

# BULLETIN

April 2020



SGSMP  
SSRPM  
SSRFM

Schweizerische Gesellschaft für Strahlenbiologie und Medizinische Physik  
Société Suisse de Radiobiologie et de Physique Médicale  
Società Svizzera di Radiobiologia e di Fisica Medica  
Swiss Society of Radiobiology and Medical Physics

## Letter from the Editors



Dear SSRMP members,

I sincerely hope you are all doing well and are being reinvigorated by the spring time's first sparkles and blossoms. Before going into this Bulletin's contents, I dare sharing some reflections on the current very exceptional situation, as this has so deeply affected not only our personal lives, but also our professional activities.

The received information, data, directives and statements have been changing by the minute and have been contradictory and confusing at times. Between the media outlet's misleading information, continuously varying numbers, "corridor horror stories" and general ("pasta and toilet-paper") panic, it has been hard to get to the heart of what's really happening and why, and what might be a reasonable response to it. For sure this will be something very interesting to investigate a posteriori. As for now, it seems that independent of our educational background, we are all *wanderers in midst of a sea of fog*.

Willingly or not, we are all facing a situation in which "war time" measures are taking place. Cities and entire countries are closing down their borders; schools, public places and institutions

are being shut down; curfew and very strict limits on personal time spent outside the house are being enacted.

And so it is that what we have always considered our rightful position in this world is suddenly over-turned. During this historical moment in time, in which nationalist ideologies and isolationist politics are regaining footholds in many parts of the world, unexpectedly each one of us could become the isolated, the "illness bearer", the one stopped at the borders. Even if we are white. Even if we are European and "clean looking". Even if we have the money for first-class tickets! In a society based on productivity and consumerism, where everything can be ordered online, where we are always reachable at any moment of the day and in any place of the world, where we are all running non-stop 14+ hours a day to be more productive, more fit, more efficient, more social, more visible, more...?

Suddenly we must stop.

Within a moment, we are forced to confront with TIME, whose value we usually measure in productivity, and with whom we must now remain intimately in our houses. In a time where personal

relations and communications are mainly played out in the virtual reality we've created through social networks and the illusion of proximity that they generate, suddenly this is all what's left and we realize how much we miss the real visit of a friend. We miss the basic gestures and contacts with our families and partners, the few words exchanged with the neighbors in the stairwell, even the handshakes or the "Grützi" from the bus driver.

The consequences of Covid-19 pandemic are frightening, annoying and sad, and unfortunately we can't change them. Instead, what we can do is to look every day for new resources within ourselves (and our houses), to do our best in our job - as we are among the few categories which can still offer a service to society under the current circumstances - and to focus on the aspects in our lives that the current situation is bringing back to the surface and that maybe we had forgotten or taken for granted.

Isn't that true also when facing the day-to-day work-related problems? Focusing and investing too much on the question of *why*, often doesn't bring much change, whereas a more constructive question might be *and what now?* The sea of fog certainly will not disappear (or not immediately),

but we can try to be the *wanderers above a sea of fog*, rather than the ones lost in its midst.

And as such, let's forget what should have populated this issue of the Bulletin and it's now missing. Let's instead read through the encouraging words of the society's President and let's look forward to the upcoming conferences in late Autumn. Let's meet the PhD student who in this issue shared his work and in few words his personal experience and future prospects, and let's meet the group from Lindenhofspital in the SpotLightOn. Also what you might find very interesting in this issue is a significant update on the clinical audits which are going to take place from this year 2020. We sincerely thank Yvonne Käser, our SSRMP delegate on the clinical audits' steering committee, and Michela Chianello for their updates, clarification on the structure and organization of the audits and the resume from the first kick-off meeting of the auditors.

Enjoy the reading and take care!

Francesca Belosi,  
On behalf of the Editorial Team.

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Cover Image: *Wanderer above the Sea of Fog.*  
Kunsthalle, Hamburg

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# PRESIDENT'S LETTER

Dear colleagues,

a few weeks ago, I was starting to think about this president's letter. Initially, I thought about topics such as "a nice spring time is coming again", "getting prepared for the conference season", "invite you to participate in new SSRMP working groups", "invite you to become an active member of the board" etc. However, as all of you came to realize, things changed like nobody ever imagined and so did all the ideas I mentioned above.

The Corona pandemic is an exorbitant challenge for everyone. The situation and measures change almost every hour and the topic is omnipresent everywhere. It is difficult for those having to make decisions, which significantly change our daily life. Tremendous consequences for each person, the economy and our society are unpredictable in my opinion and yet they are necessary. Our hospitals prepare in attendance of the overwhelming number of stationary patients. ETH and other universities are going into emergency operation, shutting down all possible research, and lectures are only digitally available. Companies close services or split employees into separated groups. Many of us are switching to home office. Social life is almost not existent anymore, social distance is required. Everywhere significant changes occur.



Nonetheless, these decisions are taken aiming to change the exponential increase of the disease spread to a level that can be managed by our health system. Yet it is not clear if the currently undertaken measures are sufficient or if even more restrictive ones need to be implemented. At this moment we still prepare for the peak of the crisis and do our best to learn from others being ahead. Having said that, I have no idea what the situation will be by the time that you are actually reading this.

The situation is also extremely difficult for all those who had to follow the ordered measures. People facing fears, are worried and feel unsure in these highly emotional times. This also includes both our professional and private life.

With respect to our professional life, some of us might already have been involved in the manifestation of the corona virus. At this point I would like to mention the shared experiences from our EFOMP president, Marco Brambilla, aiming to make treatments and diagnoses safely available and minimizing the risk to ourselves, family and colleagues:

1. Prioritise tasks that are essential and urgent.
2. Maintain only services that cannot be postponed.
3. Protect workers and staff by risk assessment.



## PRESIDENT'S LETTER



[popmn.org/connected](http://popmn.org/connected)

4. Prevent the spread of the virus further by working from home if possible and only attending clinical locations if necessary and ensuring that staff resources are available for whenever service demands stabilise.
5. Prepare for the anticipated needs of the diagnostic, intensive and critical care services in dealing with this serious respiratory virus.
6. Share your experiences.
7. Support our frontline colleagues who may be undergoing unprecedented workloads in stressful conditions.

Local regulations and other arrangements and strategies may differ and we should follow the advice of infection control and public health experts.

Our private life is also strongly affected. Many things, such as child care for example, have to be organized and panic buying etc. are not helpful to calm down the situation. People in our neighborhood might belong to a risk group or are overstrained with the measures to be taken. We all are prompted to help and support each other in small and big things. Although it sounds like a paradox to keep social distancing and be solidary at the same time, the small signs and attentions

such as video clips of grandchildren are important. Apart from all dangerous aspects of such a crisis, it also generates positive thoughts about the really important aspects of life and social cohesion. Deceleration allows us to focus on major basic issues otherwise just taken for granted and to be thankful again for services and benefits we considered to be self-evident.

Overall, I am confident that together we can overcome this situation. One of the most important issues is to act consistently and to follow the recommendations when our health, the health of those around us and the health of the general population is affected. There are already many individuals with creative ideas to help each other or voluntarily support campaigns. Let's use our ability to look at rational, pragmatic arguments combined with emotional intelligence in this worrisome time. Let's also stick together within our society in our best possible way. A big "Thank you" to all of you for your individual efforts and contributions towards your family, neighborhood and society at large. Thank you all and take care!

Michael K Fix,  
SSRMP president

# PROFESSIONAL AFFAIRS

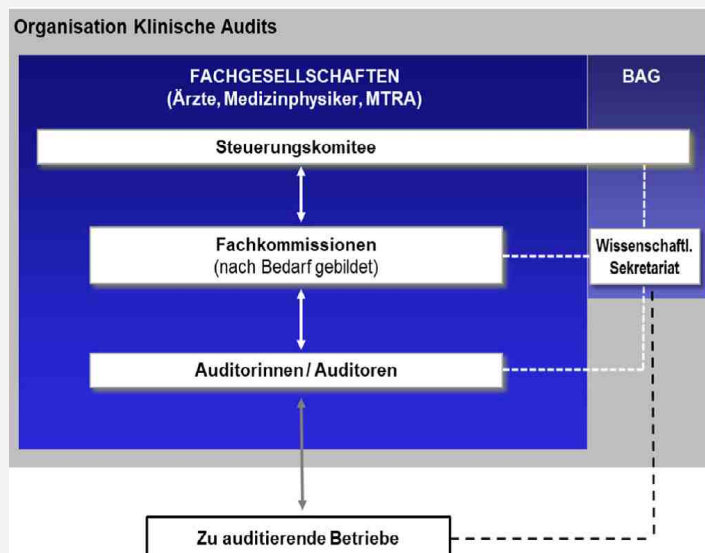
## SSRMP delegate in the Clinical Audits Steering Committee

The steering committee of the clinical audits is responsible for the strategy of clinical audits in Radio-Oncology, Computed Tomography, Nuclear Medicine and Interventional Radiology in Switzerland. It is formed by delegates from all involved professional organisations, namely SGR, SGNM, SSRMP, SVMTRA, SRO, FMH as well as the Swiss Federation represented by FOPH, and as of November 18<sup>th</sup> 2019 also SGK.

Steering committee meetings take place three to four times each year and, after much work involving different parties and discussions in the steering committee during the last two years, the clinical audit organisation structure is now ready for the first round of official clinical audits to begin 1.1.2020.

The following issues have been discussed and decided on during the phase of preparation:

### Organisation



- The organisation structure of the clinical audits has been finalized
- The required IT platform has been established
- Expert panels for all involved specialities have been formed and put into action
- Courses for potential auditors have been organised and took place during 2019
- A kick-off meeting for auditors has been organised in November 2019
- The first institutions to be audited have been chosen at random:
  - Auditor teams have been assigned to those institutions
  - Institutions have been informed of the impending audits
  - Dates have been fixed and communication between lead auditor and institutions established
- Due to the current Covid-19 situation it has been decided, that all planned audits will be postponed until further notice.

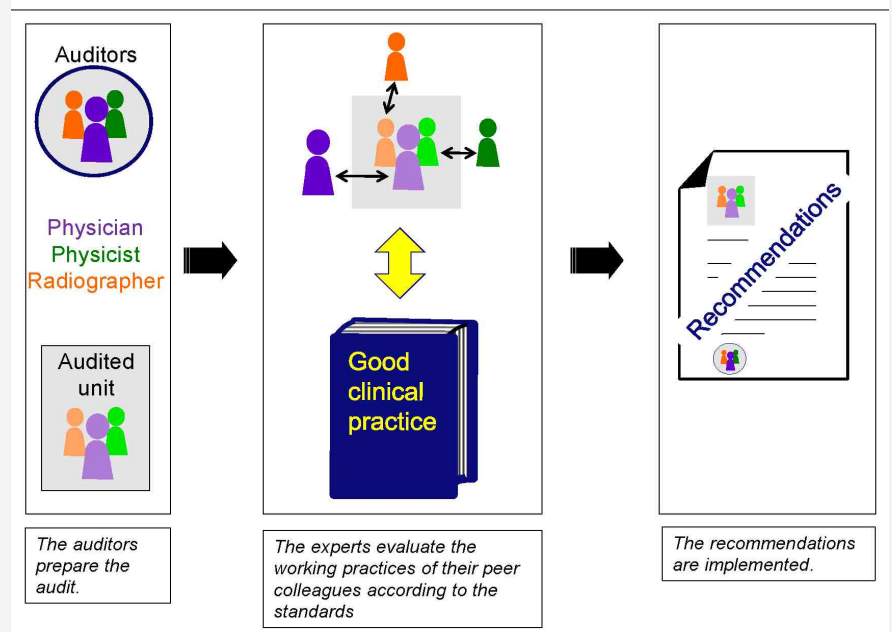
# PROFESSIONAL AFFAIRS

## Approval

o The strategy papers proposed by the expert panels have been accepted for all involved disciplines:

- General strategy and focus of the first round of clinical audits
- Criteria for choosing institutes for the audits
- Criteria for serious findings
- Templates for reports
- Criteria for selection of auditors

- o Recommendations for quality handbooks have been accepted and published
- o Auditors proposed by the expert panels have been accepted.



Status report 24.03.2020

Clinical audit in practice (FOPH)



Yvonne Käser

<http://ssrpm.ch/the-society/board/>

-> Section "Delegates to other societies"

## Do you know your delegate?

Although the SSRMP president is the first representative of the society, the executive board may require the support of additional delegates.

The board shall formally appoints a delegate as representative to another society or an authority's body to act on behalf of the SSRMP.

This article describes the tasks of one of your delegates.



# PROFESSIONAL AFFAIRS

## Invitation to SSRMP salary survey 2020!

Dear colleagues,

As announced at the last SSRMP general assembly in Villigen, the Professional Affairs Committee will organize a salary survey this year during the month of May. The last survey was in 2017. The goal of the salary survey is to provide SSRMP medical physicists with accurate information about salary with regards to a selection of professional conditions in Switzerland.

To provide accurate unbiased data, a significant participation rate is required. For the last survey in 2017, the participation rate was 50%. We hope to confirm or better to improve the participation rate for the 2020 SSRMP survey. In order to favour the participation, the survey consists of few questions and will take only a few minutes to be completed. As in the past, the survey will be web based and each member will receive a unique personal token to access and answer the questionnaire.

### SSRMP 2020 Salary Survey FAQ:

*How many questions are there and how long will it take?*

The 2020 survey has 14 questions and will take about 15 minutes to be completed.

*How difficult is it?*

Do you know your salary? -> you can do it!

*How will the data be kept confidential and how will it be presented?*

An important reason for a simple questionnaire is to make the answers collected more anonymous. In particular, there is no question about gender so the salaries of female colleagues will not be known separately. Ahead of the salary survey, the last report will be sent to all SSRMP medical physicists as a sample to show how the data will be presented. Descriptive statistics, like frequency, median and standard deviation, will be used. The data will not be used for any other purpose or presented in any other way than shown in the sample report. To make sure of this, the execution of the survey will be outsourced to the small company called "it-transforms" (<http://it-transforms.ch/>). The connection between your email address and the survey token will not be visible to anyone from SSRMP, including the board members and the organisers of the salary survey. At the end of the time-frame of the survey, the email links will be deactivated.

*Who will get the results? When?*

All SSRMP medical physicists will have access to the salary survey report and thanks to the simple structure of the survey, we will be able to distribute the 2020 survey results in a short time frame – hopefully before the end of this year.

If you have any questions about the salary survey, please do not hesitate to contact Stefano Presilla or any member of the Professional Affairs Committee.

On behalf of the Professional Affairs Committee,  
Stefano Presilla

# SCIENCE

## SASRO Annual Meeting Announcement



### Save the Date:

24<sup>th</sup>-26<sup>th</sup> September 2020

### Registration:

Registrations will be open soon

<https://www.sasro.ch/sasro-2020/information>

### Congress venue:

PalaCinema Locarno  
Via Conturbio 1  
CH-6600 Locarno

### Congress President:

Prof. Dr. med. Daniel R. Zwahlen, MBA,  
Department of Radiation Oncology, Kantonsspital  
Winterthur

## Next Applied Medical Physics (AMP) Meeting

It is my pleasure to announce the next AMP meeting. This meeting is a general platform for all interested persons in medical physics.

Traditionally, the AMP meeting is split up into two parts. In the first part, a dedicated topic is discussed while in the second part we concentrate on the current state of the different working groups of SSRMP.

Thus, please mark your calendar:

**May 25<sup>th</sup> 2020, 13.15 - 17.00 h, Bern**  
**(for the time being ...)**

Raphaël Moeckli,  
Chair of SSRMP Science Committee and Chair of AMP

# AMP

# SCIENCE

## SSRMP Continuing Education Day: challenges of medical physicists in the operating theatre

Since the new radiation protection ordinance came into force in 2018, medical physicists have also to be involved outside their conventional working settings such as operating theatres and cardiac catheter laboratories. On this year's continuing education day, we address the challenges that medical physicists meet in this new working environment. Attendees will not only learn about the changes associated to revised radiation protection ordinance but will also learn about the methods how the new legal requirements are implemented in different institutions.

Based on presentations about the fundamental functionality of conventional C-arm systems and more complex hybrid systems, different international experts from universities and industry will be invited to discuss with us about the possibilities to implement the ALARA principle in an operating theatre or cardiac catheter laboratory. Last but not least, a special focus will be given to the radiation protection of physicians and caregivers.

### Venue:

Hirslanden Hospital Salem,  
Schänzlistrasse 39, 3013 Bern

### Save the date:

Thursday October 22, 2020  
9am-5pm

### Topics:

- Legal requirements and responsibilities
- Technology and functioning of C-arm systems
- Hybrid operating rooms (fix-installed angiographic and computed tomography systems)
- System control, protocol parameters, dose-saving techniques
- Quality assurance (technical quality control and dose management)
- Radiation protection of medical staff

We are looking forward to seeing you in Bern.

Roland Simmler,  
Head of the radiation protection center  
Hirslanden Hospitals AG

# SCIENCE

## SSRMP Annual Meeting Announcement



**19-20 November 2020**

We are looking forward to seeing you in Thun in Berner Oberland at our 54<sup>th</sup> Annual Meeting. Thanks to your attendance, contribution and to the presence of captivating invited speakers, an attractive and engaging meeting will be held. The presented topics are supposed to show the investigations going on in the fields of medical physics and radiobiology in Switzerland.

Last but not least we will be accompanied by our industrial partners, so that discussions can take place all over the meeting area and time.

### **Save the date:**

19<sup>th</sup>-20<sup>th</sup> of November

### **Abstract deadline:**

30<sup>th</sup> of August

### **Congress Venue:**

Kultur und Kongresszentrum Thun  
Seestrasse 68,  
CH-3604 Thun

### **Registration deadline:**

31<sup>st</sup> of October

Registrations are open:

<https://indico.psi.ch/event/8707/>

On behalf of the organizing committee,  
Daniel Frauchiger

## Clinical Audits - Kick-Off Meeting 18<sup>th</sup> of November 2019, Bern

The new radiological protection ordinance, valid from the 1<sup>st</sup> of January 2018, introduces the concept of clinical audits that had been previously described by the EU in the Euratom directive 97/43 of 1997. This ordinance is the arrival point of a long project started in 2011.

Accordingly, starting this year, all radiology, radio-oncology and nuclear medicine departments can be audited once every five years at most. This is also the case for other divisions where high doses are delivered to patients by fluoroscopy-guided interventional diagnostic or therapeutic procedures, like cardiology for example.

A clinical audit is a peer-review process aiming to evaluate the practices of a department. More specifically, the justification and the optimization of the delivered doses to the patients and the safety of the processes and the personnel will be evaluated. A team composed of a physician, a technical radiographer and a medical physicist of proven experience will conduct the audit. During the preparation phase, they will examine the documentation provided by the audited institution. The day of the audit itself, together with representatives of the department, the auditors will evaluate the procedures followed by the department. Discussions will take place with the management of the department as well as with the head of the involved occupational groups. At the end of the day the auditors will orally present their recommendations to improve the quality of the practices, if needed. A written report will be given during the following month.

The order in which the departments will be audited is determined by drawing lots in the three language regions. The composition of the teams will make sure that no conflict of interest exists between the auditors and the audited department. For instance, auditors should not have worked in the centre during the last 5 years.

Despite the Federal Office of Public Health being the contracting authority, it will be informed of the content of the audit reports only in case of critical issues concerning the radiation protection and the legal provisions.

At the end of each audit cycle, that will last 5 years, the audit results will be evaluated by a different expert committees (one per specialty). These boards will submit their recommendations for the next cycle to the steering committee. The focus of the audits might change, as well as the composition of the teams for example.

As aforesaid, the auditors have been selected according to specific criteria established by the expert committee and they have attended a course on audit methodology. Several courses were organised to cover each linguistic region.

A kick-off meeting for all the nominated auditors took place on November 18<sup>th</sup> 2019, to conclude the preparatory process. It had been organized by the FOPH in its headquarters in Bern. All auditors from all linguistic regions and from all specialties had been invited to review with the principal actors the state of the project and the *know-how* acquired during the courses. In addition, the necessary documentation to perform the audits has been distributed in order to guarantee the same level of knowledge by all the auditors.



# Issues Of Interest



The atmosphere was really pleasant. All auditors were interested and motivated to exchange their opinions, their expectations and also their worries facing this new experience.

The speakers clearly presented all the developments of the project, which started many years ago. The realization of the project was complex and involved many years of work involving the secretariat and collaboration between different professional associations (FMH, SSR, ASTRM, SSRMP, SSNM, CSS and FOPH). The complexity of the Swiss linguistic reality required the organization of an independent system for each linguistic region. An aspect that was evident even during the kick-off meeting, where English was not chosen as a common language and the talks were presented in German and French, sometimes at the same time.

During the meeting, auditors also had the possibility to listen to the experience acquired by the expert committee during the pilot audit phase. They shared the difficulties they faced, still showing that the overall experience was positive.

The audits turned out to be a useful and positive exchange between peers.

Since the beginning of January the machine has started.  
Good luck everyone!

Chianello Michela,  
Medical Physicist, HUG

# Issues Of Interest

## Contagious laughs ... (Part I)

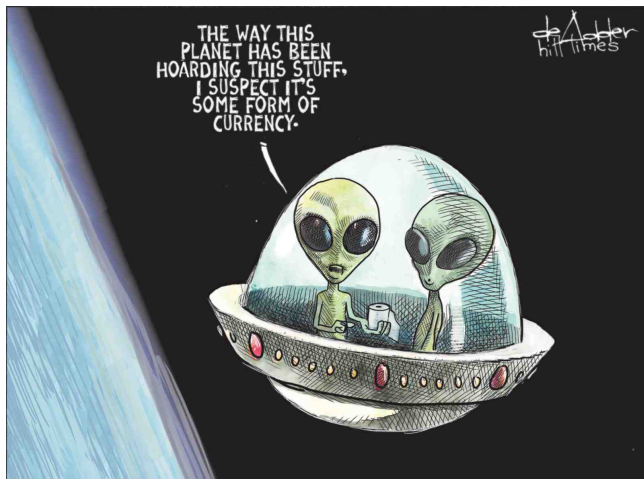
- Husband: You know, one nice part of the quarantine is that we haven't been out spending money.  
Wife: - (clicking 'Add to cart') - So nice ...



- Experts recommend keeping your daily rituals even while working from home.



- In an unsettling reversal of my teenage years, I am now yelling at my parents for going out.
- UK: We demand control of our borders, our borders must be closed.  
EU: There's a horrible global pandemic, you should probably close your borders.  
UK: Well, now we're not doing it.



The CDC has developed a simple test to determine if you are at risk of developing complications from coronavirus. Please examine the following two items. Do you understand the connection between them? If your answer is yes, you are in the at-risk category. Please self-isolate.



- "Why is my sister's name Paris?"  
"Because we conceived her in Paris"  
"Thanks, Dad"  
"No problem, Quarantine"
- Stages of working from home:
  - Yay, I get to work from home!!
  - It would be nice to talk to people ...
  - I hope that pigeon sits in the window today

PhD platform: Reto Küng

## Local-to-global Monte Carlo algorithms for radiation therapy treatment plan optimization and dose calculation in magnetic fields

Most treatment planning systems for radiation therapy use semi-empirical or analytical dose calculation algorithms, which allow fast dose computations. However, the accuracy of these algorithms is limited in certain situations, such as at tissue interfaces with large density changes or when an external magnetic field is present. On the other hand Monte Carlo (MC) algorithms incorporate the basic physical principles for radiation transport and therefore are not subject to the deficiencies of the deterministic algorithms. MC is considered to be the gold standard for accurate dose calculation, however coming at the cost of high computation times.

The goal of this Doctoral Thesis is to increase the efficiency of MC dose calculation algorithms, to develop MC-based treatment planning processes for intensity-modulated proton therapy (IMPT) and Triple Beam radiotherapy (TriB-RT), and to enable accurate and fast dose calculation in magnetic fields for applications in MR-guided radiation therapy.

- Part 1:** In proton radiation therapy, an accurate prediction of the dose distributions is essential and can be achieved by applying MC methods for dose calculation. In order to overcome the limitation of long computation times, a proton Macro Monte Carlo (pMMC) has been developed. The aim of this study is to increase the efficiency of pMMC dose calculation in voxelized geometries by implementing a novel adaptive step size algorithm, where the size of a proton macro step is adjusted depending on local tissue changes. (Manuscript published in Radiation Oncology 2019)
- Part 2:** With efficient and accurate dose calculation for proton, electron and photon beams at hand, not only re-calculation of treatment plans, but also the development of a novel treatment planning process is feasible. The aim of this part is two-fold: firstly, an in-house solution for MC-based IMPT plan optimization is developed and compared to proton plans created by a commercial treatment planning system. The second aim is to develop TriB-RT, a novel treatment planning process with simultaneous optimization of modulated photon, electron and proton beams. (Manuscript under revision)
- Part 3:** The possibility of MR guidance with real-time anatomical feedback is becoming a clinical reality. Although for now current systems are intended for photon radiation therapy, the technical prerequisites for treatment with electron beams are fundamentally provided by the linac design. The aim of this part is to establish a comprehensive experimental and corresponding in-silico setup to determine dose distributions of clinical electron beams in the presence of a magnetic field. (Manuscript submitted 2020)
- Part 4:** Efficient and accurate dose calculation in magnetic fields is essential in context of the developments in MR-guided radiotherapy with photon beams and potential future applications of MR-guidance for electron and proton therapy. The aim of this part is to enable efficient and accurate dose calculation of photon, electron and proton beams in presence of magnetic fields by extending the Macro Monte Carlo (MMC) method for applications in MR-guided radiotherapy. (Manuscript in preparation).

## Interview with the Doctor



### 1. What led you to choose that topic for your PhD?

I was always fascinated by the prospect of using my scientific background as a physicist in an applied field. Additionally, I am very fond of computational challenges and the chance to combine all these aspects in a PhD project was very appealing to me.

### 2. What part of the project have you enjoyed the most?

I had the opportunity to work on a collaborative project with the Australian MRI-linac group. Within the scope of this collaboration, I was given the chance to visit their research group in Sydney for 5 weeks to perform electron beam measurements in magnetic fields to investigate the feasibility of MR-guided electron therapy. This was a unique experience. Moreover, I found the supervision of physics students doing Semester and Master's projects in our division always very fruitful and fulfilling.

### 3. Which part of the project was the most challenging?

Same answer - and I think this is not a coincidence. Isn't it often that the most challenging things end up being the most instructive and enjoyable?

### 4. What kind of impact do you think your results will bring to the med phys society/world etc.?

I believe we have made a relevant contribution to the field by exploring future possibilities of radiotherapy and developing the necessary toolkit for further research. Especially, an electron beam mode in future MR-linac designs or the combination of photon and electron beams with cost-effective single room proton solutions could bring benefits to many patients.

### 5. What are your prospects for the future?

After these four years of mainly research-oriented work, I would like to focus on the applied clinical side of Medical Physics. Working on the frontier of research for future applications has been a great experience. The aspect that got me into the field in the first place was that it's physics, which is applied in daily practice for the good of patients. I'm looking forward to tackling new challenges.

### 6. What would you advise to someone starting a PhD project tomorrow?

Make sure that the coffee maker is fully functional. :-) Joking aside - be critical, be well-organized and ensure that you're surrounded by friendly colleagues who keep stimulating your scientific curiosity.

Reto Küng, Inselspital Bern



# Issues Of Interest

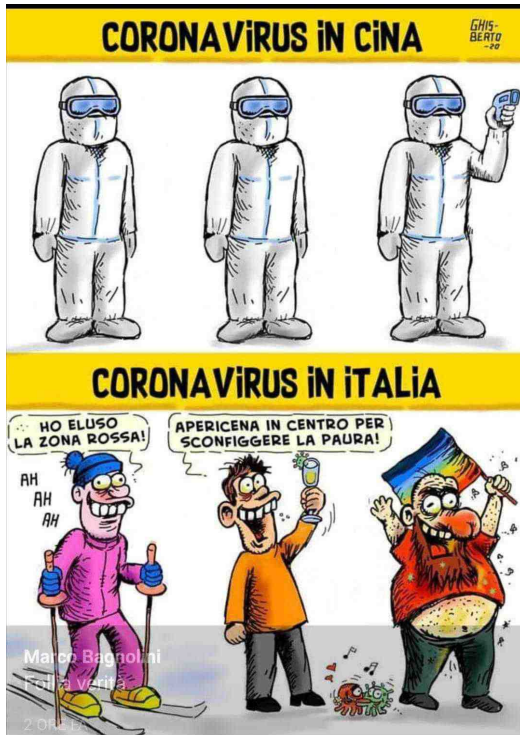
## Contagious laughs ... (Part II)

- We all have *Schrödinger's virus*:

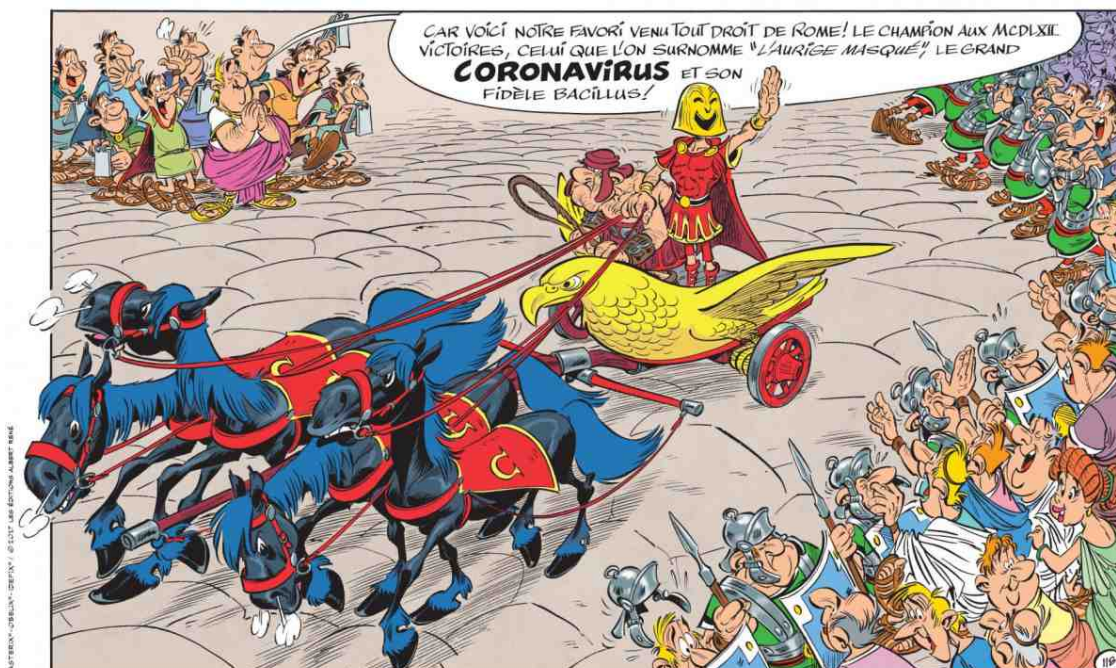
We have to act as if we have the virus so that we don't spread it to others.

We have to act as if we've never had the virus because if we didn't have it, we're not immune.

Therefore, we both have and don't have the virus.



- Ho messo una birra in camera da letto, una in salotto e una in bagno. Stasera faccio il giro dei locali!

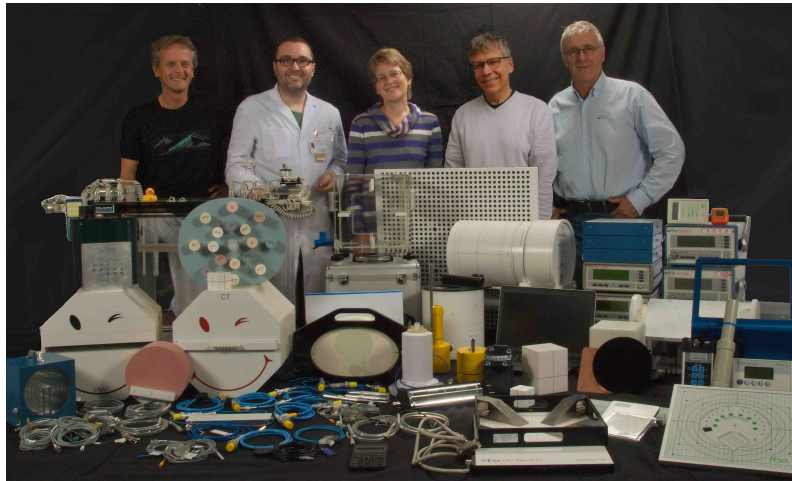


Astérix et la Transitalique (2017)





## Lindenhofspital, Bern



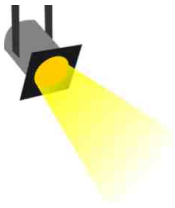
*Team and Tools.*

*From left to right: physicists Hans Neuenschwander, Carlos Calle, Karin Münch; engineers Martin Dux, Kurt Wenger*

The “Krankenpflegeschule Lindenhof” was founded in 1899 as an institution for the education of nurses, owned by the Swiss Red Cross Foundation. The Lindenhofspital was acquired by the Swiss Red Cross in 1907 mainly as a place for the trainees to gather practical clinical experience. Today, the Lindenhofspital is one of the largest private hospitals in Switzerland. It is one of three hospitals (Lindenhof, Sonnenhof and Engeried) in the Lindenhof Group. All hospitals are primary health care providers and also offer a wide range of specialized and highly specialized medical services. The Lindenhof Group is owned by the non-profit foundation “*Stiftung Lindenhof Bern*”, and has strong ties with the Swiss Red Cross Foundation that exist to this day.

Radiation therapy at the Lindenhofspital started in 1966 with a Theratron-60 Cobalt machine and 2 superficial X-ray treatment units. At that time, radiotherapy was a branch of radiology and treatments were administered by the radiologist. In the early 1990s the Lindenhof Foundation decided to build a new dedicated state-of-the-art radiotherapy department. A physician (Armin Thöni) and a physicist (Hans Neuenschwander) were given the opportunity to design and supervise the construction of this new department with two linac bunkers from scratch. In June 1996 the first patient was treated on a modern Clinac 2300C/D equipped with an EPID and an MLC. Physician and physicist had to insist quite a bit to convince the financing powers of the necessity to acquire those two costly pieces of equipment! The staff in 1996 consisted of 1.5 radiation oncologists, 1 medical physicist, 4 RTTs and 1.2 secretaries, a total of 9 persons.

## Spotlight On



Since then, the department has been extended with facilities for a third linac, a total of 6 linacs have been installed and commissioned, 3 linacs decommissioned, 2 simulators came and went, the ancient superficial treatment units were replaced by contemporary equipment, an X-ray IORT treatment unit and a hyperthermia system were introduced, and brachytherapy was raised to a state-of-the-art level with modern HDR-units and the implementation of programs for prostate I125-seed therapy and (for a short time only) intravascular brachytherapy of the coronary arteries.

The last 25 years have been a fantastic journey, witnessing the enormous technical development of radiation oncology, being in the middle of it, implementing a plethora of exciting new technologies on the linacs, starting with EPID MV-Imaging in the 90's, followed by IMRT, VMAT, SBRT and SRS, inter- and intrafraction imaging with OBI/CBCT, intrafraction motion control with RPM respiratory gating and Calypso/OSMS/ABH gating and monitoring. The sophisticated treatment techniques that were made possible by all that technological innovation allowed us to realize an accuracy and individual tailoring of highly conformal patient treatments to a degree that we could only dream of 30 years ago. I'm convinced that the general quality of radiotherapy has made invaluable progress over that time span.

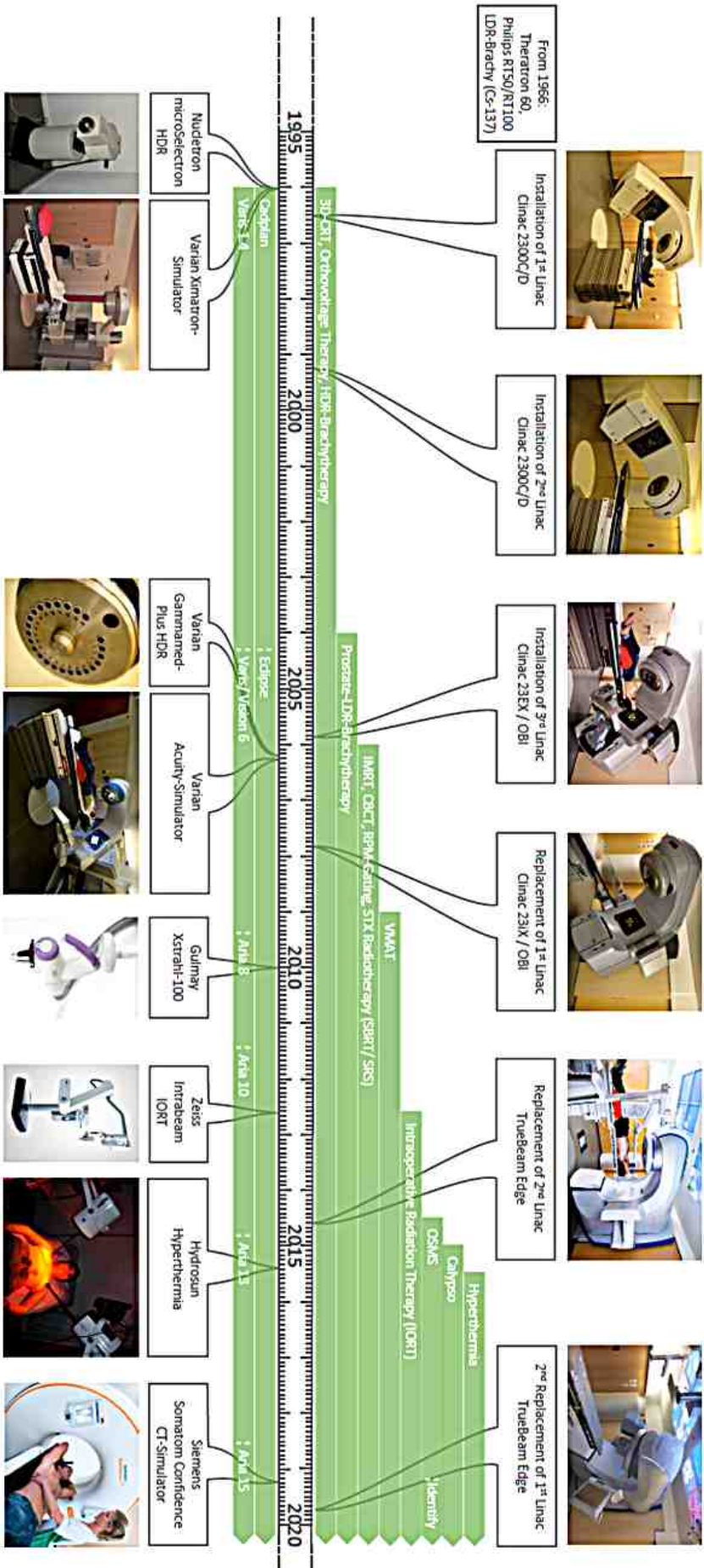
Our goal at the Lindenhofspital always was to offer our patients state-of-the-art radiotherapy treatments on cutting-edge technology, while also trying to maintain a calm and stress-free environment with minimal waiting times for our patients. Therefore, the optimal organization of smooth workflows was of great importance from the start. A very important point in this respect is the fact that we made sure up to now to always have at least two beam-matched accelerators at our disposal, which greatly reduces the difficulties when having to handle a large patient load in case of unexpected downtime of an accelerator.

Today, our team consists of 32 persons (radiation oncologists, medical physicists, technicians, RRTs, MPAs and secretaries). The hierarchical structure of our department is very flat. There's a lot of interdisciplinary consciousness and knowledge available and a lot of interaction happening between the different professional groups, also resulting in mutual appreciation of each other's work.

With about 1100 treated patients and 20'000 treatment fractions per year on the linacs we're running quite a busy department, with roughly 100 patients per day visiting for treatment or preparatory work. We're also the center with the largest number of prostate seed implant patients and the largest yearly number of superficial hyperthermia treatments in Switzerland.

Hans Neuenschwander  
Lindenhofspital, Bern

Timeline of equipment and procedures



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## Call for Authors

Also, you are invited to participate in the construction of our bulletins. Of desirability are all contributions that could be of interest to members of our society, such as

- Reports of conferences, working group meetings, seminars, etc.
- Reports on the work of various committees and commissions
- Succinct results of surveys, comparative measurements etc.
- Short portraits of individual institutions (E.g. apparatus equipment, priorities of work, etc.)
- Reports on national and international recommendations
- Short Press Releases
- Photos
- Cartoons & caricatures
- Announcement of publications (E.g. books, magazines)
- Announcement of all kinds of events (E.g. conferences, seminars, etc.)
- Short articles worth reading from newspapers or magazines (if possible in the original)
- Member updates (E.g. appointments, change of jobs, etc.)

The easiest way to send your document is as a MS Word document via email to one of the editor addresses above.

**Deadline for submissions to Bulletin No. 98 (02/2020): 07.2020**



# SSRMP Board

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# Conference Calendar

## CALENDAR 2020

- May 25**  
Bern  
SSRMP Applied Medical Physics Meeting  
<https://ssrpm.ch/event/amp-meeting-june-2020/>
- July 12**  
Vancouver, CAN  
Joint AAPM & COMP Meeting  
July 12 - July 16  
<https://w3.aapm.org/meetings/2020AM/>
- July 15**  
Wien, AT  
European Congress of Radiology 2020  
July 15 - July 19  
<https://www.myesr.org/congress/>
- July 31**  
Wien, AT  
ESTRO Meeting 2020  
July 31 - August 4  
<https://www.estro.org/Congresses/ESTRO-2020/>
- September 6**  
Taipei, Taiwan  
Particle Therapy Co-Operative Group  
September 6 - September 11  
<http://www.ptcog59.org/>
- September 9**  
Leipzig, DE  
51. Jahrestagung der DGMP  
September 9 - September 12  
<https://www.dgmp-kongress.de/>
- September 23**  
Turin, IT  
3<sup>rd</sup> European Congress of Medical Physics  
September 23 - September 26  
<http://www.ecmp2020.org/>
- September 24**  
Locarno  
24<sup>th</sup> Annual SASRO Meeting  
September 24 - September 26  
<https://www.sasro.ch/2020/>
- October 22**  
Bern  
SSRMP Continuous Education Day 2020  
<https://ssrpm.ch/event/ssrpm-continuous-education-day-2020/>
- October 25**  
Miami, FL  
ASTRO Annual Meeting 2020  
October 25 - October 28  
<https://www.astro.org/Meetings-and-Education/Live-Meetings/2020/Annual-Meeting/>
- November 19**  
Thun  
54<sup>th</sup> SSRMP Annual Meeting  
November 19 - November 20  
<https://indico.psi.ch/event/8707/>



And please, if you participate in any conference or meeting, think of writing a few lines or sending a picture for the Bulletin.

THANK YOU!