

2010 NuPECC Long Range Plan

Nuclear Physics (NP) is a vibrant area of science in Europe. More than 5000 physicists perform cutting-edge research at various large-scale and smaller national facilities and numerous universities. Owing to the complexity of the European landscape, dozens of funding agencies are involved. Some coordination on the European level is needed. This is the task of the Nuclear Physics European Collaboration Committee (NuPECC), which is an expert committee of the European Science Foundation (ESF). ESF includes 80 member organisations such as science ministries, research councils and academies from 30 European countries.

One of the most influential NuPECC activities has been the periodic review and development of the field by producing long range plans (LRP). The last long range plan was published in 2004. It formed the basis of the NuPECC Large-Scale Facilities Roadmap submitted to the European Strategy Forum on Research Infrastructures (ESFRI) in 2005. ESFRI has been established by the EU Council of Science Ministers to promote the establishment of the European Research Area (ERA) in accordance with the EU Heads of States' Lisbon Agenda. In 2006, ESFRI adopted the NuPECC priorities and identified FAIR and SPIRAL 2 as the two top Nuclear Physics projects, together with three other projects from Astronomy, Astrophysics and Particle Physics.

After five years we now need to develop a new long range plan LRP2010 for nuclear physics in Europe which will cover the next ten to fifteen years. This will be done via a bottom-up process involving the entire nuclear physics community in Europe. Everyone with an interest in the future of European Nuclear Physics is cordially invited to contribute.

At the last NuPECC meeting in Vienna 13-14/3/2009 six main themes were identified:

- 1) Hadron Structure and Spectroscopy (**Ulrich Wiedner**, *Guenther Rosner*, Jochen Wambach)
- 2) Phases of Strongly Interacting Matter (**Paolo Giubellino**, *Jens Joergen Gaardhoeje*, Thomas Peitzmann)
- 3) Nuclear Structure and Dynamics (**Rauno Julin**, *Angela Bracco*, Maria Borge)
- 4) Nuclear Astrophysics (**Brian Fulton**, *Paul-Henri Heenen*, Sotirios Harissopulos)
- 5) Fundamental Interactions (**Nathal Severijns**, *Eberhard Widmann*, Klaus Jungmann)
- 6) Nuclear Physics Tools and Applications (**Sylvie Leray**, *Philippe Chomaz*, Eugenio Nappi),

Six Working Groups (WGs) were set up to discuss the future of each theme. Each WG has two NuPECC members but will be chaired by a prominent non-NuPECC expert in each field (names in bold). Together with the two NuPECC representatives they will nominate around

ten additional members for each WG. The first NuPECC member listed for each WG is a member of the LRP2010 Steering Committee (names in italic).

The anticipated timelines are as follows.

1. The six WGs will meet separately in summer 2009 to develop their strategy, review their field, identify new projects to be supported and start outlining the content of their contribution to LRP2010.
2. The European NP community will discuss the initial deliberations of the various WGs at a workshop tentatively scheduled to take place at GSI Darmstadt in the first week of October 2009.
3. In the following half-year, the WGs will refine their parts of LRP2010. The LRP2010 Steering Committee will formulate the more general aspects of the Long Range Plan and discusses them, together with the six main themes, at the 2010 NuPECC spring meeting.
4. The result of this debate will be presented and decided upon at a conference in summer 2010.
5. Final editing of LRP2010 will take place after the conference.
6. Publication of LRP2010 is anticipated towards the end of 2010.

The process above will be integrated into ESF's Forward Look mechanism and will, *inter alia*, advise ESF on which large-scale nuclear physics facilities in Europe should be upgraded or constructed. ESF in turn has been asked by ESFRI to advise them on the strategy to promote the European Research Area in the EU Framework 8 Programme, which will start in 2013.