Keywords: synchrotron radiation, microtomography, phase contrast
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SPBN-12.04 - Opportunities and challenges for achieving high-resolution in vivo tomographic images in animal systems

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The nature of dynamic processes in animals will be discussed. This is an essentially multidisciplinary field to study events which are hierarchically organized across a wide range of spatial and temporal scales. Although several techniques can be used, in this presentation I will talk about synchrotron applications in experiments to address dynamics in animal systems from cells to tissues and whole small animals. The Sirius micro and nano tomography beamline (MOGNO) is planned to have a permanent in vivo experimental setup for small rodents. We will present the challenges and progress of this project from development of electronics to measuring signals from samples (e.g. electrocardiogram) in real-time, to sample environments and radiation impact. Altogether it should be possible to produce prospective and retrospective X-ray computed tomographic imaging with compatible radiation dose and gain in temporal and spatial resolution compared to pre-clinical equipment.

Keywords: bioimaging, synchrotron tomography, radiation damage
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SPBN-13. Multidisciplinar education and the employment perspectives

SPBN-13.01 - Radiation Technology in Health Sciences at IPEN: A multidisciplinary and interdisciplinary Professional Master Degree

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INTRODUCTION
The Professional Master Program in Radiation Technology in Health Sciences (MP-TRCS) of the Nuclear and Energy Research Institute- IPEN/CNEN is a new program, started in August 2019. It is the only graduation program in the country to offer two nuclear reactors for educational purposes, for the development of dissertations, in addition to providing radiopharmaceuticals production in a nuclear reactor, in linear accelerator for radioisotope production, as well light and lasers applications. In addition to the infrastructure, the program has multidisciplinary training advisors working in an interdisciplinary manner who use their vast experience in radiation applied to medicine to guide students in a productive manner with a high degree of excellence.

OBJECTIVES
The MP-TRCS aims to fulfil a growing demand at IPEN/CNEN from professionals working in hospitals and clinics, using ionizing and non-ionizing radiation.

MATERIALS AND METHODS
These students need a more dynamic course directed to the practical professional activities. We have students from the most diverse areas, such as medical doctors, biomedical doctors working in clinical analyses, radiotherapy physicists, physiotherapists, dentists specializing in imaging diagnosis and laser, among others, participating in the front line, who use radiation or assess its impact on their day-to-day routine.

DISCUSSION AND RESULTS
The first students have already begin to present their dissertation. The employability has increased among students enrolled in the program.

CONCLUSION
These professionals bring their experience to the program, which together with IPEN's academic structure and advisors, result in skilled students who are finding numerous career opportunities in the job market.

Keywords: Professional Master degree, interdicisplinarity, Radiation
Supported by: IPEN/CNEN

SPBN-13.02 - Multidisciplinary education: the case of the Radiology Technology Course of the Federal University of Minas Gerais

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The School of Medicine of UFMG hosts three undergraduate courses: Medicine, Speech Therapy and Radiology Technology, all of them with a multidisciplinary approach. The Radiology Technology is one of the courses created by REUNI – Support Program for the Restructuring and Expansion Plan of Federal Universities – and its first class joined in 2010, inaugurating UFMG's performance in the field of technological graduations. The graduate student in the Radiology Technology course at UFMG will be able to