard of living in general would have done much more. "Even though we were there as doctors, we were actually fighting poverty, not the infectious diseases themselves."

Meta-analysis breakthrough

With the change of director, ISPM undertook a new focus on epidemiological research into various infectious diseases such as HIV and tuberculosis, the Zika virus, and sexually transmitted diseases such as syphilis. The collection and statistical analysis of ever-increasing amounts of data have produced more reliable results on the effects of therapies and medications, and allowed more rapid diagnoses. New models and simulations contributed to a better understanding of infection dynamics. The results fed back into faster and more targeted treatment of individual patients, which in turn affected the spread of disease. "In this way, we bridge the gap between clinical medicine and prevention," says epidemiologist and ISPM Deputy Director Marcel Zwahlen. "If we diagnose an infectious disease more quickly and treat the individual sufferers better, the infectious disease also spreads less quickly." One such example of infectious disease intervention is the International epidemiological Databases for the Evaluation of AIDS (IeDEA), launched in 2005 by the US National Institutes of Health (NIH). IeDEA is a global network that collects data from millions of patients with HIV infection requiring treatment. From the very beginning, ISPM was involved in setting up the database and in evaluations. In 2006, the research group led by Matthias Egger was awarded an NIH contract and took



Germany

over the management of leDEA's Southern Africa region. Since then, that funding has been renewed every five years, most recently in 2021.

A second pillar of ISPM became methodological research. Tremendous progress in computer-assisted data processing contributed to this, along with procedures for evaluating clinical studies such as increasingly sophisticated meta-analyses that are constantly being developed further as ISPM pioneers evidence-based medicine in Switzerland.

Evidence-based medicine prevails

According to Marcel Zwahlen, good evidence-based medicine means two things: summarizing the results from multiple studies correctly and without misrepresentation, and clinical trials are well planned with the right questions asked at the outset. It was precisely in the area of clinical studies, though, that there was a major shortcoming in Switzerland, measured against international standards, around the turn of the millennium. Clinical studies were of course pursued, at smaller, mostly subject-specific study centers at university and cantonal hospitals. However, they often took place within loose, poorly coordinated structures. The result was clinical studies with too few patients, parallel studies on similar if not the same questions, inconsistent procedural rules, and limited training and continuing education for study personnel. The poor quality of such studies was recognized in national research policy. Therefore, in 2007 the Swiss National Science Foundation invited proposals for the creation of specialized units called Clinical Trials Units (CTUs) to plan and coordinate such studies. Three proposals were awarded contracts, one of which was from ISPM. Subsequently, ISPM researchers Peter Jüni and Matthias Egger established the CTU Bern in close collaboration with Inselspital. Since 2013, CTU Bern has been affiliated with the Department of Biomedical Research of the

ISPM pioneered evidence-based medicine in Switzerland. Measured against international standards at the turn of the millennium, Swiss clinical trials needed to catch up. Working with partners at Inselspital, ISPM submitted a successful proposal to the SNSF to establish a Clinical Trials Unit in Bern.

faculty of medicine as an independent unit, but continues to share space and administrative support with ISPM.

“It has always been important to me that we make important contributions over the years in the areas in which we are active, which receive national and international attention and which are also methodologically at the highest level of quality,” says Egger. This compels ISPM to be highly networked. It maintains numerous national and international collaborations and epidemiological infrastructure like that of the Swiss Childhood Cancer Registry, which Claudia Kuehni’s research group has managed and developed since 2004. Other projects are embedded in worldwide programs and projects in collaboration with the EU or the World Health Organization. The Institute is also closely involved in research with the clinical departments of Inselspital and in teaching with the medical faculty. Thus, in close cooperation with the Institute for Medical Teaching as well as with the Graduate School for Health Sciences the most up-to-date science is brought to the education of the next generation of public health researchers and practitioners.

On the occasion in 2016 of ISPM’s entering the Medicus Mundi Switzerland association, a group of health NGOs dedicated to sharing knowledge to promote global health, ISPM representative Luciano Ruggia presented and summarized ISPM in a short article. ISPM’s growth was impressive: its staff had grown to 120, including 70 researchers supported by a research library and administrative staff. In addition, 15 master’s and 49 doctoral students were distributed among 14 research groups.

Also in 2016, Matthias Egger was elected president of the National Research Council of the Swiss National Science Foundation (and reelected to a second four-year term in 2020). He stepped down as director of ISPM,

ANCHE TU?



Dipartimento opere sociali



Switzerland



Switzerland

but remained at ISPM to lead the HIV, Hepatitis and Tuberculosis research group. The university mounted an international search for a successor to ISPM's first two, long-time directors. Oscar H. Franco, a prominent epidemiologist from Colombia who was then leading two research groups at Erasmus University Rotterdam was chosen to be the new ISPM director.

Corona, climate and other new challenges

At the advent of ISPM's next 50 years, COVID-19 presents much more than just a medical problem. The varied public health response to the pandemic has encompassed the epidemiology of SARS-CoV-2 and prevention of its transmission, vaccine distribution and willingness, mental as well as physical health, rapid and accurate communication of ongoing advances in the science, the social and economic context and impact of disease, and more. Experts have warned of public health challenges such as these for a long time, and there will be a next pandemic. The problems of communicable disease remain with us, and epidemiology and public health face new challenges that include chronic diseases in an aging population and the global consequences of climate change. History emphasizes the need for the essential interdisciplinary expertise ISPM can draw upon for the benefit of all. /

Theodor Abelin

Memories

“The professor just told me not to ask such stupid questions”

Founding director Theodor Abelin recounts his journey to becoming a physician of social and preventive medicine at a time when the specialty was still an exotic speciality.

Dr. Abelin, you were already practicing social and preventive medicine at a time when this specialty was still an exotic feature in Swiss medicine. What motivated you?

My father was a family doctor and gynecologist in the Länggass district here in Bern, and as a little boy I was always allowed to go along when he made his house calls in the district on Sundays. Although I had to wait outside when he visited his patients, I was given insight into the care provided by a family doctor, which made a deep impression on me.

Then why did you not become a family doctor?

I went on to study medicine, but during my studies I became interested in the bigger picture. I remember the moment when, in pathology class, we were examining the body of a patient who had died of lung cancer. I asked the professor, “Could this be related to smoking?” The professor—he was the director of the Institute of Pathology—just told me not to ask such stupid questions. That was in 1957, when already there

were quite a few studies suggesting a link between smoking and lung cancer. But the knowledge was not yet widespread.

It's still a long way from your impertinent question to social and preventive medicine.

I was actually thinking of working as a medical doctor at the WHO, and I was advised to look into the field of occupational medicine. So after my studies in Bern and Geneva I went to the Institute of Hygiene and Occupational Physiology at ETH Zürich as a research associate. It was the only institute in Switzerland doing research in this field.

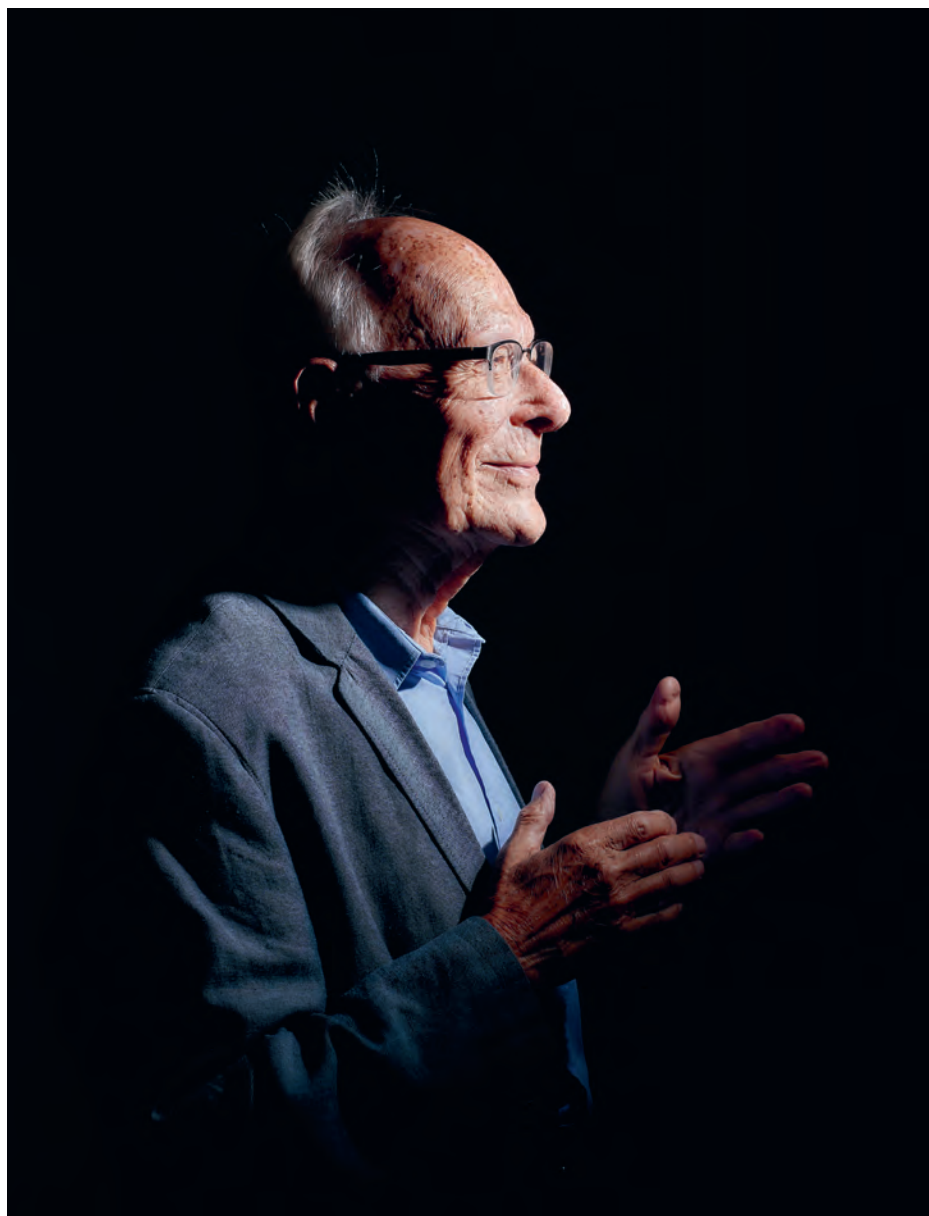
What did you do in Zürich?

I was commissioned to do a literature study in which I had to evaluate all the studies currently available on the link between smoking and lung cancer. That was in 1961, when I realized there was no doubt about a causal link. More interesting for me, however, was an investigation of the Tonhalle Orchestra, which I pursued with a psychologist colleague.

What was that about?

Members of the Tonhalle Orchestra had complained about health problems. With testing we looked at the musicians' degree of exhaustion before and after a performance. However, in structured interviews that we conducted with the hundred or so orchestra members it became apparent that the string players in particular suffered from mental stress. This resulted in a publication in 1962, in which we reported that numerous musicians suffered from the authoritarian regime that prevailed under certain conductors. Subsequently, a scandal took place in Zurich because the orchestra spontaneously went on strike at the last moment before it was to perform under a famous conductor who was particularly authoritarian.

“Numerous musicians suffered from the authoritarian regime that prevailed under certain conductors.”



Theodor Abelin



“In Boston alone, ten institutes were researching the field from every possible angle.”

You went to the USA in 1962. What did you experience there?

I completed the regular, one-year master’s program in public health at the Harvard School of Public Health in Boston. There alone, ten institutes were researching the field from every possible angle, whereas in continental Europe there were only a few relevant professorships. I stayed at Harvard after graduation and did research in the Department of Epidemiology, where I was mainly concerned with the dangers of smoking, though also with the causes of psychiatric illness. At that time, we were already investigating how to discourage young people from smoking and how to persuade their teachers to quit.

When you became director of the newly founded Institute of Social and Preventive Medicine in Bern in 1971 you first had to set up the Institute . . .

Many of my acquaintances in the U.S. did not understand my returning to the Old World, where my field played hardly any role. I had to think carefully about how I wanted to set up the Institute. Since we had few resources, I could not simply turn the Institute of Social and Preventive Medicine into a small copy of Harvard. In choosing topics, I was guided by how useful something would be for society. At that moment, the saying “The community is my patient” applied to me. My patient was the population of the canton of Bern and of Switzerland.

You were involved in research, but also in training future physicians in epidemiology and public health. Where did you place the emphasis?

It was important to me that physicians always come into contact with the social aspects of illness and health during their training. I had experienced this myself. When I was a student, there was an internship in which all students had to make home visits to sick people who were not insured; health insurance was still voluntary at that time. So we automatically came

“We had to make home visits to people who were uninsured. So we automatically came into contact with people who were disadvantaged.”

into contact with people who were disadvantaged and learned about their problems. That made a big impression on me.

Did you reintroduce such an internship?

After a reorganization of the Medical Polyclinic, this was no longer possible. However, in consultation with the clinic directors I organized an exercise in which medical students conducted a sociomedical conversation with a patient and wrote a report on it, which we then discussed with the students and the social worker responsible for the clinic. This was well received by both the students and the social workers. In this way, an entire generation of medical students got to know another side of the health care system. /

1970, December 29. The Bernese Government Council decides to found ISPM and elects Theodor Abelin as full professor and director of the Institute.

1971. Theodor Abelin begins work in four offices at Waldheimstrasse 18 with a senior physician and an institute secretary at the beginning of the summer semester.

1972. Acquisition of the editorship of the *Journal of Preventive Medicine*, since 1974 *Social and Preventive Medicine*, the central organ of the Swiss Society for Social and Preventive Medicine.

1973. First projects funded by the Swiss National Science Foundation on Disabilities and Needs of the Elderly in Switzerland, Morbidity in Medical Practice.

1976. Collaboration with the Swiss Cancer League and the Bernese Nonsmoking Working Group for the development of smoking cessation courses.

1978. Relocation to the 5th floor of the newly built Children's University Hospital Bern.

1970

Milestones

1981_ The institute has **21 employees**, around half of whom are at least partially paid through third-party money.

1982_ Relocation to Finkenhubelweg 11.

1985_ The Swiss Medical Association FMH recognizes the specialist title for Prevention and Public Health (since July 2020 FMH Prevention and Public Health).

1986_ Start of the Hertz-As project, a large-scale study funded by SNSF on Health Promotion in Companies — Prevention of Cardiovascular Diseases.

1986_ WHO's Ottawa Charter for Health Promotion calls for a comprehensive understanding of health that also includes people's economic and social situation.

1987_ WHO appoints ISPM as Collaborating Centre for Research in Health Promotion, a WHO-sponsored network of international research institutes.

1987

1991_ Founding of the Health Research Department (AGF) under the leadership of ISPM Deputy Director Horst Noack by Government Council resolution. The central pillar of the AGF is the Hätz-As health promotion project.

1992_ Start of the inter-university training program for the Master of Public Health (Swiss-German MPH), which ISPM developed together with the partner institutes of the universities of Zurich and Basel.

1994_ Operation of the Chernobyl Coordination and Information Office on behalf of the FOPH, a platform for research networking on the effects of the Chernobyl reactor accident in which ISPM has been active since 1991.

1995_ Thomas Abel becomes the new head of the AGF and realigns its research. His focus is on the field of medical sociology.

1995_ ISPM employs 39 staff, 19 of whom are financed by third-party funds and service contracts.

2000_ Retirement of Theodor Abelin. Thomas Abel becomes managing director ad interim.

1991

2002_ Matthias Egger becomes the director of ISPM.

2004_ Takeover and expansion of the Swiss Childhood Cancer Registry by the Pediatric Epidemiology research group.

2006_ The leDEA-SA project, a multicohort study of HIV patients in Southern African countries, receives support from the US National Institutes of Health.

2007_ The Swiss National Science Foundation selects the submission from ISPM for the establishment of a Clinical Trials Unit (CTU Bern) at the University and the University Hospital Bern.

2010_ The Swiss Epidemiology Winter School is held for the first time in Wengen. The topic is Systematic Reviews in the Health Sciences: Meta-Analysis in Context, with 31 students from 7 countries attending the intensive course.

2010

- 2012_** Publication of the first edition of the textbook Public Health kompakt. The book is now in its fourth edition and available for online reading.
- 2012_** ISPM opens a Facebook and a Twitter channel to communicate news, publications, and event information to the public.
- 2013_** Peter Jüni becomes the managing director.
- 2014_** Peter Jüni becomes the director of the Institute of Primary Health Care (BIHAM), Matthias Egger returns as director.
- 2016_** ISPM has over **120 employees** and 14 research groups.
- 2017_** Matthias Egger resigns as the director of ISPM to become president of the Research Council of the Swiss National Science Foundation.

2012

2018_ Relocation from Finkenhübelweg 11 to Mittelstrasse 43.

2018_ Oscar H. Franco becomes the new director of ISPM.

2019_ Tenth anniversary of the Swiss Epidemiology Winter School in Wengen with eight courses over six days.

2020_ Coronavirus outbreak in China. Based on initial information, ISPM researchers use computer models to analyze the transmission behavior of the virus at an early stage.

2021_ As of August, ISPM has **158 employees** divided among 15 research groups, two cross-sectional programs, and administration.

2021

“What I learned
at ISPM accompanies
me throughout my
career.”

Julia Bohlius



Julia Bohlius



Mazvita Muchengeti



Olivia Keiser

Julia Bohlius

Head of Departement Education and Training, Swiss TPH, Basel (at ISPM from 2007 until 2020)

"I remember ISPM as a vibrant, stimulating place, producing high-quality research. Lean, well-functioning structures allowed managing research projects efficiently. Among the many lessons learned, the approach to training institutions as opposed to selected individuals accompanies me in my career."

Mazvita Muchengeti

Senior Epidemiologist at National Cancer Registry, South Africa (at ISPM from 2012 until 2016)

"ISPM strengthened my scientific writing and analytical skills. This is crucial in my current job as a senior epidemiologist involved in local capacity building through scientific writing and statistics training of epidemiology students and research staff."

Olivia Keiser

Head of division of Infectious Diseases and Mathematical Modelling at the Institute of Global Health, University of Geneva (at ISPM from 2006 until 2016)

"I joined ISPM as a PhD student at the end of 2006. At that time, we were about 50 employees, all of whom knew each other. I particularly appreciated the very efficient administration team. When I left ISPM after a good 10 years, our HIV team had grown considerably. As I continue working in this field, I read the latest publications and news from ISPM with interest. Today, it is nice to see that, for example, there has been an increasing number of African PhD students in the HIV group who now hold leading positions themselves and pass on what they have learned to colleagues in their own countries."

Research
2020

248

scientific publications

128

ongoing research projects

32

are funded by the
Swiss National Science
Foundation

6

are funded by the Federal
Office of Public Health

Teaching
2020

2,123

students taught by ISPM
employees in bachelor's
and master's programs

94

continuing education
courses (incl. CAS, MAS,
and Swiss Epidemiology
Winter School) were
offered to

1,177

participants

Part 2

Research and teaching for a healthy world

As of: 18.08.2021

1

is funded by the
US National Institutes
of Health, NIH

4

are funded by the EU

Education and further training

Basic mission for students, continuing education for professionals

Giving knowledge and taking knowledge

Teaching and learning are among the most important activities of ISPM. Researchers impart the latest knowledge in public health to students and health professionals, and continually educate themselves.

In his inaugural 1970 concept, founding director Theodor Abelin placed education and training at the center of ISPM. Since then, the content and forms of teaching have changed to reflect the latest in public health, but the goals remain the same. "It is our mission to train the next generation of public health professionals," says ISPM Deputy Director Marcel Zwahlen. "Only if we pass on expertise can the Swiss population benefit from it." ISPM staff are involved in education and training programs that range from university-based training for students and postdocs to specialized courses in the extended professional training of public health experts.

Teaching changes constantly to correspond to the latest science.

As part of its basic mission, ISPM helps develop course curricula and compiles examination questions in collaboration with the Institute for Medical Education. For a decade, medical studies in Bern have also been following the Bologna guidelines, which are standardized throughout Europe with a bachelor's degree after

More than half of the researchers at ISPM also teach.

three undergraduate years and a master's degree after six years. Within this framework, ISPM provides medical students with expertise in interdisciplinary social and preventive medicine, epidemiology, and evidence-based medicine. In addition to the instruction of future physicians and pharmacy students, ISPM directly participates in master's programs in biomedical sciences and biomedical engineering.

Collaboration between faculties

"More than half of the researchers at ISPM are also involved in teaching and continuing education," notes the head of ISPM's Social Environment research group, Thomas Abel. For five years, Abel was president of the University of Bern's Graduate School for Health Sciences (GHS). Run jointly by the Faculty of Medicine and the Faculty of Human Sciences, and strongly influenced by ISPM since it was formed in 2008, the GHS is an interdisciplinary program that—in courses and both basic and applied research—addresses physiological, psychological, and social factors and contexts that bear upon the health of individuals and groups. In 2019 about one-quarter of GHS doctoral students were from ISPM. The university has a total of seven interfaculty graduate schools. In addition to the GHS, ISPM is also active in another: the Graduate School for Cellular and Biomedical Sciences, which the Faculty of Medicine runs jointly with the Faculty of Science.

ISPM also directly trains young researchers within the Institute. Graduate students learn epidemiological methods and biostatistics as key participants in ongoing and newly initiated research projects. They participate in research meetings, lead book and journal club discussions, regularly present their work in research seminars, and of course write up and publish their research.



Marcel Zwahlen
Deputy Director



In addition to these internal and external paths of scientific training, ISPM is also involved in the continuing education of public health professionals, primarily within the framework of the inter-university Master's Program in Public Health (MPH), which has been offered jointly by the three German-speaking Swiss universities of Bern, Basel, and Zurich since 1990. From the beginning, this interdisciplinary course of study has been aimed not only at physicians but also at candidates from all other health-related fields: academics with a background in medicine, natural sciences, humanities, and social sciences; professionals from hospitals, cantonal health services, and federal authorities; nonprofit organizations, consulting agencies, and research institutions. In recent years, the proportion of people employed in the pharmaceutical industry and by insurance companies has also grown. A large number of MPH graduates now occupy key positions in the Swiss health care system. "The claim is that the MPH degree should be a prerequisite for holding the cantonal medical position," says Marcel Zwahlen. At least in the larger cantons such as Zurich, Bern, Basel, and Geneva this is already the case, says Zwahlen, who, like many other ISPM researchers, teaches various courses in the MPH program.

Exchange at higher levels

Since 2005 the MPH continuing education program has been affiliated with the Swiss School of Public Health (SSPH+). Under the SSPH+ umbrella, ISPM organizes various courses for PhD students at the universities affiliated with SSPH+, including the courses of the Swiss Epidemiology Winter School. The Winter School takes place annually in January in Wengen during the week after the Lauberhorn World Cup ski races. In two consecutive, three-day intensive courses, top researchers from around the world present the latest in epidemiological and biostatistical methodology. Participants not only include junior researchers and seasoned professors, but also public health professionals from health care

"Today, an MPH is a near necessity for a job in public health."

Marcel Zwahlen

The Swiss
Epidemiology
Winter School
in Wengen is
internationally
renowned.

and business who attend to learn about and discuss the latest methodological developments. Teaching sessions take place in the morning and early evening, while in the afternoons participants can go skiing at the foot of the Eiger or engage colleagues in discussion. The Winter School in Wengen began in 2010 and rapidly gained international attention. With lecturers who are “primarily international luminaries,” the Winter School “plays in the Champions League of scientific events,” says Marcel Zwahlen. Accordingly, the courses always fill rapidly. /

EUROPE

Austria
Belarus
Belgium
Czech Republic
Denmark
Estonia
Finland
France
Germany
Greece
Hungary
Iceland
Ireland
Italy
Kazakhstan
Latvia
Moldova
Netherlands
Norway
Portugal
Romania
Russia
Slovenia
Spain
Sweden
UK

SOUTH AMERICA

Argentina
Brasil
Chile
Colombia
Costa Rica

Globally connected

From Australia to Zimbabwe, from Croatia to Colombia, ISPM researchers collaborate with partners in 64 countries worldwide. The international networking of research and teaching is just as important as interdisciplinarity. Both are cornerstones of the Institute.

In addition to the personal research networks of ISPM's scientists themselves, the Institute has long-standing and newly launched joint projects in countries in Africa, Asia, and South America, and existing and new partnerships with research institutions in the USA, Sweden, and Great Britain.

Picture: Getty Images

Ecuador
Guatemala
Mexico
Panama
Paraguay
Peru
Puerto Rico
Uruguay

ASIA

Bangladesh
China
Iran
Israel
Japan
Kuwait
Papua New Guinea
Philippines
South Korea
Taiwan
Thailand
Vietnam

AFRICA

Egypt
Eswatini
Cameroon
Lesotho
Malawi
Mozambique
South Africa
Tunisia
Zambia
Zimbabwe

NORTH AMERICA

Canada
USA

AUSTRALIA

Australia







ISPM's partner institutes

A flourishing neighborhood

Interdisciplinarity and collaboration lie at the center of social and preventive medicine. ISPM is closely connected with both the Bern Institute of Primary Health Care (BIHAM) and the Clinical Trials Unit (CTU Bern) of the University and Inselspital Bern. The approximately 260 researchers and staff of the three institutes have interacted more closely since June 2018 when they moved to the university's building on Mittelstrasse.

From adjacent offices, ISPM, BIHAM, and CTU Bern jointly conduct research projects and courses. Further synergy is assisted by ISPM's central services, which handle administrative work that includes course management, human resources, finances, and IT support for all three institutes. Here we briefly introduce the two partner institutes of ISPM.

Clinical Trials Unit (CTU Bern)

No medical progress without excellent clinical studies

Advances in medicine would be inconceivable without high-quality clinical trials. But planning and execution are not trivial. A clinical trial that examines the effects of a health-related intervention on patients must adhere to the highest international standards. To meet standards at this high level, the Clinical Trials Unit of the University and the Inselspital Bern (CTU Bern) assists clinical researchers at Inselspital and the University with clinical-medical relationships, statistical procedures, study planning and organization, and legal-regulatory aspects of clinical trials via in-depth consultation or direct project collaboration. Under the direction of Sven Trelle, nearly 60 employees from a wide range of disciplines in five departments draw upon their methodological expertise to ensure the high quality of clinical trials in Switzerland. In addition, CTU Bern is also involved in training students and young researchers.

160 projects and 68 clinical trials

Focusing on statistical planning, data management, and evaluation of results, CTU Bern conducted nearly 400 consultations in 2020 and was directly involved in 160 projects, 68 of which were clinical trials. More than 70 projects were large,

multicenter trials, nearly 30 of which were international in scope. CTU Bern is also heavily involved in the World Health Organization's Solidarity study program, which is investigating treatments and vaccinations for COVID-19. Other large projects include studies of the optimization of medication among the elderly, the treatment and prevention of kidney stones, and the treatment of patients who have had strokes. /

High-quality research and profound training for strong primary health care

Family physicians are the backbone of health care. They solve 90 percent of health problems with a share of just under 10 percent of health care costs. The Bern Institute of Primary Health Care (BIHAM) was founded in 2009 to strengthen family medicine and promote research in primary care. With its current staff of around 80 employees, BIHAM is based primarily on the three pillars of teaching, training future family doctors, and research.

The exemplary Bern Curriculum

According to BIHAM Director Prof. Dr. med. Nicolas Rodondi, family medicine faces major challenges such as the impending shortage of family doctors and the question of how to treat older patients, who often suffer from multiple diseases. BIHAM's commitment to finding solutions to these problems is supported by grants from both the European Union and the Swiss National Science Foundation. At the undergraduate level, it provides medical students with deep insight into family medicine thanks to its close collaboration with external family doctors. Nearly 700 experienced family doctors registered with BIHAM provide internships for 320 students in Bern each year. BIHAM is also

involved in continuing education, particularly via the Bern Curriculum for General Internal Medicine, the largest structured program in Switzerland for prospective family physicians and hospital generalists on their way to becoming specialists in general internal medicine.

Research at BIHAM aims to optimize treatments, reduce overuse, and improve quality of life. BIHAM also explores more targeted use of health care interventions, which may contribute to a reduction in overall health care costs. To strengthen research in primary health care, epidemiology, and public health, BIHAM works closely with ISPM, the Clinical Trials Unit (CTU Bern) and with Inselspital. /

Swiss Childhood Cancer Registry

Supporting outstanding epidemiological research

Tracking cancer in children

The Childhood Cancer Registry at ISPM is a unique collection of data that can be used to understand the causes and impact of this insidious disease, and optimize therapies.

When the results of a study based on ISPM's Childhood Cancer Registry appeared in December, 2015, the work received international attention in both the lay and professional press. The headline in the *Neue Zürcher Zeitung* read "When the road outside your front door makes you sick," while in the German medical report *ÄrzteZeitung* the story was headlined "Living near the highway increases the risk of cancer in children." What the researchers had discovered was that children growing up in the immediate vicinity of highways have a significantly increased risk of developing leukemia.

The study was based on data from the Childhood Cancer Registry, which was founded in 1976 as the first national cancer registry in Switzerland. At that time, pediatric oncologists in children's hospitals linked up to form the Swiss Pediatric Oncology Group (SPOG). Due to the rarity of childhood cancer—each year only about

Pediatric oncologists recognized need for cooperative methods.

Since 2004
 Claudia Kuehni
 and her team
 have further
 developed the
 registry, system-
 atizing and
 deepening it.

300 children in Switzerland receive cancer diagnoses, mainly leukemia, brain tumors, lymph node cancer, and other rare cancers—the oncologists realized that progress was possible only if data from many cases were collected and evaluated nationally and internationally.

When Claudia Kuehni joined ISPM in 2002 she was a young pediatrician who specialized in lung diseases and did research on asthma in children. “When we were asked if we could take over the Childhood Cancer Registry, I hesitated,” she recalls, “because I had no special knowledge in the field of pediatric oncology.” But the task appealed to her, and together with SPOG Kuehni has run the Childhood Cancer Registry, now based at ISPM, since 2004. She and her team have further developed the registry, systematizing and deepening it, and making it accessible for diverse research projects. The registry employs ten people, and fifteen scientists are currently involved in research projects based on the registry’s data.

High data quality thanks to complete coverage

Compared to other, adult cancer registries, data in the Childhood Cancer Registry are more complete and detailed. Customarily among adults, only the diagnosis, the spread of the tumor, and the initial therapy are recorded. With coverage of over 95 percent of all children who develop cancer in Switzerland, the Childhood Cancer Registry records not just therapy protocols but complete treatment histories in follow-ups extending over years, and decades. Surveys of the long-term consequences of cancer and its treatments, and the quality of life of affected children are conducted



Claudia Kuehni

Head of the research group Child and Adolescent Health



These evaluations provide information that will improve treatments for sick children.

and also included, along with illnesses reported by clinics and treating physicians. And the registry collects information from the Federal Statistical Office that can include cause of death.

The combination of medical data from the registry with population data allows researchers to pursue not only epidemiological research such as that on the increased risk of cancer in the vicinity of highways mentioned above, but also clinical research on the late effects of different treatments. This research can directly benefit patients by informing improved treatments.

And treatments have in fact improved. By documenting trends and progress, the Childhood Cancer Registry can show that the ten-year survival rate, which is recognized as a measure of cure success, was less than 60 percent in the 1970s and 1980s, and that today the survival rate of children diagnosed with cancer exceeds 85 percent.

Since the introduction of the new Cancer Registry Act 2020, ISPM has also maintained the federal cancer registry for the Swiss Confederation. The federal government finances the registry, while research projects such as that on causes of cancer or late effects in children are financed by third-party funders including the Cancer League and patient organizations.

New registry for rare diseases

Just as more inclusive data can help those with childhood cancer, children who suffer from any of the more than 7,000 rare diseases currently known to exist compel national and international collection of information about their situations. The Kuehni group has also established a registry for rare diseases in Switzerland, along with more specialized childhood disease registries at ISPM. The Pediatric Respiratory Epidemiology Group studies asthma, wheezing and

chronic coughing disorders, and cystic fibrosis, and manages national databases such as the Swiss registry for primary ciliary dyskinesia (PCD). By establishing such frameworks for collecting patient and family information on rare diseases like PCD, physicians, researchers, patients and their families, and advocacy groups surmount the isolation of low incidence to learn and share information about diseases and treatments. /

AIDS research with a huge data set

ISPM began epidemiological research on HIV/AIDS in Southern Africa in 2006, where it participates in the extensive data collection of the International epidemiology Databases to Evaluate AIDS (IeDEA) cohort network. ISPM is represented by Matthias Egger in the leadership of the Southern Africa region of IeDEA (IeDEA-SA). Operating in Lesotho, Malawi, Mozambique, Zambia, Zimbabwe and South Africa, IeDEA-SA combines data from 16 large cohort studies from participating countries totaling over one million HIV patients. This region in which nearly 13 million children and adults live with HIV continues to be greatly affected by the AIDS pandemic.

ISPM's Per von Groote coordinates nearly 30 IeDEA-SA physicians and other researchers from epidemiology, sociology, molecular biology, statistics, and data management as the IeDEA-SA program manager. The researchers also study tuberculosis, cancer, and psychological suffering, which often place additional burdens on those affected by HIV. The extensive and detailed data set greatly contributes to improving the treatment of AIDS patients with antiretroviral therapy, and monitoring and preventing the spread of HIV.

Gaining an overview with the living evidence method



Nicola Low

Head of research group
Sexual and Reproductive
Health

Sexually transmitted infections (STIs) such as syphilis, gonorrhoea, and chlamydia are often ignored, but are common and on the rise worldwide. To address this public health challenge, the Sexual and Reproductive Health research group, headed by Nicola Low, studies the epidemiology, surveillance, and prevention of STIs in Switzerland, Europe, and around the world. A major focus of the group is the adverse effects of STIs during pregnancy, which are particularly common in countries such as South Africa and Papua New Guinea. After triggering a pandemic in 2015, Zika virus, too, became a focus of their STI research. Though spread mainly by mosquitoes, Zika can also be transmitted by sexual intercourse and during pregnancy. With research findings emerging and changing quickly, researchers led by Low began applying the living systematic review approach in the large Zika Open Access Project (ZOAP) to help answer unresolved research questions about Zika virus.

With the emergence of a novel coronavirus, the research group built on its work with STIs and Zika to focus on emerging infectious diseases and pandemic preparedness. The unprecedented flood of so many publications related to COVID-19 challenged researchers to locate and keep track of research bearing on crucial questions as the pandemic progressed. As part of an international team, with funding from the Swiss National Science Foundation and EU, Low and her group developed the COVID-19 Open Access Project (COAP), which searches for pandemic-related publications appearing daily across numerous databases, and automatically collates them. The living evidence that COAP provides can be accessed in near real time via an open platform by researchers worldwide who are addressing vital research questions about the coronavirus.

Medical sociology

Health as a consequence of social context

Health is more than not being sick

Health depends on more than genes and risk factors. Thomas Abel's Social Environment research group explores underlying social contexts that make people healthy, and sick.

How does society distribute opportunities for health? This sociomedical question is a thread that runs through the work of Thomas Abel's Social Environment research group at ISPM. As his own group and others have shown, a person's socioeconomic status has a crucial influence on health. Abel observes, "People who grow up in poorer circumstances clearly fare worse."

Education, the networks of relationships in which people are integrated, and even family and social background all influence personal health. In their research, Abel and his team explore and empirically support these influences to obtain a more comprehensive understanding of health and health promotion that is not solely medically defined by disease. The ultimate goal of the work is increasing equity for all.

Abel has a strongly interdisciplinary background. He obtained his doctorate in sports science at the University of Giessen in Germany, completed a second PhD in medical sociology at the University of Illinois

"People who grow up in poorer circumstances clearly fare worse."

Thomas Abel

To understand relationships, the multidisciplinary team has developed meaningful indicators.

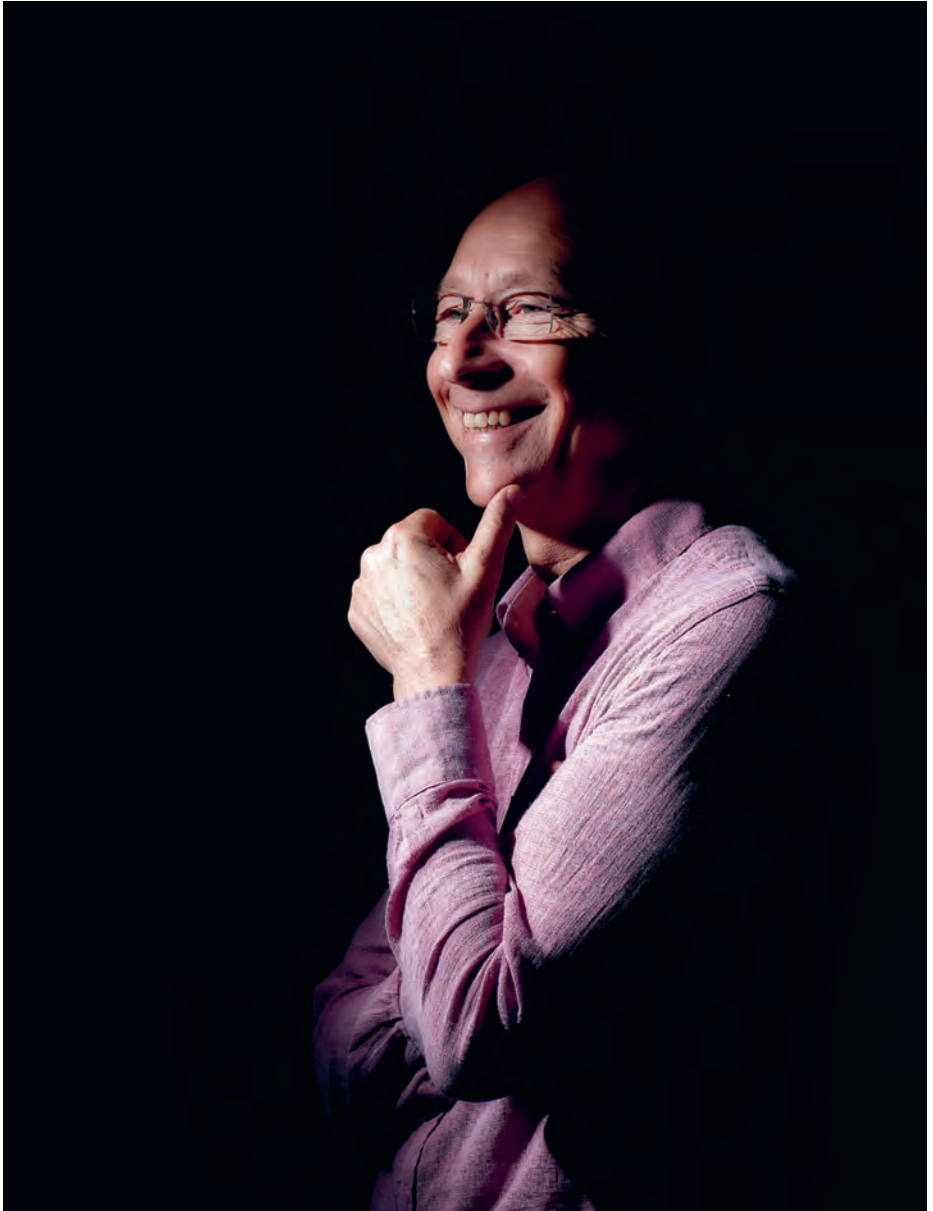
Champaign-Urbana in the USA, and returned to Germany to write a medical *Habilitation* at the Philipps University of Marburg. In 1995, he moved to what was then the Department of Health Research at ISPM. The decision, five years earlier, of the cantonal governing council to found the department to conduct interdisciplinary research into the relationships between behavior, environment, and health “was a very progressive decision,” says Abel.

Life circumstances

From the outset, he focused on theoretically grounded, empirical research using sophisticated interviews and health surveys of living conditions and their influence on health. A basic question was, How does it come about that certain people or groups of people have a life orientation in which health is not a priority? “It’s not in the genes,” says Abel, “and it doesn’t fall from the sky, but depends on the circumstances people experience in life, which are strongly influenced by social structures.”

Abel has worked with an interdisciplinary collaboration of researchers from ethnology, social psychology, and medicine to develop meaningful indicators that are needed in social environmental research. In one study, for example, participants were asked, “In an emergency situation, from whom could you spontaneously borrow 500 francs without any major problems? Would you get this money from your father, mother, grandparents or siblings, or even acquaintances?” The participants ranked their potential donors on a scale from 1 to 10. Those who could obtain the money more readily, from more people, received a higher score. It was then possible to relate this score to the health status of a person or a group of people. Abel explains, “This indicator is so meaningful because it links social networks and economic resources that someone can activate.”





Thomas Abel
Head of the research group Social Environment

More than ten years ago, Thomas Abel introduced the explanatory concept of “cultural capital” to health research, which continues to be widely cited. He recognized that people’s health behavior depends not only on social and economic conditions, but also is influenced by unequally distributed cultural resources. These include, for example, an individual’s values if those values are in line with the values preferred in society; educational qualifications, which act as «door openers” influencing the chances of a successful and healthy life; and health literacy and the way people deal with illness.

Participatory research

“Today, I also am increasingly interested in qualitative research,” says Abel, “which means that we no longer record and evaluate indicators, but instead speak with people in detailed interviews.” The meaningful data points are no longer bare figures, but research participant testimony. An example of such research is the Swiss National Science Foundation study Miwoca (Migrant Women’s Health Care Needs for Chronic Illness Services in Switzerland), which ran from 2017 to 2020. Women in Switzerland with a migrant background more often suffer from chronic illnesses. At the beginning of the nationwide study of the problem, which derived recommendations for improving the health care of migrant women, researchers directly involved female patients in its design. “Not only do the results reflect the patients’ views,” Abel explains, “but the initial questions themselves were developed together with the users. They are the experts on their own situations and can describe in much greater detail what the sensitive areas are.”

The meaningful data points are no longer bare figures, but research participant testimony.

Active engagement of research participants is becoming increasingly important in health research. Participatory research will be further strengthened at ISPM by Annika Frahsa, who joined ISPM in May 2021 to lead the Community Health research group. Frahsa trained

The crisis shows once again that the question of why health is unfairly distributed is still not off the table.

in both political and sports science, and as a member of the core team of the Miwoca study she has already worked with Abel, who will become emeritus next year. At ISPM, Frahsa will continue to identify weak points in the health care system and work to find community solutions because, as the coronavirus pandemic clearly shows, the most important promoter of the health of a population is the population itself. And as the pandemic once again highlights the inequitable distribution of health, the question of what can be done about health inequity is still with us. /



The library

More than borrowing books and magazines

The science of searching the literature

Research supporting evidence-based medicine increasingly relies on the sophisticated search strategies of the ISPM library's expert searchers.

The ISPM library has developed into a competence center for systematic literature searching and database queries. The two information specialists Doris Kopp and Beatrice Minder support ISPM's research groups, especially with systematic reviews. The fact that ISPM publications often include the two search specialists as coauthors shows how central this work has become in scientific research.

Systematic reviews and meta-analyses of studies published worldwide are essential in epidemiology. They form the basis of evidence-based medicine. They can evaluate the effectiveness of treatments and health promotion measures, and their results help improve therapies and preventive measures. The quality of such reviews, and thus their value for patients and the general population, begins with comprehensive selection of the relevant publications, for which expert know-how is indispensable.





Doris Kopp (left) and Beatrice Minder (right)
Librarians and information specialists

“Researchers depend on our highly accurate way of working.”

Doris Kopp

“It’s like looking for needles in haystacks,» says expert searcher Kopp. The medical database Medline alone contains 28 million publications, while Embase has as many as 37 million. There are many other important databases as well and selecting the right databases to search is itself a key task. The big databases can overlook journals that are more regional in scope, which publish articles in languages of the region. For a review of the Zika virus in Brazil, for example, databases from South America must be searched that contain proportionally more publications in Portuguese and Spanish.

Strategizing the search

“The methodology of the search is always similar, regardless of the research topic,” says Kopp. At the beginning, there is the research question. In a meeting with the researchers, the librarians define the search terms. They should be formulated precisely, yet be sufficiently open so that all relevant publications can be found. Then, the search experts develop a strategy. Since each database has its own query system, the strategy must be translated into the respective search syntax. Search strategies aim at international standardization and must be transparent and reproducible, and error free. “If we get just one character wrong, it could result in important studies being missed,” says Kopp. “Researchers depend on our extremely precise way of working because they can evaluate only the studies that the complex search strategy has identified.”

Today, building comprehensive literature searches can account for half of the ISPM librarians’ working time—and that fraction is rising. They also teach the basics of performing systematic literature searches, and relay practical tips and tricks to Master of Public Health and doctoral students. And they increasingly support

researchers in the publication process. This, too, has developed into its own science as the open access movement grows and researchers and information specialists cope with widely varying policies of publishers, which make fulfilling the requirements of funding institutions more complex. /

Today, building comprehensive literature searches can account for half of the ISPM librarians' working time.



Methodology research

Advances in evidence-based medicine

Detective work for the benefit of patients

With sophisticated reviews and new meta-analyses, Georgia Salanti and her team are tracking down optimal therapies. Today, these methods are even being individualized.

Only the best is good enough when it comes to treating patients. This could be the motto of the Evidence Synthesis Methods research group. Georgia Salanti, who has been with ISPM since 2016, leads the group of nine statisticians and epidemiologists who use statistical methods to evaluate data on medical therapies and drugs, infer efficacy and safety, and detect possible biases in results. The group relies upon sophisticated, state-of-the-art evidence synthesis tools, meta-analyses, and reviews in which study results published world-wide on treatments under review are collected, evaluated, and synthesized.

An example of the Evidence Synthesis Methods group's use of evidence-based tools in health care and public health is their network meta-analysis work. While traditional meta-analyses might only review pairwise studies comparing the efficacy of a new drug with an older treatment, Salanti and her group use long-standing experience with network meta-analysis to



Georgia Salanti

Head of the research group Evidence Synthesis Methods



Depending on patient characteristics such as age, sex, and comorbidities, the optimal therapy often differs.

compare multiple treatment options. This results in an evidence-based hierarchy of treatments from the most efficacious to the least, and from the most tolerated to that with the most side effects.

Real-time evaluation

The team extends this methodology to personalized treatment. Depending on patient characteristics such as age, sex, and comorbidities, the optimal therapy often differs; the novel models the group develops can accommodate the personal in choice of treatment. Another innovative method Salanti's group uses is living-evidence synthesis in which newly published studies on a given topic are pulled daily from medical databases. Collection and synthesis of research in near real time allows uninterrupted linking of evidence and practice.

An application of living evidence is the group's MHCOVID (Mental Health COVID) project, which tracks worldwide research on the impact of the coronavirus pandemic and containment measures on mental health. The global reach of the group's research precedes the pandemic and is reflected by the fact that Georgia Salanti regularly makes it onto the worldwide list of most highly cited researchers. /



“With ISPM,
the canton of Bern
has a research
institute that has an
outstanding national
and international
reputation.”

Linda Nartey



Lukas Fenner



Martin Rösli



Linda Narthey

Lukas Fenner

Cantonal Medical Officer Solothurn (until 2021) and Professor of Epidemiology at ISPM

“ISPM Bern is an excellent starting point for public health research: well networked internationally with scientists and research groups in the most important public health disciplines, its work benefits the Swiss population and also people in other countries with lower average incomes. In this way, ISPM makes a significant contribution to the advancement and application of knowledge about the world’s most important infectious diseases such as tuberculosis.”

Martin Rösli

Head of the Environmental Exposures and Health Unit at Swiss TPH, Basel

“Research on important public health topics at ISPM Bern is extremely diverse and of high quality. One example among many is the pediatric cancer registry. The effort required to systematically collect detailed data over several decades is often underestimated. The Childhood

Cancer Registry is the foundation for research on the causes and consequences, and ultimately the prevention of cancer in children.”

Linda Narthey

Cantonal Medical Officer Bern (from January 2022 Vice Director of the Federal Office of Public Health)

“With ISPM, the canton of Bern has a research institute that has an outstanding national and international reputation in social and preventive medicine. Its manifold scientific contributions to the epidemiology of infectious diseases such as HIV and the coronavirus pandemic, and also to widespread ailments such as cardiovascular diseases, benefit people worldwide. Together with other research institutions, health authorities, and experts in Switzerland and worldwide, ISPM will continue to make important contributions to good, evidence-based medicine that helps those who suffer and preserves the health of the healthy.”

42

offices

228

computers (not including
personal computers)

125

servers process data
from ISPM research
projects day and night

166

meters to the Gelateria
di Berna

1,000

meters from Mittelstrasse
to the main station of Bern

Part 3

New ways for new challenges

2,200

meters to the
Marzilbad on the banks
of the river Aare

Path to the future

Big Data, Planetary Health and a lot of teamwork

The world is not enough

The effects of climate change and environmental conditions on the health of populations are still virtually unexplored. To find solutions, ISPM researchers are even collaborating with astrophysicists.

The rapid spread of SARS-CoV-2 around the world has disrupted communities, nations, and entire societies, and posed a crisis for health care systems. With public health more important than ever, the coronavirus pandemic presents new challenges to social and preventive medicine. Christian Althaus, who has led the Immuno-Epidemiology research group at ISPM for seven years, cites three challenges in particular: the ever-increasing amount of data, the greater complexity of methods, and the increasing need for interdisciplinarity.

Managing the flood of data

Epidemiology is a data-driven science. Monitoring the emergence of new coronavirus variants in the pandemic requires the sequencing of large numbers of viral genomes, which generates very large data sets. The Nextstrain project, codeveloped by Emma Hodcroft of the Immuno-Epidemiology group,

“The pandemic has shown us that public health is more relevant than ever.”

Christian Althaus

has already captured over two million viral sequences since SARS-CoV-2 first emerged, and the project adds thousands of new sequences every day. This poses considerable challenges for algorithms and analyses.

Astrophysics inspires epidemiology

Collaboration with other disciplines can lead to new approaches to problems. For two years, Christian Althaus has been working with Kevin Heng from the Center for Space and Habitability at the University of Bern. How biomolecules form on distant planets is an astrophysical question, while how one person transmits an infection to another is a question for epidemiology. Although these two fields seem at first glance to be light-years apart, the equations that describe chemical reactions in space and the spread of the coronavirus are closely related. “The similarities between methods can lead to new insights into the dynamics of infectious diseases,” says Althaus, who points out that “the mathematical tool set from astrophysics allows us to better understand the models in epidemiology.”

Accordingly, Althaus and Heng described fundamental principles of infection dynamics in a joint publication last year. The two groups implement their simulations on UBELIX, the University of Bern’s high-performance computing cluster.

Using holistic perspectives

Broadening thematic horizons offers yet another approach to the study of population health. The transdisciplinary One Health concept takes a more holistic view of health and the connections between humans, the living world, and our environment—locally and globally. Althaus says this concept “makes particular sense for infectious diseases in which pathogens often jump from animals to humans.” Demographic





Christian Althaus

Head of the research group Immuno-Epidemiology



Dialog across institute boundaries is intended to facilitate concrete projects with new questions.

change, social and economic conditions, spatial and landscape design, nature and biodiversity, and of course climate change are all intertwined with human health. Recognizing this, in 2019 ISPM and the University of Bern's Oeschger Center for Climate Research established the Climate Change and Health research group. Led by Ana Maria Vicedo-Cabrera, the group studies the impact of global warming on health. In a recent analysis of 43 countries, the group's researchers were able to show that among all deaths in which heat played a role more than one-third were attributable to man-made global warming. Research such as this is essential to meeting the challenge of adapting to climate change.

Dialog between disciplines

Since the fall of 2020, Christian Althaus also has headed INPUT, the recently founded Interfaculty Platform for Data and Computational Science. INPUT intends to strengthen dialog between disciplines across the University of Bern and enable concrete projects that address new questions. "We would like to enter into more of these types of collaborations," says Althaus. He envisions collaborations with the Center for Artificial Intelligence in Medicine or the Insel Data Science Center to exploit promising tools from machine learning to address future health crises. /

Oscar H. Franco

ISPM Director since 2018

“We want to create a space where scientific innovation becomes possible”

Director Oscar H. Franco continues the development of social and preventive medicine with the vision ISPM2030.

Prof. Franco, you are the first director of ISPM who is not from Bern. Why did you decide to take the position?

I already knew ISPM as one of the best institutes of social and preventive medicine in Europe. During my epidemiology studies in Rotterdam, one of the lecturers was my predecessor Matthias Egger, who impressed me very much. But I had never been to Bern. Nevertheless, I felt close to Bern because in Colombia, where I grew up in Bucaramanga in the Andes, an immigrant from Bern was a friend of our family. His name was Karl Niederbacher, he was a patissier, and he baked the best cakes in Colombia. He often came to visit and always told us children about his homeland, the Bernese Alps, and the warm-hearted people there. I thought our mentalities were very similar—even if the people of Colombia are perhaps a bit more extroverted.

“Health is
a human right
to which all
are entitled.”

You have been director of ISPM since June, 2018.

How did it start for you at the Institute?

Before I took up my post, I gave a lot of thought to how I could continue the successful work of ISPM. I developed a vision that I presented to ISPM staff on my first visit. Then, when I had taken up the post I discussed that vision with everyone at the Institute and incorporated their various suggestions. This resulted in the vision ISPM2030. I therefore think that it really belongs to everyone.

What do you see as the core of social and preventive medicine?

It seeks a fundamental understanding of how to move from population to solutions that help the individual, and also how to move from understanding the individual to solutions that help the whole population. Our research should empower people to draw on the full potential of health that their lives afford them. Health is a human right to which all are entitled.

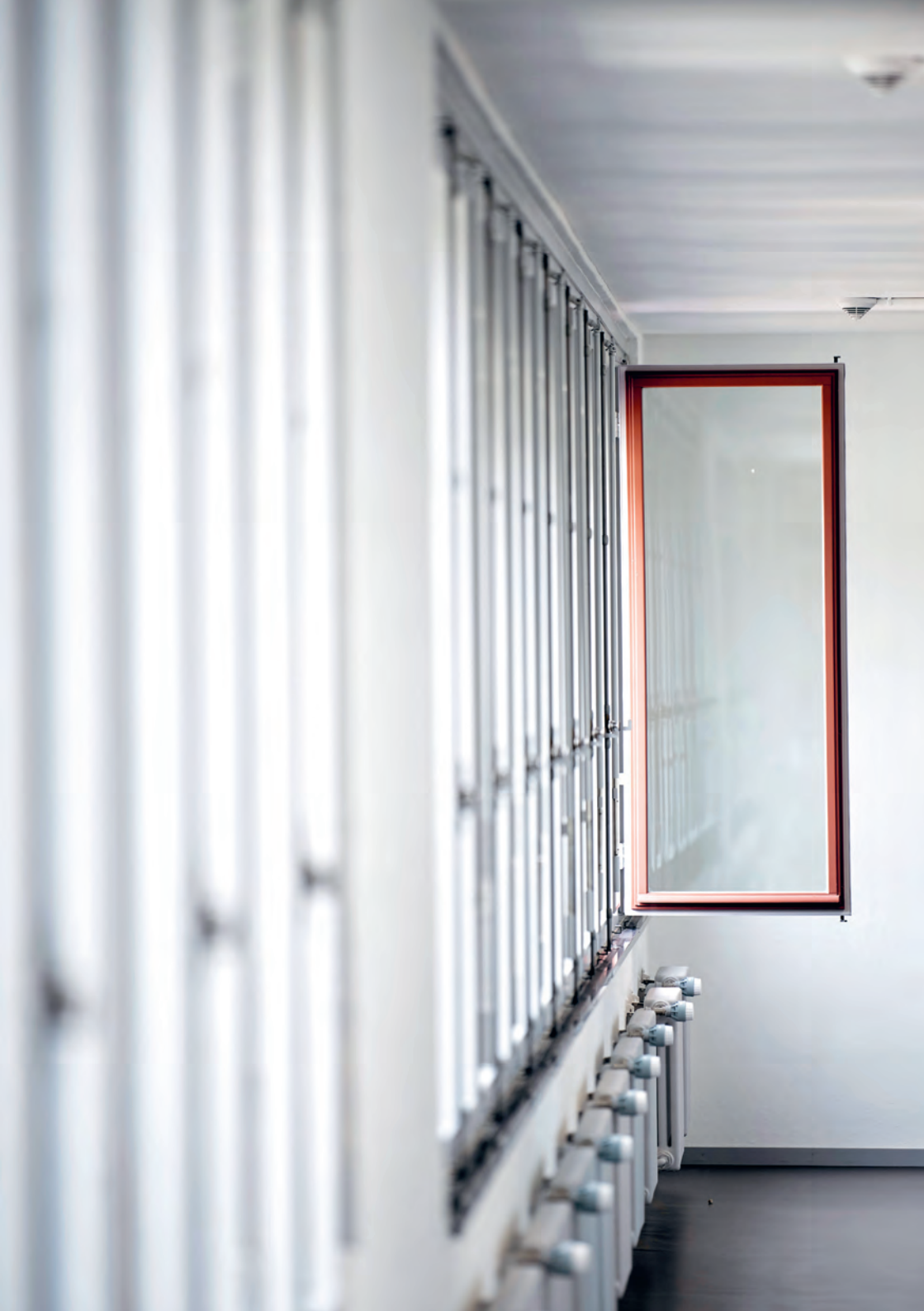
The basis of the vision ISPM2030 is internationalization.

Why is this so important?

Networking across borders has always been at the center of science, especially in the very interdisciplinary field of social and preventive medicine. Only by cultivating global exchange can we find the best local solutions. This includes both scientific collaboration and exchange opportunities for PhD and other students in our partner institutions worldwide. For me, the world is a book full of lessons from which we can learn so much. The knowledge we can acquire and share benefits people in the city and canton of Bern, throughout Switzerland,



Oscar H. Franco



“We are sending a message to the world of science to attract the best international talents.”

and in Mexico, Colombia, Papua New Guinea, Zimbabwe, and many other places around the world where we are involved in research projects. By explicitly focusing on internationalization we are sending a message to the world of science to attract the best international talents, whom we need to be among the best. We will not simply wait and do nothing.

You list four research priorities in the vision: aging and prevention of age-related diseases, childhood and youth-specific research, infectious diseases, and planetary health. Why these four?

These four research priorities are aligned with the key human health challenges we will face in 2030. That is why our vision is called ISPM2030.

Why will research on aging become so important?

Throughout the world the proportion of those who are elderly will increase considerably by 2030. Age-related diseases will become increasingly significant. Therefore, the important question for social and preventive medicine is, How can we prevent the diseases of old age? And prevention starts in childhood and adolescence. That is why we also see research on childhood and adolescence as a strategic focus. One example is smoking: 80 percent of people who smoke start before they turn eighteen. Why should we wait until people are thirty or forty, or older, to get them to quit? By then it is often too late.

A third focus is infectious diseases.

With the coronavirus pandemic we experienced at first hand the drastic consequences an infectious disease can have. With increasing globalization, pandemics will threaten us regularly. That is why we have launched an interdisciplinary research platform on the dangers of new pandemics and finding better responses.

“Focusing on these areas does not mean we will not pursue other research areas.”

You call the fourth focus planetary health. What do you mean by that?

The health of the planet reflects the health of the individual and vice versa. This insight was formulated by the Greek philosopher Heraclitus over 2,500 years ago. The state of the world affects our well-being. If you think of the effects of climate change, this seems very logical. But biodiversity and the state of ecosystems in general also affect our health. We, in turn, influence the state of the world through our lifestyle and behavior. If we fly less, bicycle more, smoke less, and eat less meat, we help the climate and nature, and also our health. Planetary health aims at enabling new research approaches that connect individuals and the planet.

Will these four priorities have to be the focus of all research groups?

No. Focusing on these areas doesn't mean we will not pursue other research areas in which we already are strong.

In ISPM2030, in addition to the research groups you outline three tiers (translation and implementation, social diversity in health, advanced methods) that connect the various groups. What do these mean specifically?

These are research platforms that span three themes that are important to all research groups. The goal is to create a space where the groups can talk and work together. The interdisciplinary collaboration should not be limited to the microcosm of ISPM. We would also like to reach out to other institutes of the University of Bern.

What interdisciplinary topics are we talking about?

It is about methodology and data processing; translation, which means the implementation of research results for the benefit of society; and lifestyle and behavior, which play a role in social and preventive medicine in all research groups.

“Who would have expected Einstein to hatch some of the greatest innovations in the history of physics at his desk in the patent office in Bern?”

What do you hope to gain from these platforms?

I think we can overcome the new challenges and problems humanity is facing only if we look at them from new and perhaps unexpected perspectives. We hope to find more innovative solutions from these interdisciplinary platforms. Of course, this is not an easy path; true innovation never follows a strategic plan. For example, who would have expected Einstein to hatch some of the greatest innovations in the history of physics at his desk in the patent office in Bern? Einstein himself probably could not have planned such innovations. They just happen when the space is there for good researchers to meet and be creative.

Is there enough scope for this in the fierce competition of international research, or, to put it another way, can you afford creativity at all under the publish-or-perish dictate?

That is an important question. Output and productivity in the scientific enterprise cannot simply be measured in the same way as in the private sector. We can measure funding, the number of publications, master’s and PhD degrees, and how many students we train. But more important to me than those measures of success is that employees have a high level of satisfaction. We are successful when the people who work for us are happy, and when they are proud to work for ISPM.

How do you plan to achieve that?

Our employees are our most important asset. We want to provide targeted support for their training and career development as part of the talent cycle, whether at the level of doctoral students, postdocs, or senior scientists. Therefore, first and foremost we want to attract good researchers and give them the tools and space that foster creativity. Then they don’t have to count publications because those will come automatically. This is also reflected in our numbers, which have gotten better and better in recent years. We have published more, and brought in more third-party funding.





“I also have played football all my life, and I just loved Diego Maradona’s style of play.”

Your dissertation begins with a quote from Diego Maradona: “God helps me play well. That’s why I cross myself every time I enter the pitch.” What does the Argentine world footballer mean to you?

Diego Maradona was a hero to me when I was a child. For me, he symbolizes how someone from the poorest of backgrounds can achieve great things. Of course, he was a very controversial personality, but I admire him for his talent and for what he achieved with it. I also have played football all my life, and I just loved his style of play. In addition, the quote shows that he was a deep believer and that he was grateful to God for the talent he had. This humility and the awareness that our talents are a gift impresses me deeply. I, too, am grateful to God for everything He gave me. /

“My goal is to be able to use the knowledge I’ve gained here in a health care institution or in the climate change field ”

Evan de Schrijver



Sven Strebel



Evan de Schrijver



Cristina Mesa Vieira

Sven Strebel

PhD student in the research group of Child and Adolescent Health

“Even during my pharmacy studies at ETH Zurich, I was particularly fascinated by epidemiological questions. How often does a disease occur in our society? What factors determine health or illness? How can we make this knowledge useful for everyday clinical practice? My doctoral thesis in pediatric cancer research at ISPM allows me to pursue such questions and thus contribute to the health of children and adolescents.”

Evan de Schrijver

PhD candidate in the Climate Change and Health research group

“I see my PhD in climate change and health as an incredible opportunity to learn multidisciplinary skills from both an epidemiological as well as climate science perspective, from renowned researchers in our fields who have close-knit ties to both. I see ISPM as an incredible stepping stone to pursue a career in academia that will give me

access to larger health and climate institutions to advise and collaborate with. Ultimately, I envision a field in which, similar to the way science, politics, and society have collaborated during the COVID-19 pandemic, science can influence the course of climate change and reduce the public health burden.”

Cristina Mesa Vieira

PhD candidate in the Lifestyle and Behaviour research group

“I decided to join ISPM because of its work environment. Everyone here is committed to achieving academic excellence while maintaining a balanced and healthy life. In the future, I expect to make use of my academic experience in the development and implementation of policies that contribute to the well-being of the most vulnerable populations. I would like to dedicate my work to closing the gaps between scientific evidence and the people who really can benefit from it.”

Closing words

Annika Frahsa, Ana Maria Vicedo, Eliane Rohner

The future of public health concerns us all



Annika Frahsa
Head of the research
group Community Health
and Health Care Systems

Public health achieved impressive gains in life expectancy and quality of life in the last century. Today, the global threat of the SARS-CoV-2 pandemic has brought unprecedented attention to public health and epidemiology, and reinforced their importance. Multidisciplinary local, regional, and global teams have collaborated to fight the pandemic and its consequences by putting into practice ongoing developments and novel approaches in public health research. These include the use of technologies of big data and advanced statistical methods, and the implementation of experts' collaborative platforms, which have allowed rapid responses to the changing course of the pandemic.

Yet, the pandemic has also worsened long-standing global health inequalities and revealed shortcomings in our responses to public health threats. Biomedical and public health achievements have not been made available to everyone, and people in low-income communities and countries bear a disproportionate burden of this pandemic. We need to get better at addressing health inequality and its underlying social, economic, and environmental factors. Public health requires a more holistic approach that takes into account people's physical as well as mental health, their social needs and assets, and the environment. It can focus on



Ana Maria Vicedo

Head of the research group
Climate Change and Health

agency for change rather than only risk factors for health. This is essential if we are to tackle pressing public health challenges such as the effects of climate change, other infectious diseases that will emerge, and rising diseases of aging that include cancer, and cardiovascular and neurodegenerative diseases.



Eliane Rohner

Head of the research
group Cancer

Public health constantly evolves, and ISPM adapts to new challenges. The pandemic has taught us that we need to communicate and engage more effectively with the public and policymakers to reduce misinformation. We should gain insight from different angles, and learn from each other. The pandemic has also shown the relevance of a planetary health perspective on public health research as it addresses the complex global population challenges of the present and the future. We can do this by drawing on the key attribute of our Institute: the multidisciplinary nature of our expertise, which we will continue to expand as we further diversify our teams. By addressing local and global public health challenges in a collaborative and holistic way we can also help bridge the gap between academia and the public. The future of public health concerns all of us. /

Imprint

Project lead

Brigitte Wanner, ISPM, University of Bern

Concept, text and editing

Matthias Meili, Zurich

Photography

Adrian Moser, Bern

Design concept and layout

Abteilung Kommunikation & Marketing, University of Bern

Copyediting

Christopher Ritter, Bern

Proofreading

Die Leserei, Bern

Print

Jordi Druck, Belp

We thank our sponsors



krebsforschung schweiz
recherche suisse contre le cancer
ricerca svizzera contro il cancro
swiss cancer research

University of Bern

Institute of Social and Preventive Medicine

Mittelstrasse 43

3012 Bern

Switzerland

www.ispm.unibe.ch