

Stockholm University Research Centre for Radiation Protection Research CRPR

www.crpr-su.se

Summary of activities for 2013

Introduction

With the establishment of CRPR in October 2008, Stockholm University wants to promote excellence and long term national competence in radiation protection research. Stockholm University has a long standing tradition in education and research on the effects of ionizing radiation on man and the environment. The location of CRPR at the Stockholm University provides CRPR with a unique set up of radiation facilities for investigations of effects of low doses and dose rates of low and high LET radiation. CRPR shall promote international cooperation and invite colleagues in Europe to use the low dose and dose rate exposure facilities. Moreover, CRPR represents the SU in the council of the MELODI initiative.

The Centre was created as an independent unit within the Department of Genetics, Microbiology and Toxicology (GMT) at Stockholm University at the Science Faculty of Stockholm University and comprises researchers who are active within the fields of radiobiology, radioecology and radiation dosimetry. In January 2013 GMT fused with two other institutes to form the new Department of Molecular Biosciences, The Wenner-Gren Institute – MBW (http://www.su.se/mbw/).

The Centre is headed by a Board of five members, one for each of the three research fields and two others whose competence is judged to be of value for the Centre's operation. The Board members and the chairperson of the board are appointed for three years by the Chancellor based on the recommendations of the Board of the Faculty of Science. The Board has the overall responsibility for the Centre's operation and programme.

The Head of the Centre is appointed for a three year period by the chancellor after hearing the Faculty of Sciences and the board of MBW. The head of the Centre shall not be a member of the board. The Head of the Centre is in charge of the daily activities and should be an employee of the University.

The activities of the Centre are financed from external sources.

From 2013, the webpage of CRPR is http://www.crpr-su.se.

Activity during 2013

Head CRPR 2013

Andrzej Wojcik, Professor, MBW, Stockholm University

CRPR board 2013

Eva Forssell-Aronsson, Professor, Chairperson, Dept of Radiation Physics, Sahlgrenska Academy at

University of Gothenburg

Eva Simic, Head of research, SSM

Hooshang Nikjoo, Professor, Medical Radiation Physics, Dept of Oncology-Pathology,

Karolinska Institutet

Mats Harms-Ringdahl, Professor, MBW Stockholm University

Clare Bradshaw, Associate professor, Department of Ecology, Environment and Plant Sciences,

Stockholm University

The CRPR board met 4 times: 04 March 2013; 30 May 2013; 30 September 2013; 04 December 2013. The minutes from the meetings are attached as annexes.

Support has been provided for the CRPR activities by:

Swedish Radiation Safety Authority (SSM) Swedish Nuclear Fuel and Waste Management Company, SKB DoReMi, NoE, FP7 Euratom.

Detailed information about the activities can be found at: http://www.crpr-su.se/crpr_events.html

On March 6th 2013, CRPR signed a Memorandum of Understanding with the Hirosaki University, Japan. See pictures at http://www.crpr-su.se/MoU Hirosaki images.pdf.

Workshop

Contribution of epigenetic mechanisms that influence susceptibility to radiation-induced cancer

Date: April 24-26 2013

Venue: Swedish Museum of Natural History, Stockholm, Sweden

Seminars

Health Risks of the Fukushima-Daiichi Nuclear Accident

Anssi Auvinen, 04 04 2013 Venue: Stockholm University

Kompetenzverbund Strahlenforschung (KVSF) – the German scientific program to increase the competence in the area of radiation research. History and experience.

Wolfgang-Ulrich Müller, 09 04 2013

Venue: Stockholm University

Bystander effects, adaptive response and individual sensitivity, a challenge to current radiation risk estimates? William F. Morgan, 15 10 2013

Venue: Stockholm University

The persistent radiological problems at the Fukushima Daiichi nuclear power plant:

causes and possible mitigations.

Jan Johansson, 31 10 2013 Venue: Stockholm University

Induction and repair of clustered DNA lesions: what do we know so far?

Alexandros G. Georgakilas, 19 11 2013

Venue: Stockholm University

The Ecosystem Approach (EA): ho can it be used in protection of the environment from

toxic substances?

Magnus Tuvendal, Valery Forbes, Ulrik Kautsky, 18 12 2013

Venue: Stockholm University

Other activities 2013

CRPR is one of the founding members of the MELODI association that started 2010 (http://www.melodi-online.eu/). MELODI is a European Platform dedicated to low dose radiation risk research. MELODI will propose R&T priorities for Europe in its field of competence and will seek the views of stakeholders on the priorities for research, keep them informed on progress made, and contribute to the dissemination of knowledge. CRPR is represented in MELODI by Mats Harms-Ringdahl. The 2013 MELODI meeting was organised in Brussels, Belgium (07-10 October 2013) and attended by Mats Harms-Ringdahl, Eva Forssell-Aronsson, Siamak Haghdoost and Andrzej Wojcik.

CRPR organized a course in radiation biology (15 credits) at Stockholm University for undergraduate and master students.

CRPR organized a European training course (CELOD, 22nd April -3rd May) at Stockholm University, within the WP3 program of DoReMi.

CRPR co-organised a European training course Environmental Radiobiology (24-28th June 2013), UMB, Norway within the WP3 program of DoReMi.

In June 2013 CRPR joined the 4 year, FP7 Euratom OPERRA project that will exploit the synergies of EURATOM and other EC programmes considering the most relevant joint program areas and mechanisms for funding joint activities in low radiation dose research.

CRPR financially supported the course "Interaction of Radiation with Matter: KI 2694", organised by Hooshang Nikjoo, 26 - 20 September 2013 at Karolinska Institute.

CRPR financially supported the meeting of SWE-RAYS, 21-13 August 2013, Uppsala University: http://swerays.se/workshop2013/index.html.

CRPR financially supported the seminar "Humans and Ecosystems Over the Coming Millennia: A Biosphere Assessment of Radioactive Waste Disposal in Sweden", 16th October 2013, KVA.

Andrzej Wojcik

Andre Woll

Stockholm, 2013 12 09

Head of CRPR

Attachments: minutes of CRPR council meetings



Minutes from the board meeting of CRPR

March 04th 2013, 10.00-12.00 Stockholm University

Present: Clare Bradshaw, Eva Simic, Hooshang Nikjoo, Andrzej Wojcik and Mats Harms-Ringdahl Eva Forssell-Aronsson was absent due to teaching obligations. Andrzej Wojcik had to leave shortly before 12:00 because of flight to Japan. The meeting was chaired by Mats Harms-Ringdahl.

1. Opening of the meeting

Mats

The meeting was opened

2. Approval of agenda

Mats

The agenda was approved

3. Minutes from the telephone meeting on 2012 12 19

Mats

The minutes were approved.

4. Change in research policy at STUK and its possible consequences for Nordic countries

Andrzej

Andrzej informed that the Finnish government decided to stop all research activities at authorities. This decision hits the radiation Protection Authority STUK. STUK will complete the research planned within running EU projects, but will not be involved in future research activities that should be outsourced to universities. It is not known how this will be organised, especially with regard to funding. This decision will also lead to a decreased capacity of STUK to carry out biological dosimetry.

5. Current status of EU-funded projects at CRPR

Andrzej/Clare/Mats

Andrzej informed about MULTIBIODOSE and RENEB and the running applications T-MASH and OPERRA. Clare informed about the running application COMET. Mats informed about MELODI and DOREMI.

6. Economy for 2013

Andrzej

SSM dedicated 135 000 SEK and SKB promised 100 000 SEK for CRPR activities. With the sum of money over from 2012 the expected budget for 2013 is ca. $300\ 000$ SEK.

7. Planning for activities 2013

Mats

The planned activities were discussed. Andrzej will invite Wolfgang Müller from Essen, German to talk about the German system of funding radiation research: Kompetenzverbund Strahlenforschung (09 April 2013). Mats informed about the Workshop in Epigenetics organized by CRPR April 24-26 and the upcoming SWE-RAYS meeting 21-23 August 2013 in Uppsala. Hooshang informed about the DNA-

repair symposium organized June12-13. Andrzej informed about plans to organise (together with Iuliana Dasu) a seminar about biological basis of radiotherapy.

8. Application to support the course Interaction of Radiation with Matter - Physics Course

Hooshang

Hooshang asked for a financial support from CRPR for the course "Interaction of Radiation with Matter" to be organised at KI at the end of August. The board decide to support the meeting with 50 000 SEK in case money is missing from other sources.

9. How to involve more groups in the CRPR activities

Mats

The question of how to involve more groups in CRPR activities was discussed, but no decision was taken in view of the fact that Eva FA and Andrzej were missing (Andrzej left for Japan before the discussion).

10. Additional questions

Mats

No additional questions were discussed.

The date of the next meeting will be decided by a Doodle poll.

Stockholm 22nd May 2013

Mats Harms-Ringdahl



Minutes of the board meeting of CRPR 30th May, 2013, 10.00-12.30 MBW E505 – Andrzej's office Stockholm University

People present: Eva Forsell-Aronsson, Hooshang Nikjoo, Mats Harms-Ringdahl, Andrzej Wojcik. Eva Simic and Clare Bradshaw were not able to attend due to other meetings.

1. Opening of the meeting

Eva FA

Eva opened the meeting and welcomed all participants.

2. Approval of agenda

Eva FA

The agenda was approved after small typing corrections. The application from Ulrik Kautsky for support of the seminar on "humans and ecosystems..." was included in "Planning for activities 2013".

3. Minutes from the 2013 03 04

Eva FA

The minutes were approved.

4. Courses for journalists on radiation risk

Andrzej

Andrzej informed how during a meeting on April 9th 2013 Sisko Saaloma described seminars on radiation risk organised by STUK for Finnish journalists. Eva Simic suggested taking up this idea as a possible activity for CRPR. This idea was positively received by the CRPR board. It was decided that Andrzej will suggest this to Pelle Zettersten from the Swedish National Radio (Science department). Another candidate for contacting is Gustav Klarin from Uppsala (Mats knows him). Eva also knows some names from Gothenburg. Hooshang suggested including a journalist as member of the organising committee of such seminar.

5. Education program on radiation effects in schools

Andrzej

Andrzej informed about the idea to run a project aiming at improving the school education on radiation risk. It could start with screening the available school books with respect to the teaching content on that matter. Some financial support is necessary for this task, perhaps SSM can contribute. Eva described the positive experience from Gothenburg regarding lessons in schools (level of "gymnasium") given by master students in physics. A good text book in physics is "Heureka! - fysik för gymnasieskolan, av Lars Bergström". Andrzej will contact Eva Simic regarding the possible support from SSM.

6. Information on the situation of people from Namie town close to Fukushima-Daiichi (info from trip to Japan)

Andrzej

Andrzej informed about his impression from the visit to Japan in March 2013. An agreement of understanding was signed between CRPR and the Hirosaki University (HU). Prof. Yasushi Marya from HU was asked by the inhabitants from Namie town to be their responsible medical doctor. The inhabitants do not trust the authorities with respect to the risk of exposure to ¹³⁷Cs contamination and seek advice at the HU. This break in trust resulting from bad information policy of the Japanese authorities is an important lesson learnt from the Fukushima accident.

7. Information about planned project on biomarkers in Sami people from the area of Norway

Andrzej

Andrzej informed about the plans to run a research project aiming at analysing biomarkers of exposure to ¹³⁷Cs in samples from Sami people living in the area of Røros. It is intended to submit an application to NKS. Astrid Liland from Strålevern (Norway) will coordinate the application.

8. Current status of EU-funded projects at CRPR

Mats/Andrzej

Clare sent a report (attached) about the status of the FP7-funded projects STAR and COMET in the field of radioecology. Mats reported about the status of OPERRA (will kick off in June). Andrzej reported about the negative outcome of project applications to the last call of SECURITY.

9. Economy for 2013

Andrzej

Andrzej informed that CRPR received support from SSM and SKB that secured the budget for 2013.

10. Planning for activities 2013

Eva FA

An application from Ulrik Kautsky was received to support the seminar entitled "Humans and Ecosystems Over the Coming Millennia: A Biosphere Assessment of Radioactive Waste Disposal in Sweden". The seminar will take place on September 26th. The Board decided to support the seminar with a maximal amount of 30 000 SEK. Andrzej will inform Ulrik about the possibility to organise the seminar at the Naturhistoriska riksmuseet, where there is no charge. Ulrik may contact Mats for details.

Andrzej informed about the plans to organise, together with Iuliana Dasu, a workshop on biological mechanisms of radiotherapy. The workshop is planned for the winter time.

11. How to involve more groups in the CRPR activities

Eva FA

It was suggested to enlarge the CRPR board by inviting associated partners, who may become full members of the board in the future. According to the bylaws, the content of the board is decided by the SU chancellor, so a simple modification is not possible. It was decided to invite Swedish scientists active in the radiation research field in different centres. A meeting will be organised with them in connection with the next Board meeting. The board meeting can take place as usually in the morning and the meeting with the associated partners – in the afternoon. All board members should think about possible names of people that could be invited. The meeting agenda should include the formation of an umbrella organisation (society) to bring together the currently fragmented radiation

research societies in Sweden. Moreover, the candidates for partners should be asked beforehand to prepare ideas about future activities of the CRPR.

In this context the issue of PhD courses in physics was discussed. A number of issues that are relevant for education in the field of medical radiation physics are not taught. Hooshang will write a summary of courses that he can offer and that can close the gap.

12. Additional questions

Eva FA

Mats informed about the reorganisation at SSM. Fredrik Hassel became the deputy CEO responsible for representing SSM at international organisations. Annelie Hällgren became the head of the Development Department that is subdivided into 3 units: 1) the Research and Development Unit with Eva Simic as head, 2) the Law Unit and 3) the Communication Unit. It was decided that Eva F-A will contact Mats Persson - the CEO of SSM – and ask for a meeting with her and Andrzej, where they plan to discuss issues related to the importance of research funded by SSM.

Coming meeting: possible dates are 27/9, 30/9, 2/10, 3/10, 4/10. Andrzej will organise a Doodle poll.

Stockholm 30 september 2013

Eva Forssell-Aronsson



Minutes of the board meeting of CRPR 30th September, 2013, 10.00-12.30 MBW – Runströmrummet Stockholm University

People present: Eva Forsell-Aronsson, Hooshang Nikjoo, Mats Harms-Ringdahl, Andrzej Wojcik, Eva Simic and Clare Bradshaw.

1. Opening of the meeting

Eva FA

Eva opened the meeting and welcomed all participants.

2. Approval of agenda

Eva FA

The agenda was approved. Eva Simic was asked to report on the current situation at SSM under point 10: additional questions.

3. Minutes from the meeting 2013 05 30

Eva FA

The minutes were approved after small corrections by Eva Simic regarding details of SSM structure (point 12).

4. Courses for journalists on radiation risk

Andrzej

Andrzej will contact Pelle Zetterberg from Vetenskapskanalen and use his help to organise a short course (half a day max). It was suggested to prepare a list of experts in different fields of radiation research that would be handed over to journalists. Journalists should also report on the problems that they encounter when carrying out the job of a scientific journalist.

5. Education program on radiation effects in schools

Andrzej

Eva FA confirmed that the text book in physics "Heureka! - fysik för gymnasieskolan, av Lars Bergström" is excellent and there is no necessity to change the content of available books. Rather, teachers should be offered the possibility to educate in the field of radiation protection and risk. Mats mentioned an open evening course in toxicology organised by Dag Jenssen that is vividly attended by different listeners. KVA has a special program on school education and Eva FA will find out if they are interested in helping organising courses. Eva will contact the head of the KVA program and ask him to attend a coming CRPR board meeting.

6. Current status of EU-funded projects at CRPR

Mats/Andrzej

Mats reported on the progress of DOREMI (that will run out by the end of 2015). An open call for projects will be published in November 2013. Only non-members will be eligible to apply. CRPR has recently received a 2-year DOREMI project that is coordinated by Siamak Haghdoost. Andrzej reported on progress of OPERRA and RENEB projects. Clare reported shortly on STAR and COMET projects. Eva FA will attend the MELODI meeting in Brussels (2013 $10\ 07\ -10$) as a member of the scientific committee. Mats (representing CRPR), Andrzej and Siamak will also attend the meeting.

7. Economy for 2013

Andrzej

Andrzej informed that the current status of the budget is around 200 000 SEK. Andrzej will apply for support from SSM and SKB for 2014.

8. Planning for activities 2014

Eva FA

Clare applied for CRP support of a workshop "Ecological risk assessment of radiation - putting the ecosystem approach into practice" to be organised by the International Union of Radioecology and Stockholm University on 18-20 December 2013 at SU. The CRPR decided to support the meeting with 45 000 SEK.

Three lectures are planned in autumn 2013: by Bill Morgan about low dose ffects, by Jan Johansson about Fukushima and by Alexander Georgakilas about complex DNA damage.

Hooshang plans to organise a course on selected aspects of microdosimetry and perhaps on risk estimation following exposure to ionising radiation. Iuliana Dasu and Andrzej plan a seminar on biological basis of radiotherapy. Andrzej will also check the possibility to invite a representative from UNSCEAR to report about the UNSCEAR Fukushima health effects report and the report on attribution of health effects (probability of causation). Andrzej will also contact SWE-RAYS for a report on their activity 2013 and will update the CRPR web page with the correct link to the new SWE-RAYS webpage.

9. How to involve more groups in the CRPR activities

Eva FA

The decision was confirmed to invite Swedish scientists active in the radiation research field in different centres to participate in a meeting that will take place on December 4th, after the CRPR board meeting. The aim is to discuss the possibility of forming an umbrella organisation (society) to bring together the currently fragmented radiation research societies in Sweden. Andrzej will prepare the agenda of the meeting in collaboration with the CRPR board members.

10. Additional questions

Eva FA

Mats reported about a meeting at SSM with Ingemar Lund concerning uncertainties about how MELODI will function in the future. The main open question is if MELODI will insist on creation of a pan-European funding platform for research projects in the low dose field that will be put together from dedicated national funds. Such strategy may lead to strong protest from member states that currently fund their own research. The further development will be followed by Mats who represents CRPR at MELODI and by Eva FA who is a member of the scientific committee.

Eva S reported on the situation at SSM. An initiative was started to create a common research strategy including both radiation protection and nuclear safety. A new management model is discussed. Research days (forskardaggarna) will be organised on 24-26 October. One-year projects will again be announced in 2014.

It was decided that the coming meeting will tal	ke place on 4 th December 2013.
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Stockholm 30 September 2013

Eva Forssell-Aronsson



Minutes of the board meeting of CRPR 4th December 2013, 10.00-12.30 MBW – Room E515 Stockholm University

People present: Eva Forssell-Aronsson, Mats Harms-Ringdahl, Andrzej Wojcik and Eva Simic.

1. Opening of the meeting

Eva FA

Eva opened the meeting and welcomed all participants.

2. Approval of agenda

Eva FA

The agenda was approved following some corrections (2013 changed to 2014 in points 6 and 7). Eva Simic was asked to report on the current situation at SSM (new point 9) and Mats was asked to report on the problem of the financing policy of projects by EURATOM during 2014 and under Horizon 2020 (new point 10).

3. Minutes from the meeting 2013 05 30

Eva FA

The minutes were approved.

4. Course for journalists on radiation risk

Andrzej

Andrzej reported that he contacted Pelle Zetterberg from Vetenskapsradion at the beginning of October to organise a short course (half a day max). Pelle was very positive, but said that his wife is expecting a baby in October/November, so he would take a short brake. Andrzej contacted Pelle again in mid-November, but received no answer. Andrzej will now contact him again. The CRPR council stressed that the organisation of the course is an important initiative and should be pursued.

5. Current status of radiation biology research at MBW

Andrzej/Mats

In January 2013 the former departments GMT (genetics, microbiology and toxicology), WGI (Wenner-Grens institut) and MolBio (molekylär biologi) were merged to form MBW (Molekylär Biovetenskap - Wenner-Grens institut). The merging coincided with the retirement of several GMT professors, 3 of whom were active in the areas of toxicology and radiation biology. The council of MBW is not interested in these research areas and only one of the retired professors will be replaced by Andrzej Wojcik, thanks to an earlier agreement that he has had with the GMT council. During the early 2013 a plan was born that the former toxicology and radiation biology groups would split from MBW and prepare for merging with researchers from Analytical Chemistry and Environmental Chemistry. This strategy was believed to allow securing funding (from the former GMT) for new positions in

toxicology/radiation biology. In November 2013 Anders Karlhede, the vice-chancellor of SU, decided to stop this process, as it would jeopardise the financial situation of MBW. Given the now present lack of teaching power, the MBW council decided to close down the Master programme in toxicology/radiation biology. This means that education in radiation biology at SU will be reduced to a single 10 week course organised by Andrzej and Siamak Haghdoost. The question is how far this fulfils the demand of the Swedish government that education in the field of radiation biology is offered at the SU. On 14/11 Andrzej informed Johan Friberg and Fredrik Hassel from SSM about the situation and asked for a meeting. An appropriate meeting time is now being discussed.

The situation was discussed. It is still possible to merge with Analytical Chemistry and Environmental Chemistry but not before 2015 and provided that these institutions will still be willing to pursue the idea. Alternative possibilities were discussed: merging with medical physics of SU and/or with the planned medical radiation research centre at KI.

6. Economy 2014 Andrzej

Andrzej informed that the current status of the budget is around 150 000 SEK. Andrzej applied for support from SSM and SKB for 2014. The application to SSM includes money for 20% of engagement for Mats to represent CRPR and secure its interests at MELODI.

7. Planning for activities 2014

Eva FA

Funds are reserved for Hooshang's course on selected aspects of microdosimetry and perhaps on risk estimation following exposure to ionising radiation. It is not sure if the course will take place, but the CRPR council hopes that it will. Two seminars will take place in January 2014 in connection to PhD defences: by Wolfgang Dörr (January 9th - defense of Karl Brehwens January 10th) and By Mats Ljungman (January 30th) - defense of Sara Skiöld, January 31st). Iuliana Dasu and Andrzej plan a seminar on biological basis of radiotherapy. The tentative date was set to 4-5 September 2014. Andrzej will contact Jack Valentin and Richard Wakeford to check the possibility to organise a short seminar on the WHO and UNSCEAR/IAEA reports on health effects of Fukushima. Moreover, it is planned to invite Wolfgang Müller (Essen) who is completing the UNSCEAR report on probability of cancer causation by ionising radiation. Andrzej will contact SWE-RAYS for a report on their activity 2013 and suggest the possibility of some support for the 2014 meeting, perhaps to be held together with the new European society EU-Rays. Mats is considering organising a seminar in collaboration with KAR (Kärnsavfallrådet) on risks of health effects of low radiation doses.

8. How to involve more groups in the CRPR activities

Eva FA

The previously planned meeting with Swedish scientists about the status and future of radiation protection research was not realised. Now it was decided to hold the meeting in the afternoon of February 10th, following the meeting of the CRPR council. The overall aim is to bring together the currently fragmented radiation research societies in Sweden. Andrzej will come up with an initial list of names of participants that will be completed by the CRPR council members.

The council also discussed advantages of increasing the number of CRPR council members from the Stockholm area. This would consolidate the currently fragmentised research and teaching activities. It was suggested to ask Jack Valentin from the Swedish Radiation Emergency Medicine Centre – KcRN at Karolinska hospital and Iuliana Dasu from the institute of medical physics of the Stockholm University. New council members are appointed by the Chancellor of the Stockholm University pending a unanimous approval of the current CRPR council members. It is expected that the new members would significantly strengthen the position of radiation biology research at MBW.

9. Situation at SSM Eva S

Eva S reported on the situation at SSM. During the spring of 2014 funding (probably 3+3 years) will be announced for researchers. Details will be decided soon. The total sum of money is ca 75 million SEK. One-year projects will again be announced in 2014 with a total sum of 5 million SEK. Eva will be on maternity leave from January 2014 and will during that time be replaced by Lars Gedda.

10. Financing policy of projects by EURATOM during 2014 and under Horizon 2020 Mats

Since several years Euratom is channelling its funding in the field of radiation protection into supporting research on the effects of low radiation doses. The MELODI network was founded in order to promote the coordinated funding of this research at national levels. It is now planned to realise this goal by only funding projects that will be ran by selected national representatives (radiation protection authorities, research funding bodies or research groups appointed by a government) that will receive 50% of support from the EU, with the rest coming from national funds. The project consortia will then subcontract research groups to carry out the work. These groups will receive 100% funding. If this strategy is put into life it will favour countries with a strong devotion towards radiation research. An efficient use of EURATOM's resources in Sweden requires that the government appoints a national representative body to apply for projects and secures the necessary funds to cover 50% of expenses. Eva Simic will forward this message to SSM and Miljödepartamentet.

11. Additional questions

Eva FA

No additional issues were raised.

It was decided that the coming meeting will take place on $10^{\rm th}$ February 2014.

Stockholm,

Eva Forssell-Aronsson