

BULLETIN

December 2021





Letter from the Editors

Dear SSRMP members,

a very special image opens this issue of the Bulletin. The semi-digital sundial thought out and developed by SSRMP honorary member Léon André and exposed in Liebfeld Park, Bern (more info at: <http://www.sun-watch.ch/>) is perfect emblem of this particular moment of the year. A moment, in which we are typically “pushed” to reflect about the time that has passed, how we have used it, what we have achieved, what goals do we have for the future.

On the same token, the Bulletin opens with the traditional reports of the SSRMP committees’ activities and achievements (including the Varian Awards) written by the respective chairs. It always surprise me to realize how much and how many people are working in the background on different tasks and topics. I dare say that the 2021 special goes to the agreement between BAG and SSRMP on a list of recognised courses ensuring the famous 8 radiation protection units necessary to renew the medical physics certification.

Personally, I believe this issue presents with an Issues of Interest section that deserves the *Hall of Fame*. We have 3 conference reports. Interestingly, two of them are reports from SSRMP or SSRMP/SRO continuous education days. It seems that there is a general satisfaction on the quality of these courses. I almost wish to be preparing for my SSRMP certification exams again ;) I also have the impression that these articles have a quite scientific focus and don’t lack the quality of information that a good part of the readers expects from conference reports.

This brings me also to mention that the editorial team have done a tentative analysis on the results of the survey that was distributed in mid October on the contents of the SSRMP Bulletin. Thanks to everybody who participated and shared their opinions and ideas, helping us to steer the management of the Bulletin one step closer to the readers’ needs. I invite you all to read through the results.

To close the Issue of Interest, a very exciting SpotLightOn, for once focused on machines and projects that are maybe less familiar to the majority of

people; and a Personalia full of interesting colleagues all working (or on the move) at KSA-KSB. To read through their short *life’s resumé* has been very refreshing and helpful to “connect some dots” and for the first time have a clear picture of an entire group of medical physicists working in the same centre. Thank you so much to the team of KSA-KSB!

The contents of this Bulletin demonstrates that this has definitively been a busy and interesting year with its share of challenges. And more have already claimed their place for the upcoming months, what with implementing MR-only workflows, AI for auto-delineation, ART in all its forms, FLASH, the climate change, the old and the new Covid-variants ...

I hope that each one of you can look back to the achievements of this year with a sense of accomplishment and I’m very curious to see where all the current turmoil is leading us next year!

Francesca Belosi,
On behalf of the Editorial Team.

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Cover Image: "Léon André's lockdown project". Semi-digital sun dial in Liebefeld Park (Bern) developed by SSRMP honorary member Léon André during Spring lockdown 2020 - <http://www.sun-watch.ch/>

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PRESIDENT'S ANNUAL REPORT

Dear colleagues,

After many months of countless online meetings and many online conferences, I am more than happy to see not only your faces on the screen but rather your physical full-size head-to-feet profile.

With special efforts, last year's general assembly was also switched to online, since the planned annual meeting supposed to be held in Thun had to be cancelled due to Covid. It was especially challenging as elections were due. Luckily, we found a suitable online election tool. Despite some unknowns, the general assembly, including the elections, smoothly went through using zoom and *polyas*. Thanks to all the board members for being creative and participating in countless test sessions. In addition to the re-elections of all previous board members, Jérôme Krayenbühl was elected as the new chair of the education committee and Maud Jaccard was elected as a new board member.

This year's general assembly is also special as it comes along with our traditional continuous education day. This time the topic is "*Challenges of medical physicist in the operating theatre*" and there are many... I would like to thank the organization team: Alexander Schegerer, Stefano Gianolini, Roland Simmler and Nick Ryckx for their second attempt to organize this day and I would like to congratulate them for the great work! Definitely a highlight.



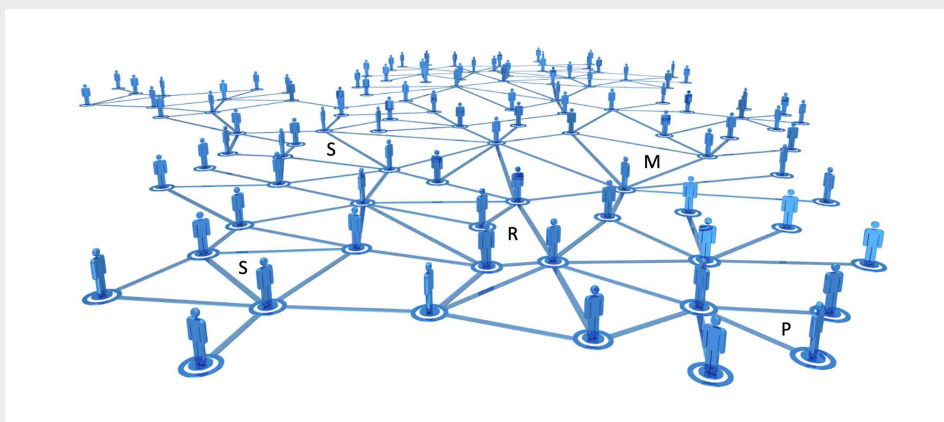
Within the last year the board held 6 online board meetings. As in previous years, many different topics were discussed and can be summarized as follows:

- Two online AMP meetings
- SSRMP continuous education day
- Support of SSRMP working groups
- Discussions with FOPH
- Joint Conference of the ÖGMP, DGMP and SSRMP
- Contract with Elsevier as publisher of ZMP
- Collaborations with other societies
- Varian prize

In the last year, two AMP meetings took place via zoom. Last December Francis Verdun presented the results of the national survey on dose in radiology performed by IRA in collaboration with the High School of Health Vaud and the FOPH, being this also part of a Swiss legal requirement aiming at assessing the impact of medical imaging on the exposure of the population. Among many interesting information and statistics, he reported that over 10.5 million of



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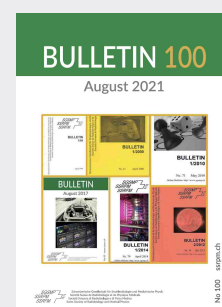
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diagnostic examinations using ionizing radiation were performed per year and although the number of CT acquisitions increased by 15% their contribution to the averaged effective dose per person remains constant.

This presentation was followed by reports of our well-known SSRMP TLD intercomparison, which in my opinion is an excellent SSRMP activity, especially as we have been performing this comparison for so many years. Results demonstrated high quality dosimetry standards throughout our radiotherapy centers. At this point I would like to give special thanks to Thierry Buchillier and Claude Bailat for their efforts in organizing the intercomparison. In addition, supported by an SSRMP research grant, Hans Schiefer and Simon Heinze performed a TLD intercomparison for Tomotherapy demonstrating the value of this intercomparison method.

Furthermore, SSRMP recommendations and reports are discussed and finalized at our AMP meetings. Last year one report and two recommendations were compiled by different SSRMP working groups and were discussed at our second AMP meeting: report 21 is about the use of patient shielding in radiological procedures and was recognized by the KSR and endorsed by the Swiss Society of Radiology. This appreciation demonstrates the great work of the working group. In a next step we look forward to collaborating with the FOPH on this topic in the "Radiation protection for patients" working group supporting the creation of a dedicated guideline; the recommendations with respect to quality assurance of systems for stereotactic ablative radiation therapy and eye lens dosimetry are the results of huge efforts by medical physics experts in the field. I would like to thank Natalia

Saltybaeva, Andreas Mack and Marta Sans Merce who chaired these working groups as well as all working group members. I would also like to take this opportunity to thank the members of the science committee, especially as the last year was very intensive in reviewing tasks.



Another great highlight for me was the century issue of our Bulletin. I really enjoyed reading this issue and

follow again the transitions of the Bulletin over the years. This gives me the opportunity to thank the current editorial team Francesca Belosi, Shelley Bulling, Nathan Corradini together with Jean-Yves Ray for creating one high quality issue after the other. You have been doing an awesome job for many

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years and I understand this is exhausting. So, the editorial team is looking for new creative motivated editors to shape the Bulletin in the future. Please, all of you feel free to join!

Last year the new concept for the radiation protection training was set in place. In a follow up discussion, the handling of the continuous education in radiation protection required by the radiation protection training ordinance was discussed with the BAG. Shortly an agreement was achieved and SSRMP has received a license from BAG to define what to recognize as continuous education in radiation protection. In addition, the compliance with this requirement is incorporated into the renewal of the SSRMP board certification. I would like to thank especially Regina Seiler for her efforts spent on this topic. Personally, I think this is a milestone and a huge benefit to our members.

During this year many discussions and online meetings with our partner societies DGMP and ÖGMP took place. One of them was the Dreiländertagung with ÖGMP as leading society. Although I mentioned last year that the conference was planned as a physical meeting, in the end the decision for an online meeting was taken. Nonetheless, Dietmar Georg

and Wolfgang Birkfellner prepared a great program and the technical support was outstanding. However, even though the organizers and all chairs provided a high level on motivation to actively participate, the interaction was very limited.



The finalization of the new contract with Elsevier as publisher of our society journal ZMP was another topic to discuss with DGMP and ÖGMP. The aim was to transfer ZMP into an open access journal. An agreement was reached with Elsevier for a two-phase transition approach. In summary: in the first phase covering the next two years, all publications will be open access without any authors publication fee and each member will receive a printed copy. The societies support this with a fixed amount of money. In the second phase, the typical setting of an open access journal will be installed, with an author publication fee and ideally an online-only journal. However, there is a discount for members of the societies and other contracts from Elsevier covering the publication costs. By this, ZMP is on a good way and prepared for further developments. Finally, I would also

like to appreciate all the work from the editorial board of ZMP as well as from the authors based on which an outstanding impact factor of 4.82 was achieved.

There are many other interactions with partner societies such as the collaboration related to the Swiss Congress of Radiology to name just one. SSRMP now regularly participates in the scientific committee and is involved in defining the conference program in the form of different joint sessions. While the SCR'21 has been split-up in different online session types such as webinars or scientific journal clubs, which I can recommend to participate, the next SCR'22 is to be held physically in Fribourg and is in its final planning stage. I would like to encourage you to actively participate by submitting abstracts as currently the call for abstract is open.

In summary, I want to point out the very constructive, balanced and supportive collaboration with all these societies, which I think is an important aspect for SSRMP.

Apart from the activities already mentioned, there were many more activities going on over the last year and I would like to point to the dedicated reports by the three permanent committee chairs for more information about these SSRMP topics. At this point a

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special thank you to all the chairs of these committees, namely Jérôme Kraysenbühl (education chair), Jean-Yves Ray (professional chair) and to Raphaël Moeckli (science chair). All of them spent countless hours during the year to make it look very smooth.

In addition, I would like to thank all the board members for their engagement. SSRMP can not only constantly count on the committee chairs but also on Stefano Gianolini, Maud Jaccard, Yvonne Käser, Roman Menz, Markus Notter, Stefano Presilla and Regina Seiler.

Overall, and at least in my opinion, we built quite a good team together. All of them are not surprised anymore, when I request their support, short term assistance, opinions etc. I really appreciate all your help. So again, a great thank you!

It is obvious that so many more members actively support SSRMP and deserve a big thank you. This includes members involved in different roles: delegates, working group chairs or members, mentors, authors, lecturers and many other

different engagements supporting our society and medical physics.

Well, in case you feel not busy enough or have some energy left, join the stage and serve SSRMP. You are welcome!

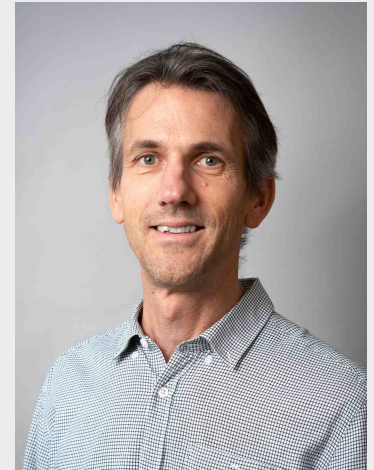
Finally, I thank you all and I wish you all the best. Take care, stay healthy, and see you soon.

Michael K Fix,
SSRMP President



PROFESSIONAL AFFAIRS

Professional Affairs Committee Annual Report



Dear colleagues,

most of this year was still impacted by the pandemic situation. However, slowly we could also come back to our daily business even if mainly through virtual meetings.

The professional affairs committee welcomed **Stefano Gianolini** at the beginning of the period as an additional member to the group. Along with **Roman Menz** and **Stefano Presilla**, we are involved in the executive matters of SSRMP along with our colleagues in the board.

The committee includes the editorial team of the **Bulletin**. **Francesca Belosi**, **Shelley Bulling**,

Nathan Corradini and I managed again to publish three issues over the past term. The last issue was very special celebrating **Bulletin n°100**. Thanks for their great effort, and that of many other colleagues. We hope you enjoyed this outstanding issue and in particular, the interviews of three peers in our profession who revisited for us the changes and evolution in the role of the medical physicist.

Having been assembling and publishing the **Bulletin** for many years, the editorial team deserves relief. Their great commitment to provide the members and the larger community with attractive contents has been very well appreciated. We are looking for fresh-minded colleagues who are keen to take on

a new challenge and to continue the **Bulletin's** adventure. Don't be afraid, get in touch, the whole team will support you.

It is also for this purpose that we launched a survey to collect the members' expectations regarding the content of the **Bulletin**. The results show the value you place on regional information. A more detailed analysis is published in this issue. Thanks to all of those who supported us by participating.

A significant part of the committee's resources is devoted to running the society's digital platforms to provide you and the medical physics community with useful and valuable information. The **Newsletter**, mainly focused on society's activities and

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related partners, and the Biweekly News, focused on recent job posts and latest news, have been running for more than two years and one year, respectively. Although intended to be distributed regularly, we only send them out when useful. The newsletters seem to meet the interest of the members with an average consultation rate of 50%.

The society's websites also need continuous updates to remain a useful resource for the community. A new page has been published with a list of future and past courses/conferences that are recognized as continuous education in radiation protection. The job market was still attractive this year with more than 20 job adverts

posted. We are doing our best to offer you an attractive calendar of events. Here as well, we call for additional enthusiastic volunteers willing to take over the management of communication platforms. Making them evolve for the younger generation who is more active on social networks could be an attractive project for one or more of you. Do not hesitate to contact me!

The committee supports and collaborates with the delegates to the EFOMP, Sara Alonso and Elina Samara, and Marta Sense Merce on the MEDIRAD project. We try to draw your attention to topics of interest and opportunities concerning them. They are of

course all available to answer your enquiries. I would like to express our gratitude for their commitment to our society.

Finally, I would like to thank the members of the committee who have made all this work a reality and acknowledge all your voluntary participation and involvement in the many activities that make up our society.

On behalf of the committee for professional affairs,

Jean-Yves Ray,
Chair of the PA committee

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Scientific Committee Annual Report



Dear colleagues,

the scientific committee is composed of T. Buchsbaum, M. Jaccard, P. Manser, M. Pachoud, S. Scheib, S. Tanadini-Lang and R. Moeckli.

Working groups (WG) have been very active during this year. The “SRS” WG (A. Mack) finalized recommendations for stereotactic treatments, the “Eye lens dosimetry” WG (M. Sans Merce) also finalized recommendations on that topic and the “Reference dosimetry” WG (M. Aspradakis) submitted a revision of Recommendations Nr.9 to the science committee for review. I would like to express my deep gratitude to the chairs of the WG and to all the participants for the time they spend to contribute to our society. I also warmly invite anyone who is interested in joining

a working group to contact the chairperson of the relevant group. The list of working groups and chairpersons is on our website (www.sgsmp.ch).

Two AMP meetings took place this year. They were held virtually and it remained as usual the place for discussions concerning different topics of medical physics. As a reminder, the AMP meetings are open to any member.

The 2021 SSRMP intercomparison showed good global results concerning the photons beams. All (85%, resp.) tested beams were within $\pm 4\%$ ($\pm 2\%$, resp). No significant difference was observed between FF and FFF beams. I thank T. Buchillier and C. Bailat for their continuous work for the annual SSRMP intercomparison.

No application for the SSRMP grant was received this year. As a reminder, the SSRMP grant can be awarded for up to CHF 7'000.- (see additional information in this Bulletin).

I would like to end this short report by acknowledging my colleagues of the science committee for their intensive work performed in reviewing the different documents that have been submitted to us. This year and last year have been heavily loaded with work and I am very grateful for the time they spent for the society.

Raphaël Moeckli,
Chair of the Science committee

Results of the TLDs Intercomparison for Megavoltage Units 2021

1. Introduction

The Institute of Radiation Physics (IRA) in Lausanne is mandated by the Swiss Society for Radiobiology and Medical Physics (SSRMP) to organize an annual dosimetry intercomparison for the gantry driven linacs. The 2021 intercomparison followed the same procedure and used the same equipment to carry out the measurements as previous years. The aim was also the same i.e. to check the absolute dosimetry. This year, again, we focused only on static photon beams.

Thirty institutions took part to the 2021 intercomparison with a total of 132 beams checked, including 81 conventional beams with flattening filter (FF) and 51 flattening filter free beams (FFF).

Similar to past audits, the requirement was to check each photon energy used in the institution only once. For example, if two machines are matched, only one machine had to be checked. Similarly when two machines are equipped with a 6X beam, only one has to be checked.

2. Materials and methods

The same TLD discs (4.5 mm diameter, 0.9 mm thickness, Harshaw Inc.) and solid water phantoms as those for the photon dosimetry intercomparisons of 2011 to 2020 have been used. The solid phantom was composed of two stacked Perspex phantom frames. The inner square was 4 cm in length, the outer square 10 cm x 10 cm. The frames have been filled with five plain RW3 (PTW Freiburg) slabs, and one slab containing three TLD. The slab dimensions are 40 mm x 40 mm x 10 mm. The phantom was placed on Perspex or water equivalent material (at minimum 5 cm). This arrangement is shown schematically in Figure 1. Each TLD slab contains 3 TLD chips located on a circle 5 mm away from the center.

The measurement depth in solid water was 5.55 cm. A correction was applied on the TLD reading to account for the slight difference between solid water and water. For this reason, the user was asked to assume that the phantom was fully water equivalent and provided for sufficient scatter, as it would be the case in a large water phantom.

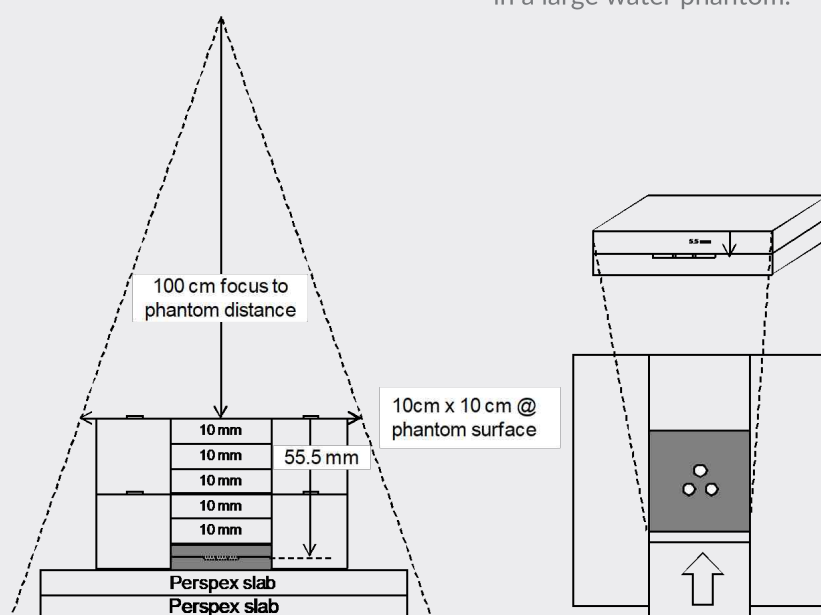


Figure 1. Assembly of the measurement equipment for photon beams: phantom and (closed) phantom frame

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A TLD annealing oven and a Harshaw 5500 reader have been used, similarly to earlier intercomparisons. Thanks to the cobalt-60 irradiation facility available at IRA in the calibration laboratory, we could use a less time consuming procedure insuring the appropriate metrological traceability. In the years 2017-2020, we calibrated the cobalt irradiator in terms of absorbed dose to water for a given radiation quality against the IRA reference dosimeter for photons calibrated at METAS.

This year, a direct calibration of the TLD dosimetry system was carried out at METAS. The IRA cobalt irradiator calibration was achieved by means of two series of TLD. One series were irradiated at METAS in the solid water phantom in the intercomparison conditions using the 6, 10, 15 and 18 MV beams of the Microtron accelerator. The reference value of the absorbed dose to water was determined with the secondary standard in a water phantom in the same geometrical conditions. The other series of TLD were irradiated at IRA with the cobalt irradiator in the calibration laboratory for a known time duration. Then these two series of TLD have been read in a same batch and this provides the link between absorbed dose to water in a water phantom and the exposure time on the cobalt irradiator (for each radiation quality). This allows us to prepare reference TLD at IRA for each series of measurements in the participant's beams.

This calibration at METAS, carried out in June 2021, after the intercomparison, resulted in an increase of the dose measured by TLD of 0.3% for 4-10 MV and of 1.0% for 15-18 MV. This is why the participants could observe some differences between the preliminary and final results of the intercomparison. Furthermore, IRA participated in May 2021 to the IAEA blind test and reference irradiations offered to the dosimetry audit networks (DAN). The radiation

qualities were Co-60, 6 MV, 10 MV and 15 MV. The agreement between TLD and certified dose was within +0.2 and -1.4%. Although the measurement conditions were slightly different from those of this intercomparison (requiring some corrections), this represented a validation of our TLD dosimetry system.

The absolute dosimetry with TLD requires several corrections: non-linearity of the TLD response with dose, dependence on photon energy and fading effect. The non-linearity and fading corrections have been carefully determined at IRA. The energy dependence of the TLD response is included in the calibration of the cobalt irradiator. The correction associated to the replacement of the water phantom by the solid water phantom is also included in the calibration of the irradiator.

For the intercomparison irradiations, the measurement conditions in the solid phantom were as follows: source to surface distance 100 cm, field size 10 cm x 10 cm at the surface of the phantom, dose to the TLD close to 1.00 Gy. The participants were expected to provide their own value of dose (stated dose), specified at the measurement depth (5.55 cm).

Five runs of measurements were necessary for the 30 participants. A calibration of all the TLD was carried out before and after each run, in order to determine precisely the individual sensitivities of all the TLD chips. For each run, a series of 10 TLD ("reference TLD") in each group of 50 TLD were irradiated to the reference dose of 1 Gy at the cobalt irradiator on the irradiation date recommended to the participants. Then these 50 TLD were all read in one batch and the dose delivered to every chip was calculated from the ratio of its indication to the mean indication of the 10 reference TLD. Finally, the corrections mentioned above were applied.

3. Results

The agreement between the stated dose and the TLD measured dose is evaluated with the ratio “stated/measured” (noted D_s/D_m) and taking into account the TLD measurement accuracy. For photon beams, an agreement within 4% is considered a satisfactory check.

We checked 81 conventional beams with flattening filter (FF) and 51 flattening filter free beams (FFF).

The obtained average ratio for the different photon beam types and energies is given in Figure 2 with the standard deviation. This repartition seems to show that all deviations from the unity can be attributed to statistical fluctuations. The distribution of the D_s/D_m ratio for all the photon beams is illustrated in Figure 3. The statistics of the D_s/D_m ratio for all the photon beams are given in Table 1.

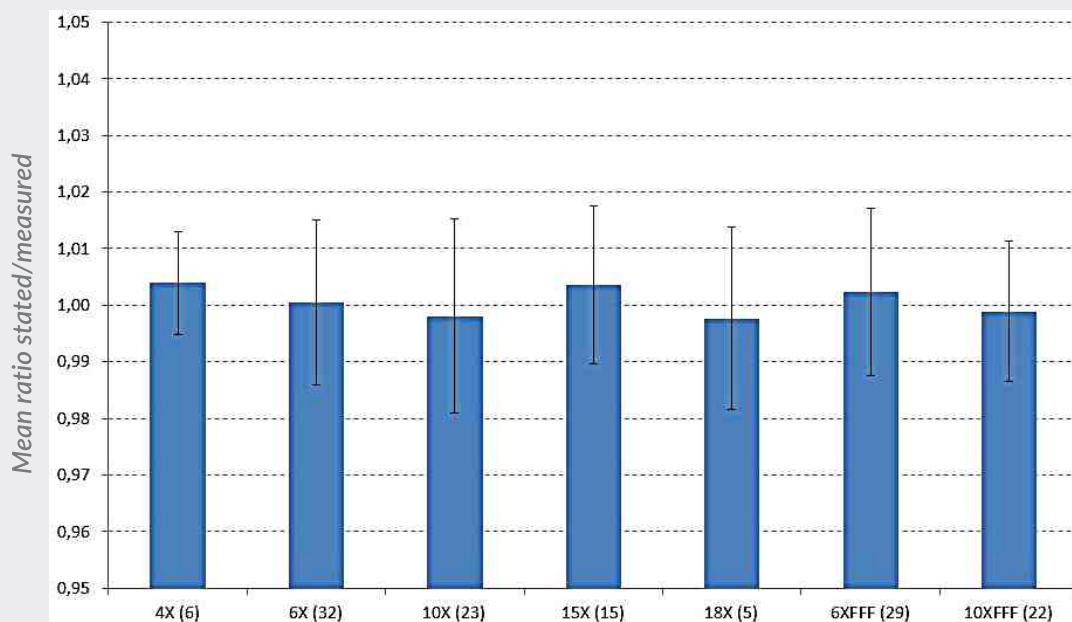


Figure 2. Mean D_s/D_m values for the different radiation qualities. The number of beams is given in brackets. Errors bars=std dev.

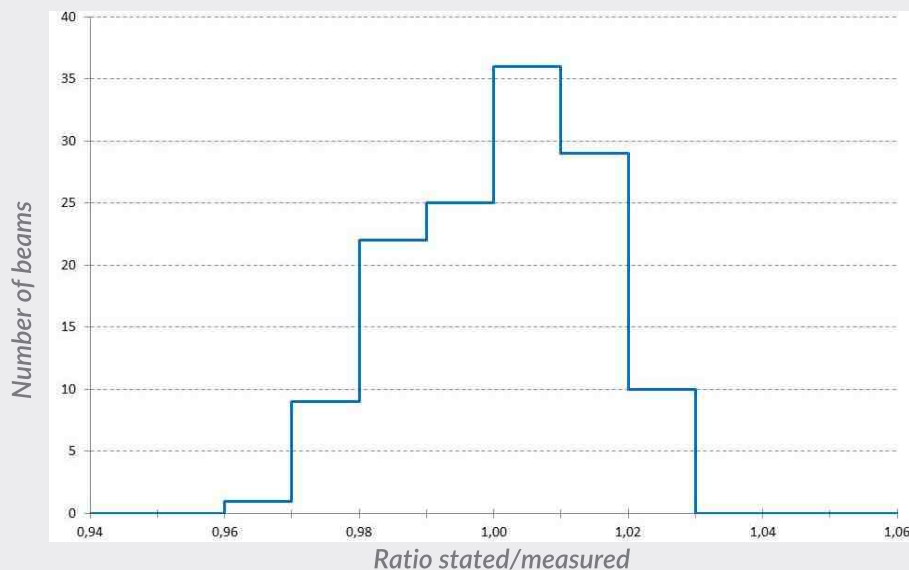


Figure 3. Histogram of D_s/D_m values for all 132 photon beams

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Parameter	FF Beams	FFF Beams	Both types
Beam number	81	51	132
Mean	1.000	1.001	1.001
St. Dev.	1.5%	1.4%	1.4%
Minimum	0.961	0.976	0.961
Maximum	1.026	1.027	1.027

Table 1. Ratio D_s/D_m (FF=conventional beams with flattening filter, FFF=flattening filter free beams)

The mean value of D_s/D_m for all beams is 1.001. There is no significant difference between the mean values of D_s/D_m for FF beams (1.000) and FFF beams (1.001).

For all tested beams (100%), the value of D_s/D_m is in the interval 0.96-1.04, i.e. within 4%, which is judged satisfactory. In addition, 85% of the results are in the interval 0.98-1.02, i.e. within 2%.

Although no value of D_s/D_m was beyond $\pm 4\%$, one participant asked for a second measurement of his beams after checking the dose with his ionization chamber. The verification with TLD showed a deviation of 3% with respect to the first measurement. No problem was discovered in the dosimetry. In principle, the probability is low that this deviation is due only to the normal fluctuations of the TLD signal. Indeed these fluctuations have been investigated for the uncertainty evaluation and the observed standard deviation was low.

Uncertainties

The uncertainty on the dose measured using TLD includes the contributions due to positioning of the phantom in the beam, reading procedure of TLD with all influence quantities and reference in absorbed dose traceable to METAS for the cobalt irradiator at IRA. The uncertainty budget is given in Table 2.

The contribution coming from the procedure with reference TLD and measurement TLD was determined using a statistical method. The fluctuations of the ratio of three measurement TLD over ten reference TLD were analyzed for at least six irradiations of 300 TLD.

The combined standard uncertainty is obtained by quadratic summation. For photons, it amounts to 1.23% for each measurement with 1 slab containing three TLD, and 1.16% for the mean of 2 such measurements. For the expanded uncertainty we adopted only one figure of 2.5% ($k=2$) for simplicity.

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Contribution	Comment	Photons std. unc.
Positioning	± 1 mm	0.2%
Co-60 irradiator calib.	-	1.05%
Energy response of TLD	-	0.1%
Stat. fluctuations of meas.TLD/ref.TLD	Type A eval.	0.6%
Non-linearity	all doses 1 Gy	0.05%
Fading	t < 3 days	0.10%

Table 2. Uncertainty budget for the absorbed dose measurement with TLD. The contributions are given at the level of one standard uncertainty

Dosimetry protocol

All participants carried out the reference dosimetry using the SSRMP recommendations No. 8, or the IAEA TRS-398 protocol, with the exception of the CyberKnife, the Novalis, the Radixact and a linac dedicated to total body irradiation.

Reference dosimetry for FFF beams

The participants were asked if they corrected the dosimeter value for the effect of volume averaging during the reference dosimetry at the beam commissioning. According to IAEA TRS-483 protocol, the corrections to apply for FFF beams include in fact two contributions: the correction factor for the difference in water to air stopping-power ratio and the volume averaging correction factor. Two participants applied such corrections for a conventional linac and for a PTW-30013 chamber. The first correction factor amounts to 0.9990 for 6XFFF and to 0.9966 for 10XFFF beams, and the second one amounts to 1.0016 and 1.0038 (mean values). One can see that these two corrections almost cancel out. One participant mentioned total corrections of 0.998 and 0.997 for 6XFFF and 10XFFF.

4. Discussion and conclusion

The dosimetry of 132 beams has been checked. The results of the 2021 TLD dosimetry intercomparison are good. All the checked beams met the satisfactory criteria of $\pm 4\%$ and 85% were within $\pm 2\%$.

We thank Dr. Peter Peier and Dr. Franziska Frei for giving us access to the beams and the reference dosimetry at METAS for the calibration of the TLD dosimeter system.

We thank also all the medical physicists for their participation and for their excellent collaboration.

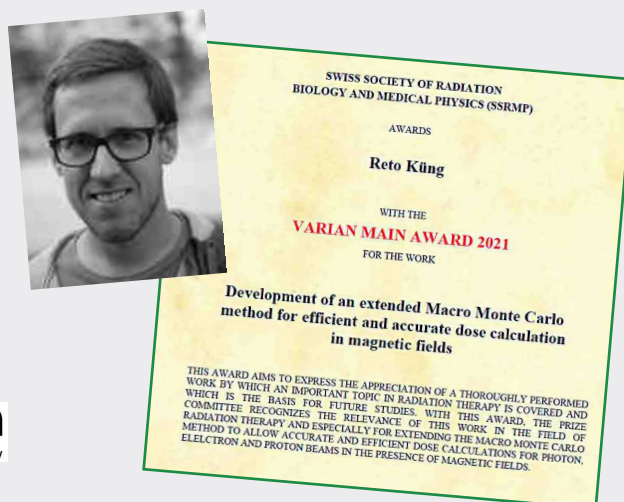
Thierry Buchillier and Claude Bailat,
CHUV - Institut de radiophysique (IRA)
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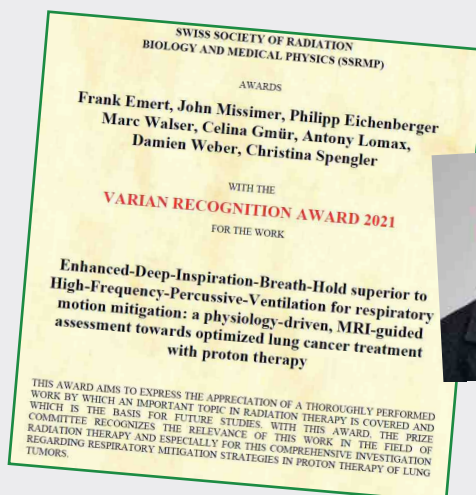
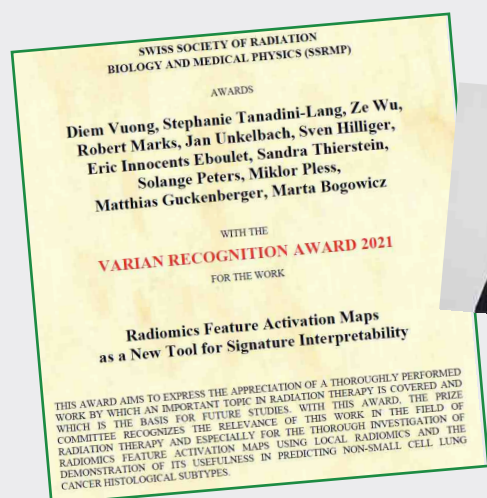
Varian Award 2021

At the general assembly on October 25, three publications were awarded.

One publication received the **Varian Main Award of Radiation Oncology** of SSRMP:



and two publications received the **Varian Recognition Award of Radiation Oncology** of SSRMP:



We congratulate the winners and thank them for the important work. In addition, we thank Varian Medical Systems for their support.



Raphaël Moeckli,
IRA and CHUV, Lausanne
President of the Varian Prize Committee

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SSRMP Research Grant 2022

In order to support and promote the scientific activities of our members in Switzerland active in all fields of Medical Physics, a research grant is provided by SSRMP. As in the last years, a financial grant of maximum **7'000 CHF** is offered for research projects fulfilling proper eligibility criteria.

The projects should:

- be promoted by at least one regular member of SSRMP
- be conducted entirely in Switzerland in one of the private or public institutes active in the field
- preference will be given to projects involving more than one institute aiming to a trans-linguistic and trans-cultural cooperative model
- be strictly linked to a field of interest of SSRMP
- be completed within the time span of one year from grant assignment.

The group that will be awarded with the grant will have to provide the SSRMP Science Committee with a detailed report (inclusive of costs justification) at the end of the one-year period and will guarantee the publication of a scientific report in the SSRMP Bulletin. The scientific report should be, pending scientific committee's review and approval, submitted for oral contribution to the annual SSRMP meeting.

Deadline for submission of proposals is June 30th 2022.

Proposals should not exceed four A4 pages and should contain:

- project title, duration and financial request
- principal investigator's and co-investigator's names and responsibilities in the project
- short description of the scientific background
- short but detailed description of the project
- short description about current state of the art in the field.

Proposals should be submitted via email to the chair of the SSRMP Science Committee:

raphael.moeckli@chuv.ch

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Varian Award for Radiation Oncology of SSRMP 2022

Deadline for submission: March 31st, 2022

Award rules:

1. SSRMP can award during the annual general assembly up to three Varian prizes. The maximum amount for a single Varian prize is SFr. 3'000.-. Varian Medical System Inc. donate to SSRMP each year SFr. 3'000.- for the Varian prize.
2. The prizes are given to single persons or to groups, which have made an excellent work in radiobiology or in medical physics. Only members of SSRMP or groups with at least one member of SSRMP are legitimate to apply with a manuscript or with a published or unpublished paper of special importance, special originality or special quality. The size of the work should not exceed the normal size of a paper. A thesis normally exceeds this size. The person, who enters a paper written by more than one author, should have contributed the major part to this paper. The consent of the co-authors must be documented.
3. The winner gets the prize amount, as well as a diploma with an appreciation.
4. The invitation for the Varian prize is published in the bulletin of SSRMP. Direct applications or recommendations of other persons can be sent to the President of SSRMP. The documents should be entered in four specimens not later than six months before the annual meeting.
5. A prize committee judges the entered works. It consists at least of three members of SSRMP and is elected or re-elected for 2 years by the SSRMP board. At least one member of the prize committee should be member of the SSRMP board.
6. The prize committee constitutes itself. The decision of award together with the appreciation should be sent to the board for approval.
7. Varian Medical Systems Inc. is indebted to announce in written form each change of the prize amount or a termination of the contract to the president of SSRMP at least one year in advance.
8. This regulation was accepted by Varian Medical Systems Inc. (Switzerland) on September 27th, 2006 and renewed by the annual assembly of SSRMP September 27th, 2007. It can be changed only with the approval of Varian Medical Systems by a decision of the annual assembly of SSRMP.

Note that there will be an award ceremony during the general assembly in 2022 and a publication of the Varian prize recipients is then taking place in the SSRMP bulletin and on the SSRMP website.

Raphaël Moeckli,
IRA and CHUV, Lausanne
President of the Varian Prize Committee

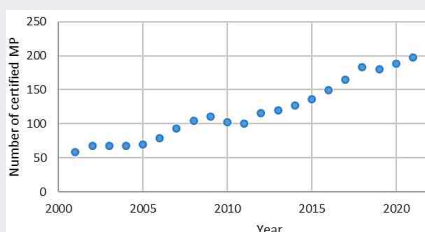
EDUCATION

Education Committee Annual Report



Dear colleagues,

this past November, 9 candidates successfully passed the SSRMP certification exams in medical physics. We warmly welcome our new colleagues in our community. Six certified medical physicists retired or did not wish to renew their certificate. This brings to 197 the number of Swiss certified medical physicists. This number has increased steadily over the last 20 years.



Nr of certified medical physicists in the last 20 years

This year, three clinical education courses for medical physics trainees were organized. Participation is

highly encouraged, even if not mandatory for future certified medical physicists. Due to the COVID situation, the teachings were held virtually with an average of more than 30 attendees. A great thank goes to Frank Zimmermann who organized these lectures and to all the speakers. I received a lot of positive feedbacks from the participants.

The Education committee reviewed the core curriculum from ESTRO-EFOMP in spring and the SSRMP board endorsed this document at the end of October. The Education committee will discuss next year if an update to the SSRMP guidelines is required in order to fulfill the requirements from the core curriculum.

The new ordinance on radiation protection entered into force on January 2018 in the radiation

protection training. All medical physicists who are going to renew their certificates after 2022 will have to follow eight units of recognized courses in radiation protection. The education committee and the BAG agreed on a list of recognized courses. This list can be found in Annex under *Recognized continuous education in radiation protection* on the SSRMP webpage and will be updated twice a year.

<https://ssrpm.ch/continuous-education-in-radiation-protection/>

Finally, I would like to thank all the people from the committee, Maria Mania Aspradakis, Frédéric Corminboeuf, Stephan Klöck, Götz Kohler, Angelika Pfäfflin, Regina Seiler and Valéry Zilio who helped me with all my tasks.

Jérôme Krayenbühl,
Chair of the Education committee

EDUCATION

Results of the Certification Exams in Medical Physics (SSRMP)

In the exams for the certification in medical physics SSRMP 2021 (27.10-05.11), the following colleagues succeeded:



From left to right:

Patrik Gonçalves Jorge, Lausanne (CHUV)

Riccardo Dal Bello, Zürich (USZ)

Reto Küng, Bern (Inselspital)

Karolina Klucznik, Zürich (Hirslanden)

Lisa Milan, Bellinzona (EOC)

Consiglia Piccolo, Lausanne (CHUV)

Sergejs Popovs, Zürich (Hirslanden)

Bertrand Pouymayou, Zürich (USZ)

Aristotelis Spyridonidis, Chur (Kantonsspital Graubünden)

On behalf of the examination committee and the SSRMP board, I want to congratulate the candidates for their certification and the new position in the community connected to that.

Stephan Klöck,
Chair of the exam committee,
Bern, 11.11.2021

Results of the survey on the SSRMP Bulletin's contents

In the past couple of years, the Bulletin has seen quite remarkable changes and improvements that, based on readers' feedback, have been highly appreciated. On the other hand, **has the Bulletin become more and more the editors' Bulletin rather than the SSRMP Bulletin?** We would like the contents of the Bulletin to be a matter of the community and not just of the editors and other executive members of the society. This is why a survey was launched in mid October about the actual content and structure of the SSRMP Bulletin, with the aim of:

- i) finding out to what extent the current format and the development of the past years reflect the expectations of its readers;
- ii) making sure that the current editorial team can leave to the future editors a journal that is appealing and at the same time that can be kept up in a sustainable manner by anyone.

The questionnaire consisted of about 10 questions. The survey was anonymous. The most significant results are presented here with our tentative analysis and the "take home message" we got from it.

The radio buttons and check-box questions had an average participation of 55.6 participants. Of these, 54.4% read only some articles of the Bulletin and 35.1% read through the entire journal in details (only 19.3% do a skim reading).

The histograms of the ratings for each section (Fig1) clearly depict a major interest on loco-regional contents, i.e. SSRMP news, Personalia, SpotLight.

The most common explanation for ratings <3 is the lack of information/news.

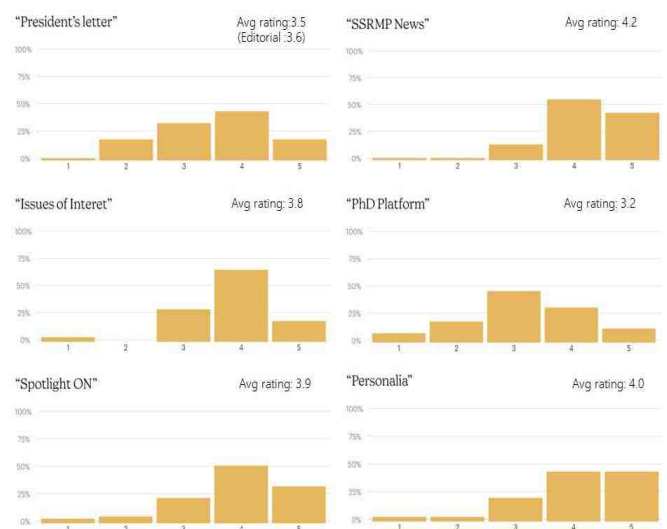


Fig.1 Ratings received by each section (President's letter and Editorial having similar figure). 1 = "I don't read it"; 5 = "I like very much reading".

Noteworthy, as shown in Fig 2, when addressing conferences and education days, a more scientific-oriented content could definitely increase their interest. A summary of the most interesting presentation of a conference could correspond well to the readers' expectation without requiring too much effort for the author. Another important information we could gather from Q12 is that often the articles in the Issues of Interests are way too long and tiresome to read.

Question 11 has 45 answers (Checkboxes)

"Would you find it interesting to have more scientific-oriented content, i.e. a summary of the most interesting presentation/s?"



Fig.2 Rate of answers to Q11

Issues Of Interest

Unfortunately, not many people are available to be regular core contributors for conference reports, with only 11 people stating they could regularly write 1 article a year and 36 people could write, but not consistently. Having regular contributors would be one of the biggest factors to make the management of the Bulletin more sustainable.

Question 13 has 57 answers (Radio Buttons)

“Would you be willing to contribute on a regularly basis?”

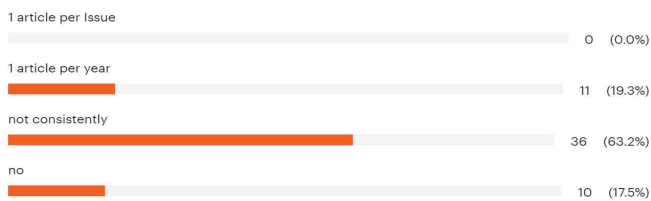


Fig.3 Rate of answers to Q13

Finally, the 3 issues per year seems to be the preferred frequency of the majority of readers (58% vs 37% accepting two issues per year and only 5% voting for one single issue per year) and, very interestingly, there is an almost exact parity of opinions when it comes to receiving a paper-version of the journal or reading the on-line issue.

Question 15 has 57 answers (Radio Buttons)

“The BULLETIN is available in both print and digital versions. If we offered a print version opt out, which option would you select?”

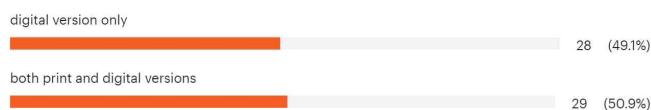


Fig.4 Rate of answers to Q15

Conclusions:

In the next issues, the editorial team will try to :

- Enhance the focus on local-news and local meetings. We already have SSRMP representatives in other societies reporting in the Bulletin. We'll try to encourage people reporting at the AMP about the work done in a working group, to also write a short summary for the Bulletin.
- Encourage the focus of the conference reports to be summaries of a couple of the most interesting presentations, and limiting them to 2 pages.
- Include the option of preference for a digital or paper version of the Bulletin so that we can avoid printing the Bulletin for every member.

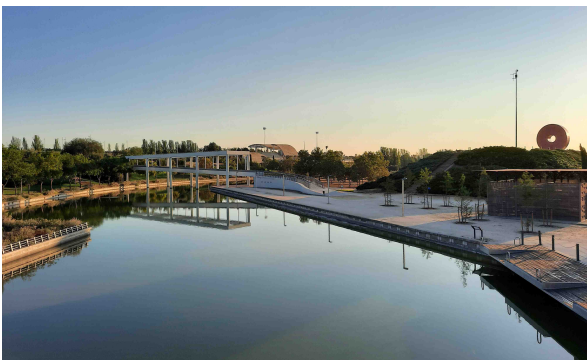
The editorial team thanks all the participants for their time and precious feedback. We'll try to keep all of the feedback in mind, including the comments not explicitly mentioned here for the sake of space. Finally, we encourage everyone who came up with appealing ideas for different articles in the Bulletin to come forward once or twice in his/her career with such an article.

Francesca Belosi, Nathan Corradini, Shelley Bulling, Jean-Yves Ray

ESTRO 2021: Optimal radiotherapy for all Madrid, 27th - 31st of August

ESTRO this year was held in Madrid in person and of course it was virtually accessible for all the people who decided not to (or couldn't) travel.

This hybrid format required some flexibility of mind in welcoming and getting used to new aspects, such as having recorded presentations rather than speakers physically present in the room (pros: being able to listen off-line to all the talks of interest even when occurring in parallel sessions); or the presence of less people around with whom to connect (pros: more focused conversations with the few you got the chance to bump into). The companies were maybe more affected by this format, since the booths in the exhibition area were not visited much. Perhaps, giving more visibility to the exhibitors will be an aspect to tackle in case hybrid conferences become the future.



Morning walk from the hotel to the IFEMA De Madrid
where the conference was held

The content

Some topics were recurrent in multiple sessions and had the “power” of initiating heated debates: the recent results of the “NHS FAST FORWARD” trial (5x5.2Gy VS 5x5.4Gy VS 15x2.67Gy) for breast treatments, adaptive RT based on CBCTs or MR images and of course, FLASH-RT.

I found the interventions of R. Moekli and J. Bourhis (CHUV, Lausanne) particularly helpful to get a critical overview of the current “state-of-the-art” of this new

technique. Quoting them (another advantage of being able to listen and re-listen the same talk off-line ;)), *“FLASH is a biological observation of a reduction of radiation toxicity to normal tissues, while WE THINK we maintain a similar effect on tumors when comparing ultra-high with conventional dose rates”*. The observations are real and consistent in several types of tissues and species, with different kinds of radiation (protons, photons, electrons...) and in different institutes, suggesting we have a good starting point for robust and reproducible clinical data on normal tissue. Nevertheless, *“Do we have robust and reproducible clinical data on tumor? Does the FLASH effect protect also tumor cells?”* So far, several studies showed an iso-effect in tumor growth delay with FLASH and with conventional fractionation, but also one study exists (Chabi, 2020) where one cell line of leukaemia was indeed protected by FLASH. Therefore, there might be some heterogeneity when we enter the “tumor field” with FLASH, and we definitely need more data on that.

Both talks also reminded us that tumor experiments and normal tissue experiments were done so far at different dose levels: very high single dose for normal tissues (30-40Gy) VS 15Gy for tumor cells. *“Will we see any difference for normal tissue at 15Gy?”* and *“Which is then the optimal fractionation with these high dose-rates?”*. Finally, *“what are the optimal parameters for clinical translation?”* The variables are many and closely interconnected: number of pulses, dose per pulse, time per pulse ...

To conclude, the results are promising and in some way exhilarating. But we have just opened the door of this interesting world and probably have not even set one whole foot inside. In order to take the first proper steps into it, there's still a lot to do. It's not a race, but more like a long marathon. Cautiousness and patience are key elements, together with communication and co-operation to share the details of new results and

Issues Of Interest

experiments. And of course, we shall have fun during the journey!

Another talk I very much enjoyed for the useful application of its topic, was given by **Oyvind Lunde Rortveit** (Haukeland University hospital, Norway). The talk being on a statistical method for reducing systematic errors in presence of OAR deformations. The method allows for anticipating the predicted shape of the rectum (but it can be applied to any other organ), how it might on average be during the course of the RT treatment, starting from the individual patient's planning CT and population data previously collected. Oyvind showed us how planning on this predicted shape of the rectum, rather than on the planning CT rectum shape, can help reduce the systematic error in the evaluation of the dose received by this organ, due to its constant anatomical variability from day to day.

Many other sessions were interesting and definitely caught my full attention. For instance, one session was focused on preliminary results on 2nd end-point (i.e. mainly toxicity) of several on-going clinical trials. Very useful to better understand the clinical dose constraints to OARs we receive when planning.

All this, summed up with meeting again a couple of old friends and colleagues, and with the beauty of Madrid's vast gardens, made this year's ESTRO a great experience to me.

Francesca Belosi,
Universiy Hospital, Zürich



Buen Retiro Park: crystal palace (left) and a small botanic garden (right)

SSRMP/SRO Continuing Education Day: Brain tumors and CIRS virtual, 1st of September

As a medical physicist in training, I attended the educational meeting on September 1st organized by the SRO and SSRMP. It was a very interesting multidisciplinary session useful to focus attention on different innovative studies in radiotherapy.

Given the historical period strongly marked by the pandemic, the conference was held online. Although we are used to talking behind a screen, I really hope that we will be able to have meetings in person as soon as possible.

The clinical education meeting "*Brain tumours and CIRS*" was divided in two sessions. The first session led by Dr. Markus Gross was focused on the main clinical aspects of brain tumors. The second was presented by Prof. Frank Zimmermann and the main topic was the Critical Incident Reporting System (CIRS).

The introduction of the first theme focused on the epidemiology, the symptoms and the incidence of brain tumors. Then the speaker explained to us how a doctor can detect a brain tumor using different imaging and which imaging is useful in different situations. This information is fundamental for future radio-oncologists and this is also very interesting for medical physicists.

Then the discussion moved to the different ways to treat a brain tumor and in particular how radiotherapy can help. Dr. Gross showed us recent studies in which some fractionations and techniques were used and compared.

A main topic among physicians is also how to define a target volume and there are many studies useful to compare different target volume delineation strategies. It is interesting to understand how and how much new techniques influence the patient outcome. This is fundamental for pursuing the medical physicist's main goal that is the patient health.

The afternoon was dedicated to the CIRS topic. After a brief introduction, Prof. Zimmermann tried to involve the audience with some questions about the correct behavior in clinical practice. During the last decades, the complexity in radiotherapy systems increased, and along with it, the risk of errors. During the clinical treatments, a simple error could have serious consequences. Therefore, it is important to use a CIRS. The best way to improve, as a clinical team, is to practice a continuous incident learning. In order to achieve this main goal, it is fundamental that all of us report incidents and near misses. To stimulate the staff, CIRS must be confidential, voluntary and most importantly non punitive.

Prof. Zimmermann showed us frequent events that could happen in radiotherapy and the different types of CIRS used in Switzerland.

Making mistakes is human, reporting them could help colleagues and ourselves to improve safety in radiotherapy.

As a medical physicist in training, I think that these meetings are important to focus the attention on some fascinating clinical aspects. For this reason, I hope that SRO and SSRMP are going to keep organizing educational courses, and I look forward to meeting my colleagues in presence.

Mathieu Dufour,
EOC, Bellinzona

SSRMP Continuing Education Day: Challenges of medical physicists in the operating theatre Bern, 25th of October

In the last 2 years, the Corona pandemic brought great challenges to society due to the restrictions that came with it. Keeping a distance from others became a part of our daily lives and virtual meetings and training sessions were the order of the day. Therefore, it was even nicer that the Continuous Education Day, which had been postponed from 2020, could take place on site in Bern at Salem Hirslanden hospital. There was a sense of relief and joy when, thanks to the 3G rules, the participants were able to take off their masks and look into familiar faces.



The Continuous Education Day was organized by the Radiation Protection and Image processing group of the Hirslanden Clinic. After a warm opening of the day by our president M. Fix, the organizers and C. Westerof (CCO of Hirslanden AG), we found a variegated mix of contributions.

The industry presented state-of-the art technologies like the current mobile C-Arms or Automatic exposure control concepts, which also led to interesting discussions. There were exciting reports on alternative solutions such as X-ray free navigation and connections between dose awareness tools and dose saving. Very practice-oriented was a contribution about QA according to AAPM TG190, as well as the report on challenges in establishing eye lens dosimetry. Regarding research, a hybrid pixel detector was presented, used for the characterization of the radiation field in hospital theatres. The role and input of the medical physicist in the operation theater regarding radiation protection was presented, as well

as evaluations of a survey on the knowledge of the operating room staff regarding radiation protection and the statistical evaluation of the influence of the use of the Radimetric dose management system on dose optimization in interventional cardiology. After a presentation on the use of live dosimetry as a training tool, it was time for a short break for breathing, socializing and a delicious lunch.

The afternoon was primarily devoted to contributions from the various professional groups and their challenges with radiation protection. The varying needs of the professional groups as well as the different demands on medical physics in the field of radiation protection were impressively pointed out. Nurses, physicians, medical physicists themselves as well as professionals of the FOPH were represented. It was exciting to see that in such an interdisciplinary working environment, points of friction can arise. Nevertheless, the contributions focused on the need for individual, sufficient and informative clarification and assistance by the medical physicist and close cooperation with the experts. Furthermore, the clinical audits were discussed, which have proven to be a helpful tool in the process of continuous improvement.

With the event, the new regulation for Continuous Education in Radiation Protection was also applied as it was recognized by the SGSMP as a complete continuous education in radiation protection.

The event was a symbolical new start into a future, in which one may hope not to have to handle everything virtually. A nice broad mixture of topics across all professions was shown. A big thank you to our colleagues Roland Simmler, Alex Schegerer, Stefano Gianolini and Nick Ryckx for organizing the event even twice. Everyone enjoyed it very much!

Marina Hennet & Matthias Hartmann,
Inselspital Bern

Nachruf: Prof. Dr. Heinz Hugo Loosli (1936 – 2021)



Im Mai dieses Jahres ist Professor Heinz Hugo Loosli im 85. Lebensjahr gestorben. Er war viele Jahre Mitglied der SGSMP. Auf dem Gebiet der radioaktiven Tracern in diversen Umweltprozessen und der schwachen Radioaktivität in der Umwelt war er ein anerkannter und bedeutender Fachmann.

Hugo Loosli wurde 1936 in Bern geboren, als Bürger von Sumiswald und Basel. Das Gymnasium absolvierte er in Bern wie auch das Physik-Studium an der Universität, aber auch in Basel und Zürich. Anschliessend machte er eine Postgraduate-Ausbildung an der University of California in San Diego. 1963 erhielt er das Diplom für das höhere Lehramt an der Universität Bern. Seine Dissertation mit dem Titel *Nachweis von Ar-39 in atmosphärischem Argon und weitere Grundlagen zu einer Datierungsmethode mit diesem Isotop* schloss er erfolgreich im Jahre 1968 ab. Er erhielt die Stelle eines Oberassistenten. 1971 wurde er Lektor für Experimentalphysik im propädeutischen Unterricht und 1980 habilitierte er für Experimentelle Physik insbesondere für Isotopenmethode. Später wurde er zum Professor in der Abteilung für Klima und Umweltphysik am Physikalischen Institut der Universität Bern befördert. Zusammen mit seinem Mentor Prof. Hans Oeschger, einem Pionier der Klimaforschung, beschäftigte sich Loosli auf dem Gebiet der Anwendungen von C-14 in der Umweltforschung und machte auch Messungen in der Umgebung von KKW und der chemischen Industrie.

Vor und nach der Jahrtausendwende veranstaltete Hugo Loosli zusammen mit Thomas Stocker, dem bekannten Klimaforscher, regelmässige Seminare über Klima und Umweltphysik sowie einen Vortragszyklus

über Klimaforschung. Gerne zeigte Hugo in seinem Labor Eisbohrkerne aus einer Tiefe von etwa 2'900 Metern mit einem Alter von 490'000 Jahren, die aus dem südlichen Ozean stammten und physikalische sowie chemische Informationen über vergangene Klimaverhältnisse enthielten. Loosli war ein grosser Förderer und Mitarbeiter der Internationalen Stiftung Hochalpine Forschungsstationen Jungfrauoch und Gornergrat. Im Rahmen von SGSMP-Jahrestagungen hat er mehrmals über seine Forschungsergebnisse berichtet.

Hugo Loosli war Präsident der ehemaligen eidgenössischen Kommission zur Überwachung der Radioaktivität (KUeR), Mitglied der eidgenössischen Kommission für Strahlenschutz (EKS) sowie des Leitenden Ausschusses Radioaktivität des Bundesrates (LAR). Er war involviert in die Programme zur Überwachung der Radioaktivität in der Schweiz (RADAIR, NADAM, MADUK) und arbeitete auch mit der Nationalen Alarmzentrale (NAZ) zusammen. Im Fachverband für Strahlenschutz half er, Fragen und Antworten zum Strahlenschutz zu formulieren, welche im Internet aufgelistet sind.

Die Direktion und Mitarbeitenden des Physikalischen Instituts der Uni Bern bezeichneten Hugo Loosli als hervorragenden und engagierten Lehrer und Wissenschaftler. Sein mit Unterlagen und Zeitschriften überladenes Büro in der Universität oberhalb des Bahnhofs Bern war einmalig und eindrücklich. Ich habe ihn zudem als geselligen Kollegen erleben dürfen. Seine Herkunft und Wohnregion konnte Hugo mit seinem Berner Dialekt nicht verleugnen. Er sprach bedächtig und besonnen.

Heinz Hugo Loosli war eine ausserordentlich aktive und engagierte Person sowie ein liebenswerter Kollege.

Jakob Roth,
Arisdorf



Clinique de Genolier and Clinique Générale Beaulieu



The radiation therapy departments at the Clinique de Genolier and the Clinique Générale Beaulieu operate as one radiation therapy department with two sites (SRON = Swiss Radio-Oncology Network). All the physics team works at both sites with different specialties in the physics group. We have four physicists, a physics assistant and a dosimetrist. The rest of the team is 5 radiation oncologists, 1 assistant radiation oncologist, 11 RTTs, and 5 secretaries.

Clinique de Genolier

The radiation therapy department at the Clinique de Genolier opened 26 years ago in 1995 with a Saturne linac from GE. It was the first private radiation therapy center in Vaud. In 2008, the Saturne was replaced by a Varian Clinac 21iX and a LIAC for intra-operative

radiotherapy (Sordina IORT technologies). A Papillon 50kV superficial X-ray unit was added in 2015 (Ariane), offering a treatment technique that is unique in Switzerland: superficial X-ray intra-rectal treatments for early stage rectal carcinoma.

Since June 2021, construction is underway for a completely new radiotherapy department at Genolier. The new Genolier radiation therapy department will be located inside the Genolier innovation hub and will have one tomotherapy RadiXact machine. Joining us there will be Accuray and RaySearch training centers, and EBAMed and other companies with radiation oncology, nuclear medicine and other projects. The radiotherapy equipment installations for the new department will start in summer 2023.



Genolier physics team ready for a new office...

From left: Pascaline Dautre, Maud Jaccard, Cédric De Marco, Marie Fargier-Voiron



Clinique Générale Beaulieu

In July 2021, the radiation therapy department from the Centre d'Oncologie des Eaux-Vives moved to the Clinique Générale Beaulieu in Geneva. When it opened in 2007, the Centre d'Oncologie des Eaux-Vives was the first private radiation therapy department in Geneva. The Varian Clinac iX of the old department was replaced by a tomotherapy RadiXact and a CyberKnife in the new department at the Clinique Générale Beaulieu.

Since the opening of the Beaulieu radiotherapy center, we moved from *Go-live to Go-live*; starting with the RadiXact go-live with the ClearRT system (2nd site in Europe with the kVCT imager), AlignRT for patient setup at the RadiXact, CyberKnife for static and moving targets, SimRT for gated and 4D scanner acquisition, SafeID for patient facial recognition and RayTreat R&V for Radixact.



CyberKnife go-live at the Clinique Générale Beaulieu
From left: Vera Magaddino (Accuray), Christelle Aubry, Asma Driouch, Oscar Matzinger, Shelley Bulling, Adrien Cosinschi, Maud Jaccard, Nicolas Perichon, Johann Vaillant, Caroline Lesven (Accuray)

Beginning of next year, we'll add the RadiXact Synchrony go-live to this list, a capability of the machine that we are validating with the Delta4 phantom in combination with the Hexamotion platform.

The CyberKnife S7 was commissioned for Precision and RayStation TPS for fixed, iris and MLC collimators. Comparison of both TPS is currently under investigation and we are planning to go-live with RayCK and RayTreat very soon.

And mid-long term, some current physics projects are: testing a prototype in-bore ring for surface imaging inside the RadiXact bore allowing for breast DIBH treatment, evaluation of a MyQASRS device for CyberKnife QA, cardiac ultrasound tracking project with EBAMed, RaySearch RayCare clinical implementation ...

It's never boring to work for SRON ;-)
Shelley Bulling



RadiXact go-live at the Clinique Générale Beaulieu
From left: Simon Legros, Magalie Pinel, Asma Driouch, Maud Jaccard, Marie Fargier-Voiron, Shelley Bulling, Johann Vaillant, Adrien Cosinschi

“KSA-KSB: Welcome & On the move”

Many things have changed since the beginning of 2020. The first thing that comes to mind is the pandemic. Despite the pandemic greatly reducing our mobility, seven medical physicists have found their way to Aarau and Baden and started working at the Radiation Oncology Center KSA and KSB since then. In 2021, we celebrated the 5-year anniversary of Kantonsspital Baden joining the center. Unfortunately, we were not able to organize big festivities, but thanks to the warm weather, we were able to raise our glasses to many more successful years with the teams in our garden in Aarau. In the following paragraphs, our new physics team members would like to introduce themselves to the Bulletin readers.

Damian Kozyra

The dinosaurs did not become extinct entirely...



My Swiss adventure started at the beginning of 2019 when my family and I moved to Zürich. Almost immediately upon my arrival to the Swiss hub, I had the pleasure to engage and offer my hands-on experience in treatment planning and machine quality control in an always-

busy radiotherapy department of the University Hospital in Zürich. The intense professional life – as well as domestic one, since my second daughter was about to be born soon, found its positive conclusion when I passed my SGSMP exam in November the same year.

Soon afterwards, I sailed towards new horizons and found the very enthusiastic, professional and friendly medical physics team in KS Aarau and KS Baden. Up to date, I am happy to loiter around both places and offer my knowledge and experience to help both departments running.

Ah, about the dinosaurs...

Well, my radiotherapy journey started in 2003 in the

Oncology Centre in Krakow, my home city in the south of Poland. This unassuming place had an interesting history of being one of two hospitals (second was the OC in Warsaw), to which Marie Curie donated freshly discovered Radium (c.a. 1g). This memorable time was exciting as I was concerned with dosimetry and quality control measurements, including (almost forgotten, I guess) cobalt-60 machines and Clinac 600 accelerators. After a few years, I moved to the UK to start to work with the medical physics team from Oxford University Hospitals in 2007. Besides being an exciting place to meet people from around the world, I deepened my knowledge and expanded my experience in medical physics. Honing my English skills was also fun.

The wind of change brought me back home to Poland in 2016. I spent there two professionally active years in a small private oncology hospital in a beautiful city of Zamość.

P.S. Dinosaurs like water. You can find them swimming a lot and underwater too, where they peek into shipwrecks at the bottom of the sea. When on land they enjoy studying the history of their extinct ancestors and playing a ukulele while sipping Sauvignon blanc will do just fine.

Damian Kozyra,
KSA-KSB

Hai Nguyen

Deep dive into medical physics



Medical Physics comes to me late after several years working in various interdisciplinary fields between physics and chemistry (material science, surface science, and electrochemistry) at different institutions (TU Hanoi, Uni Bonn, KU

Leuven and Uni Bern). It was the personal experience of having a cancer patient in the family, which led me to have a closer look into medical physics, in particular radiation therapy. I was impressed by the application of physics in medicine to cure patients and I dreamed of working in this field.

A great MAS course "Medical Physics ETH" (2016-2018) and the master thesis work at the USZ (thanks to Dr. Tanadini Lang) were ideal first steps to make my dream come true. During the MAS course (2017), I had

a chance to work as an external co-worker in the medical physics group at the Kantonsspital Winterthur (thanks to Dr. Meier) and earned first practical experiences of medical physics work in a clinic.

In July 2018, I got my first official position as a medical physicist with a short-term contract at the ZRR (Zentrum für Radiotherapie Rütli), where I learned (under the guidance of Mr. Alessandro Clivio) to work independently as a medical physicist.

In December 2019, I moved to the great medical physics group at St. Claraspital AG (thanks to Prof. Dr. Wolfgang Harms, Dr. Anja Schulte, Ms. Maria Herraiz, and Dr. Karl Heinz) and earned a lot of experience from them (short-term contract).

Since mid-May 2020, I happily joined the excellent medical physics group at Kantonsspital Aarau and Kantonsspital Baden. Great colleagues and great working environment are helping me to develop further my knowledge in this fascinating field.

I am looking forward to meeting you somewhere in the near future.

Hai Nguyen,
KSA-KSB

Marius Eichler

Gy does not stand for "gigayear" anymore



Last summer I started my traineeship in the medical physics group at RAOZ KSA-KSB, where I met very nice colleagues and found an excellent learning environment.

I grew up in Basel, where I studied physics, because I was fascinated by the thought of describing natural phenomena. After obtaining my PhD in theoretical (astro-)physics in 2016, I spent four years as a postdoctoral researcher at the Technical University of Darmstadt in Germany, all the while conditioned into reading "gigayear" whenever

encountering the unit [Gy]. Astrophysics was always very good to me, but I am equally excited to train to be a medical physicist (and not having to rely on Deutsche Bahn anymore is a plus). I am currently enrolled in the MAS in medical physics and enjoy the lectures a lot.

Since the age of eight, I have been playing the clarinet, and in my free time I like to play in amateur symphony orchestras. During my time in Germany, I joined the German lawyers' orchestra, which is a bit ironic considering I am neither German nor a lawyer. As a lockdown hobby, I have also started learning to play the saxophone.

I am excited to become a medical physicist and look forward to getting to know all of you once meetings can take place offline again.

Marius Eichler,
KSA-KSB

Roger Hälg

From Bratwurst to Carrots



part of the *H1 experiment* at DESY.

After this first encounter with particle accelerators, I was thrilled to start my PhD at Triemli Hospital Zürich, working on assessing all dose contributions in modern radiation therapy. Operating an accelerator alone and performing my own measurements was the trigger for my passion for medical physics. Together with my supervisors, I moved to Hirslanden Radiotherapy where I finished my PhD and

I was born and raised in St. Gallen, the city within the green ring as the proud locals call it. In order to study physics, I moved from St. Gallen to Zürich and then to finalize my diploma at ETH, I spent half a year in Hamburg with the ETH physics research group – as

started working on a PSI-Postdoc project about cancer risk from neutrons in radiation therapy. During this project, I had the opportunity to spend one and a half years in Loma Linda, California, working on neutron Monte Carlo simulations and the research proton beam line.

In 2015, I started working as a Clinical Medical Physicist back at Hirslanden Radiotherapy, where I spent almost 6 years with an amazing team.

Towards the end of 2020, I had the opportunity to change into a new role and become the Head of the Medical Physics Group at the Radiation Oncology Center of Kantonsspital Aarau and Baden. The years 2020 and 2021 have been a very exciting time for me and my team, which you can get to know in this issue of the Bulletin. Consequently, this is what brought me to the "Canton of Carrots" and share my little story with you.

By the way, you can still find me at OLMA in St. Gallen enjoying a bratwurst every October.

Roger Hälg,
KSA-KSB

Viktor Gajdos

Combining physics and technology in medicine



in a university environment, I took an opportunity to experience the world of business as a sales representative for Siemens Healthcare in Slovakia. Fascinated by the ultrasound, CT, MRI... technology I thought that even more interesting than selling these machines, it could be to work as physicist on their development...

I moved to Baden in Switzerland to join my wife, already very satisfied working as a doctor in the hospital here.

I studied a master in physics and a PhD in biophysics at Comenius University in Bratislava, Slovakia. My research interests were in the development of biosensors for DNA interactions and damage studies. I liked precise measurements, technical problem solving and prototyping of laboratory devices. After years

The original idea to enjoy only a year on paternity leave changed - I also fell in love with this beautiful country and we decided to stay. When I found the opportunity to study MAS in medical physics at ETH (2018-20) it was a quick decision to study the exciting combination of physics and technology in medicine. How exciting it was to study at the great ETH! Thanks to MAS organizers and teachers! I enjoyed all the courses.

In December 2020, I got an opportunity to join the team of physicists at radio-oncology in Kantonsspital Aarau for a temporary position as a medical physics trainee. After several weeks to see what the medical physicist's job is about and in a warm atmosphere with friendly colleagues at KSA, I am sure now, that the career change into medical physics was the right choice. At the end of May 2021, I had to say goodbye to the physics team at KSA-KSB, as my time-limited contract ended. With my first practical experiences in medical physics, I am excited and ready to join the team at University Hospital Basel, where I will continue my training in radiation oncology medical physics.

Viktor Gajdos, KSA-KSB

Norbert Klippel

Back to Dättwil



After my studies of Physics at the University in Heidelberg, I worked at Karlsruhe Research Center to receive my PhD in nuclear astrophysics.

My industry career started in Switzerland at ABB Corporate Research in Baden-Dättwil. Here I worked for 15 years in the field of environmental

technologies and power generation with a strong focus on exhaust gas cleaning and PM10 reduction. Finally, I decided to learn something new again, and studied medical physics at the MAS course at ETH Zürich besides my main job.

A next station was the University of Applied Sciences in Rapperswil, where I worked as lecturer in Physics.

I gained my major experience in medical physics during 10 years at Inselspital Bern and the alliance partner in Solothurn, where I was involved in the design of two new radiation bunkers and the set-up of two Varian linacs, recently a TrueBeam.

Since March 2021, I am member of the team of Kantonsspital Aarau. My main work place is the alliance partner Kantonsspital Baden, which is just located adjacent to ABB, where my Swiss career began.

Norbert Klippel,
KSA-KSB

Helmut Schneider

Combining the complementary fragments



I started my career in the formerly GDR as a metrological professional. During my physics study in Heidelberg, I came into first contact with a particle accelerator as part of the operators' team. My diploma thesis in optical microscopy at the resolution

limit was not a pure physics thesis, but embedded in cancer research at the cellular level at the Kirchhoff Institute.

Going from cell level to tissue level, I joined a group for acoustical microscopy on bones. Ultrasound has the ability to test the real stiffness of bone and allows the investigation of healing processes around hip implants. Having spent several years in the industry optimizing the quality of things that had nothing to do with people, I came to a point where I decided to combine all the complementary fragments.

Combining physics with medicine, imaging and precise measurements in one discipline seemed ideal. Therefore, I decided to study medical physics at the MAS course at ETH Zürich besides my main job.

In 2017, I finally got the chance to work in radiation oncology at the Kantonsspital Aarau with a temporary position as a medical physics trainee. This allowed me to gain experience in medical physics, work in a clinic and meet the requirements for specialty certification. After this time, I went to the Kantonsspital Münsterlingen which is a charming place surrounded by nature next to the lake Constance with a nice team.

So coming back to Aarau after almost 2 years was not an easy decision. However, in the end the great team and working environment here at the Kantonsspital Aarau plus an extra bonus for not travelling consolidated my decision.

Helmut Schneider,
KSA-KSB

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Schweizerische Gesellschaft
für Strahlenbiologie
und Medizinische Physik
(SGSMP/SSRPM/SSRFM)

Printing Press

Valmedia AG
Pomonastrasse 12
CH-3930 Visp
www.mengisgruppe.ch

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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. 102 (01/2022): 03.2022

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Conference Calendar

CALENDAR 2022

January 17 online	PSI Winter School for protons January 17 - January 22 https://indico.psi.ch/event/11432/
April 11 Antwerp, BE	International Conference on Monte Carlo Techniques for Medical Applications April 11 - April 13 http://mcma2022.com/
May 6 Copenhagen, DK	ESTRO 2022 May 6 - May 10 https://www.estro.org/Congresses/ESTRO-2022
May 30 Budapest, HU	6 th European Congress on Radiation Protection May 30 - June 3 https://akcongress.com/irpa2022/
June 19 Schladming, AT	Winterschule Pichl für Medizinische Physik 2022 June 19 - July 1 https://www.winterschule-pichl.de/
June 23 Fribourg	SCR'22 June 23 - June 25 https://congress.sgr-ssr.ch/future-congresses/
July 10 Washington DC,	64 th AAPM Annual Meeting July 10 - July 14 https://www.aapm.org/meetings/
August 17 Dublin, IRL	4 th European Congress of Medical Physics August 17 - August 20 https://www.ecmp2022.org/
September 5 Geneva	International Conference on Occupational Radiation Protection September 5 - September 9 https://www.iaea.org/events/occupational-radiation-protection-2022
October 27 Thun	55 th SSRMP Annual Meeting October 27 - October 28 https://ssrpm.ch/event/55th-ssrmp-annual-meeting/



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!