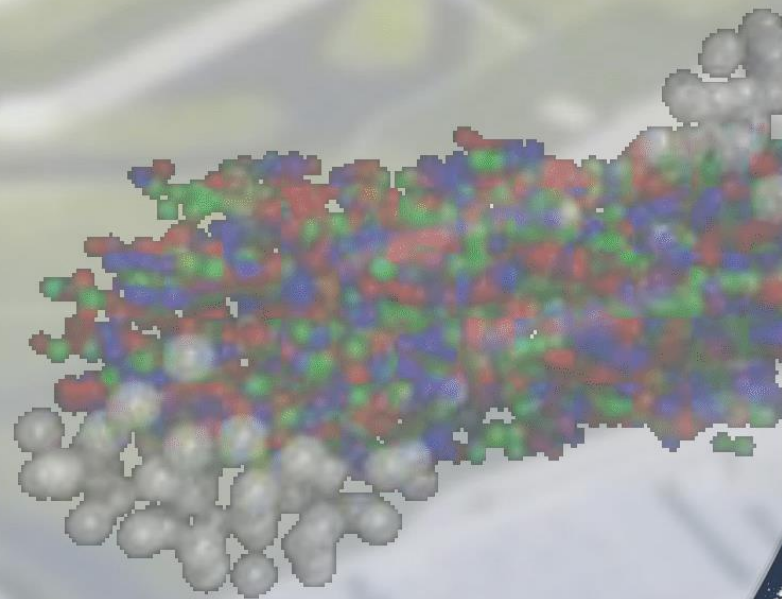
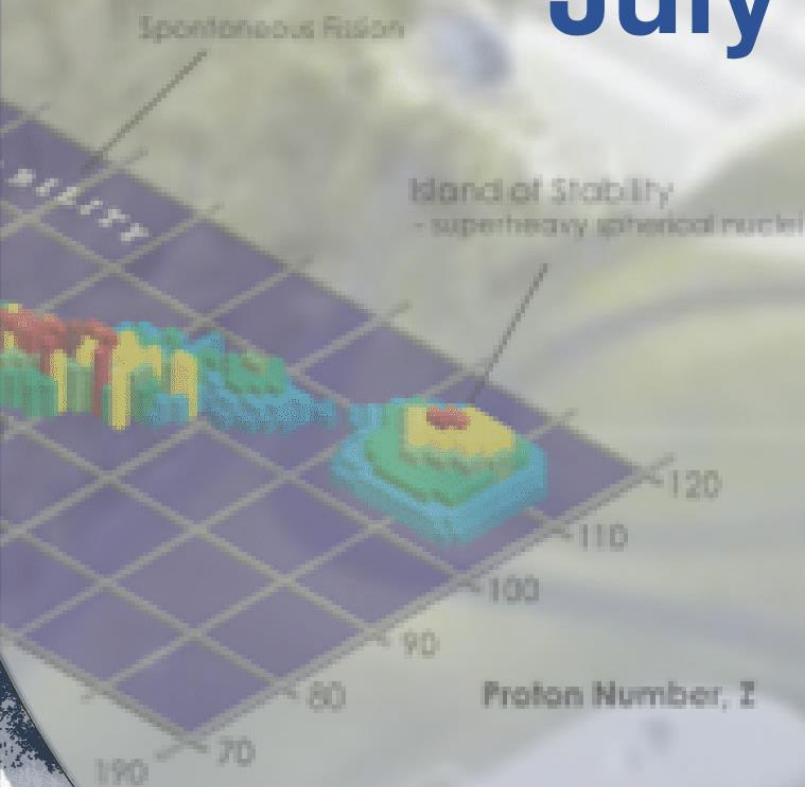


NuPECC Self-Evaluation July 2020



Angela Bracco – Chair of NuPECC 2014-2017
Marek Lewitowicz – Chair of NuPECC from January 1st, 2018
Eberhard Widmann – Deputy Chair of NuPECC from January 1st, 2018
Gabriele-Elisabeth Körner – Scientific Secretary of NuPECC

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1 CONTEXT

1.1 WHAT IS NuPECC?

The Nuclear Physics European Collaboration Committee is an Expert Committee of the European Science Foundation established in 1988.

The objective of NuPECC is to:

- develop the strategy for European Collaboration in nuclear science by supporting collaborative ventures between research groups within Europe, and
- promote nuclear physics and its trans-disciplinary use in applications for societal benefit.

In pursuing this objective the Committee shall:

- **provide advice** and make strategic recommendations to funding agencies and decision-making bodies;
- **define a network** of complementary facilities within Europe and encourage optimisation of their usage;
- **provide a forum** for the discussion of the provision of future facilities and instrumentation;
- **contribute to public** education and awareness.

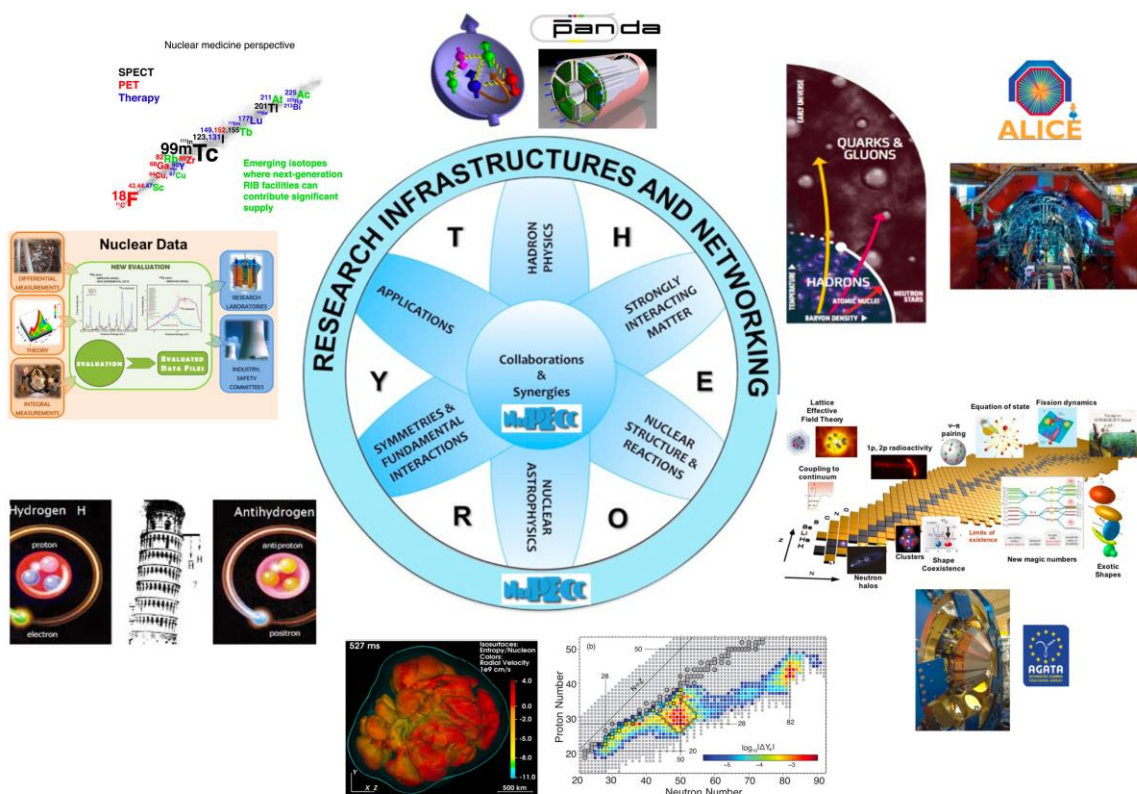
The current 27 members from 21 European countries, 4 ESFRI-list nuclear physics facilities and JINR Dubna and 3 associated members of the Committee are indicated in the following figure (a detailed list can be found at <http://www.nupecc.org/?display=staff/list>):



NuPECC members and associated members

The member states/organisations appointed to the committee one or two representatives and today the committee is composed of 34 representatives of members, associated members and the permanent Scientific Secretary. 9 permanent observers from ESF, NPD/EPs, ECFA, NSAC, ANPhA, ALAFNA, APPEC, CINP and IAEA are invited to the regular NuPECC meetings. A full list of the NuPECC representatives since 2012 can be found in [Annex 2](#).

The NuPECC expertise covering a broad spectrum of topics entering in the definition of nuclear physics and related areas in Europe is illustrated in the figure below.



More than 20 nuclear physics facilities and nuclear theory activities are overarching all scientific topics. This rich and diverse ecosystem seeks for development of synergies and strong collaborations – one of the main objectives of NuPECC. The Committee, following the evolution of nuclear physics and of the surrounding world, constantly develops its actions and improves its organisation, but NuPECC also represents a good thirty-year-old tradition and requires certain continuity and regularity in its activities.

The Committee operates through three plenary meetings scheduled every year in one of the member states which allow for an exchange of information on major European and international projects and on the status of nuclear physics in the member states. The meetings and numerous informal discussions happening on these occasions prepare future NuPECC activities, look for solutions to sometimes complicated international problems and simply allow for better understanding of each other. A full list of the Committee plenary meetings can be found in [Annex 3](#).

In addition to the plenary meetings, NuPECC creates ad-hoc thematic working groups. The newly created management group follows all NuPECC activities on a regular basis in-between the plenary Committee meetings.

1.2 NUCLEAR PHYSICS IN EUROPE TODAY AND THE ROLE OF NuPECC

The recent completion and publication of the 2017 NuPECC Long Range Plan (LRP) ([paragraph 2.1](#)) has defined a clear strategy for development of nuclear physics in Europe. The LRP has indicated priorities and established a set of recommendations covering the full spectrum of nuclear physics in Europe, from hadron physics and phases of strongly interacting matter, through nuclear structure, dynamics and astrophysics, symmetries and fundamental interactions to applications and societal benefits.

One of the key recommendations proposed in the LRP is related to the completion and operation of European nuclear physics facilities, with FAIR as the flagship ESFRI infrastructure. Strong support is given to the construction, augmentation and exploitation of world leading ISOL facilities (ISOLDE, JYFL, GANIL-SPIRAL2, SPES and hopefully soon ISOL@MYRRHA). ALICE and the heavy-ion programme at the LHC, including its planned experimental upgrades, is strongly supported, and NuPECC promotes at all occasions the Extreme Light Infrastructure Nuclear Physics (ELI-NP) facility in Romania, which has just started operation, opening new exciting possibilities in nuclear and interdisciplinary research with lasers and in the future with gamma beams. NuPECC in its actions strongly emphasizes the importance of theory, overarching all domains of nuclear science, and is in particular supporting a further development of the European Theory Centre, ECT*, in Trento.

NuPECC, together with the whole European nuclear physics community, is facing the challenging task of implementing the above LRP recommendations. In order to reach this goal, which became the first priority of its activity in 2018, NuPECC is using and will continue to develop all traditional tools at its disposal, such as presentations of the LRP to national and international communities at meetings, seminars and conferences, and wide distribution of the LRP document and its summary brochure towards scientists, politicians and the general public.

Despite of the current political situation in Europe, the Committee deeply believes that European nuclear physics, and science in general, should continue a process of integration and tighter collaboration between all European countries. Thus, NuPECC supports and follows up the EU Integrating Activity projects in nuclear physics: the ongoing HORIZON 2020 ENSAR2 and STRONG-2020 EU projects.

Nuclear physics has long been a worldwide endeavour, and its international dimension is taking more and more importance. NuPECC is continuing to work in a coordinated manner with IUPAP and sister organisations in Asia and the Americas.

2 ACTIVITIES

2.1 NuPECC LONG RANGE PLAN 2017

The Long Range Plan is an important, visible and impactful tool to establish the future directions in the field via a concerted action by the whole European nuclear physics community and its representative, NuPECC.

NuPECC in its October 2015 meeting at GANIL, Caen, France, initiated the process for the LRP 2017. It defined the subfields of nuclear physics to be addressed and established Working Groups spanning the areas of nuclear physics and its applications:

- Hadron Physics
- Phases of Strongly Interacting Matter
- Nuclear Structure and Dynamics
- Nuclear Astrophysics
- Symmetries and Fundamental Interaction
- Applications and Societal Benefits.

Conveners for the six themes were selected by NuPECC among the most prominent experts in their fields who are not NuPECC members. In addition, three Liaison Members of NuPECC were assigned to each Working Group. The Conveners established their respective working groups in close contact with NuPECC. The working group members were selected to provide a broad representation of specific topics in the subfields. They were given the charge to delineate the most exciting physics in their subfields, to highlight recent achievements, and to discuss the future perspectives, involving the whole nuclear physics community.

Draft reports from the Working Groups were presented and discussed at the NuPECC Meetings in 2016 at ECT* Trento in March, in Uppsala in June, and finally in October 2016 in

Vienna.

A Town Meeting to discuss the NuPECC LRP was held at the “Darmstadtium” hall in Darmstadt, from January 11 – 13, 2017 <https://indico.gsi.de/event/5177/>. Preceding the Town Meeting, preliminary reports of the Working Groups were posted on the NuPECC website.



Town meeting in Darmstadt January 2017

The Town Meeting was attended by almost 300 participants, including many young scientists. The programme contained sessions on future large-scale facilities, the European and international context including presentations from NSAC (USA), ANPhA (Asia) and CERN and reports by the conveners of the Working Groups. The Town Meeting concluded with a general discussion.

Following the Town Meeting, NuPECC discussed and finalized the recommendations in its meeting at CERN in March 2017. During this period, the Steering Committee's members, acting also as editors, implemented changes and suggestions from the community made during and following the Town Meeting.

The result of this effort is the report “NuPECC Long Range Plan 2017: Perspectives for Nuclear Physics”.

After a short introduction, the report features the recommendations of NuPECC for the development of nuclear physics research in Europe followed by a comprehensive chapter on large and smaller facilities - existing, under construction or planned.

The various reports of the Working Groups follow and include specific recommendations related to the different research areas.

In addition to recommendations, a clear and important message of the Long Range Plan is that through the collaborative effort of the European community Europe can maintain a leading position in the field and advance it further.

The NuPECC Long Range Plan 2017 “Perspectives in Nuclear Physics” was published in 2017, and directly sent to about 3500 nuclear scientists via the NuPECC mailing list. In addition, it was sent to 89 members of European funding agencies/ESF member organisations, together with a Brochure with highlights and recommendation. The NuPECC Long Range Plan 2017 (LRP2017) can be downloaded from:

<http://www.nupecc.org/pub/lrp17/lrp2017.pdf> .

The LRP2017 was presented on several occasions at workshops and conferences both during its preparation and after its completion.

Among the presentations given during the preparation phase there is one at the NSAC meeting on 23 March 2016 in Washington, USA.

Soon after completion it was presented and discussed at:

- at the CERN Scientific Policy Committee (SPC) in June 2017
- at an ECFA meeting at CERN in November 2017.
- at meeting of the Scientific Council of JINR (Dubna) in February 2018.

An event was organized by NuPECC in Brussels in November 2017 to present officially the LRP2017 in the presence of the representatives of the funding agencies and ministries, the Chair of ESFRI, of EPS and EU officers responsible for the research infrastructures. The event was well attended, including the Chair of NSAC (USA) and ANPhA (Asia) and the scientific secretary of the WG.9 of IUPAP. In that occasion the Brochure on the LPR was distributed and several press releases were issued, in particular in newsletters of the funding agencies and physical societies.



LRP presentation in Brussels Nov. 27, 2017

The LRP 2017 was summarized and commented in the CERN Courier 08/2017 and the Europhysics News 48-4. The publication of the NuPECC LRP was also largely announced and commented in the newsletters of several funding agencies and societies.

2.2 NuPECC TASK FORCE

After the publication of the NuPECC Long Range Plan in 2017, the Committee, following its major mission, looked for a new form of actions related to implementation of the LRP recommendations in the European countries. At the NuPECC meeting in Amsterdam in March 2018 the NuPECC Task Force in charge of promotion and lobbying for the implementation of the LRP was proposed by the Chair and approved by the Committee.

The Task Force is composed of

- NuPECC representatives of the ESFRI facilities under construction or commissioning, namely of ELI-NP, FAIR/GSI, GANIL/SPIRAL2, JINR/NICA&SHEF,
- NuPECC representatives of a visited country/institution and
- NuPECC Chair, Deputy Chair and NuPECC Scientific Secretary.

The modus operandi of the Task Force is the organisation of and participation in meetings with and national ministries/funding agencies involved in the decision-making process and

funding of the research in nuclear physics in Europe and major European organisations (EC, IAEA, ESFRI, CERN, JINR, ...).

In 2018-2020 the NuPECC Task Force meetings took place in Norway, UK – STFC, Romania, IAEA, Poland, JINR Dubna, France – CEA, IN2P3 and Spain (March 2020). Further meetings are planned in the end of 2020 – beginning of 2021 in Finland and Italy.

The composition of delegations, agendas and presented slides of the meetings can be found at <http://www.nupecc.org/restricted/taskforce.php>.



STFC – NuPECC Task Force meeting in August 2018 in Swindon, UK (left) and IAEA - NuPECC Task Force meeting in April 2019 in Vienna, Austria (right)

The overall conclusion of the Task Force meetings so far is that in the large majority of the visited countries the scientific policy of ministries/funding agencies agrees with the priorities defined in the NuPECC LRP 2017. Most of the countries focus their support on the scientific activities related to the existing and/or new ESFRI roadmap nuclear physics infrastructures. The implementation of the LRP strongly varies from country to country in terms of dedicated financial and human resources. Decision-making bodies and research organisations in different EU countries have very diverse structures what implies that NuPECC should have an approach adapted to each country and institutions. In this context, the role of representatives of the NuPECC members and their knowledge of the local policy makers in the organisation of the Task Force meetings is of particular importance.

The NuPECC Task Force meetings are today the most visible activity of the Committee towards ministries, funding agencies and large infrastructures of the European countries.

2.3 NuPECC AND ECT*

One of the important activities of NuPECC towards the development of theory in nuclear physics is related to ECT*(<https://www.ectstar.eu>). The NuPECC Chair is a member of the ECT* Scientific Board which takes decisions on the content and shape of research activities of

the Centre. Two Board meetings are every year dedicated to the approval of the proposed workshops, training courses and hiring of physicists at ECT*. The ECT* director reports on the Centre activities at every regular NuPECC meeting. ECT* and its activities are presented in the NuPECC LRP as a highlight and one of the major priorities for the nuclear physics in Europe. ECT* and its role are presented in all talks given by NuPECC Chairs.

NuPECC Chairs have also actively participated in the 20th and 25th anniversary of the ECT* in 2013 and 2018, respectively (see [Celebration of 20 and 25 years of ECT*](#)).

3 NEW INITIATIVES

3.1 DEFINITION OF PRIORITIES FOR THE NuPECC ACTIVITIES IN 2018-2020

Since 2018 priorities for actions to be conducted by NuPECC were based on the collective work of the Committee members answering the questionnaire proposed by the NuPECC management group (the new management structure of NuPECC is described in the [paragraph below](#)) in February 2018; 13 questions established by the NuPECC management with notation of priorities Low-L (1 point) /Medium-M (2-points)/High-H (3-points)/Very High-VH (4-points) were submitted for consideration. The questionnaire was sent on February 1st, 2018 and 19 over 31 NuPECC representatives answered it by March 5th, 2018. Over 102 additional suggestions and comments were also collected and analysed by NuPECC Chair and Scientific Secretary.

The results of this survey are shown in the table below.

Questionnaire for NuPECC members (weighted results)					
Question	LOW (1)	MEDIUM (2)	HIGH (3)	VERY HIGH (4)	Sum
1. Follow-up and lobbying for the implementation of the NuPECC Long Range Plan in the NuPECC member states and European Union political bodies		4	15	44	63
6. Publication of the Nuclear Physics News		4	13,5	46	63
13. Communication and outreach activities in the framework of PANS and NuPEX		12	25,5	14	51,5
10. NuPECC Web site update with a new content and a modern presentation	1	7	16,5	24	48,5
11. NuPECC sponsorship of nuclear physics conferences, symposia and schools	2	12	16,5	18	48,5
3. Support to and follow-up of the EU Integrating Activity projects (eg. ENSAR2, Hadron Physics)	1	4	21	32	48
9. Elaboration of the NuPECC Special Reports	2		31,5	14	47,5
8. Regular update on the activities of sister organisations: IUPAP (C12 & WG9), NSAC, NSERC, ANPhA, ALAFNA	2	14	18	12	46
4. Stronger links and joint actions with other expert board committees (eg. ECFA, APPEC)	3	11	22,5	8	44,5
5. Joint actions of NuPECC and Nuclear Physics Board of the European Physical Society	1,5	21	18		40,5
2. Get on board new NuPECC members and associated members	2,5	19	6	8	35,5
12. Creation of a regular edition of NuPECC Newsletters	5	12	9	8	34
7. Joint actions with the European Science Foundation	6	16	6		28

The priorities defined through this survey guided the initiatives and activities of the Committee in 2018 – 2020.

Another questionnaire was proposed to the NuPECC members at the mid-term of the Chair's mandate in May-June 2019. A purpose of this questionnaire was to collect opinions on the NuPECC activities related to priorities defined in March 2018 and to suggest new actions or improvements. The results of the survey based on 20 received answers are summarized in the following table.

Mid-term Questionnaire for NuPECC members					
Priority (as defined in 2018)	Excellent	Satisfactory	Not satisfactory	Without Opinion	Weighted Average
2. Publication of the Nuclear Physics News	14	5		1	53
4. NuPECC Web site update with a new content and a modern presentation	9	9	1	1	50
1. Follow-up and lobbying for the implementation of the NuPECC Long Range Plan in the NuPECC member states and European Union political bodies	8	9	1	2	45
5. NuPECC sponsorship of nuclear physics conferences, symposia and schools	10	7	1	2	45
9. Stronger links and joint actions with other expert board committees (eg. ECFA, APPEC)	10	6	2	2	44
8. Regular update on the activities of sister organisations: IUPAP (C12 & WG9), NSAC, NSERC, ANPhA, ALAFNA	6	12		2	42
6. Support to and follow-up of the EU Integrating Activity projects (eg. ENSAR2, Hadron Physics)	4	11		5	34
11. Get on board new NuPECC members and associated members	5	10		5	35
New organisation of the NuPECC management	6	5		7	28
3. Communication and outreach activities in the framework of PANS and NuPEX	2	8	5	5	27
7. Elaboration of the NuPECC Special Reports	1	8	3	8	22
10. Joint actions of NuPECC and Nuclear Physics Board of the European Physical Society	1	5	2	12	15
13. Joint actions with the European Science Foundation		4	2	14	10

The mid-term questionnaire allowed for the internal evaluation of the NuPECC activities and for the definition of tasks requiring further improvement, in particular those mentioned in the table above in yellow: communication and outreach activities, elaboration of NuPECC Special Reports, joint actions of NuPECC with NPD of EPS and joint actions of NuPECC with the European Science Foundation. The new actions related to the above four items triggered by the mid-term questionnaire are presented in the chapters on [outreach](#) and on [relations to other bodies](#).

3.2 SUPPORT ACTIONS AND LOBBYING

LETTERS OF SUPPORT

One of the important missions of NuPECC is the support of the European projects and initiatives in nuclear physics. One of its forms are letters of support. The following letters were formulated and sent on behalf of the Committee to decision making bodies like European Commission, ministries, national funding agencies and institutions:

- SARAF project in Israel - funded
- Themba Labs new project – funded
- to the Directorate of FBK for ECT*
- H2020 proposal ENSAR2 - funded
- to BMBF for the Nuclear Physics Institute (IKP) of Forschungszentrum Jülich (FZJ)
- to DFG to keep NuPECC within ESF - Science Connect
- to CERN DG concerning TSR@ISOLDE – not funded
- to DG Research of EC for Hadron Physics Horizon project – not funded
- H2020 proposal STRONG-2020 - project funded
- H2020 proposal ESCAPE (European Science Cluster of Astronomy & Particle physics ESFRI research infrastructures) - project funded
- H2020 proposal ERINS – project not funded
- the SLCJ@ECOS proposal in Poland – project not funded
- the RCNP's application to an International Joint Usage/Research Centre of MEXT
- an Exhibition - NP and Cultural Heritage Debrecen as European Capital of Culture 2023 - site not selected
- H2020 IFMIF-DONES Preparatory Phase EU proposal -funded
- EU proposal EUR education in nuclear physics proposal of the University of Caen Normandy – project funded
- Nuclear and hadron physics activities at KVI-CAART
- ACPA - PANS action at the University of Liverpool – project funded
- to FAIR Council for the FAIR facility
- H2020 IFMIF-DONES Preparatory Phase – project funded
- NEWGAIN proposal GANIL – under evaluation

INTERNATIONAL YEAR OF BASIC SCIENCES FOR SUSTAINABLE DEVELOPMENT

Recently NuPECC has joint as a Funding Partner the initiative on International Year of Basic Sciences for Sustainable Development (IYBSSD 2022) signing a dedicated MoU with IUPAP. The Committee and its member organisations are planning to propose and actively participate in the events related to the IYBSSD planned in 2022.

PRESENTATIONS AT THE CONFERENCES, WORKSHOPS AND MEETINGS

In addition to the regular reporting at the NuPECC Task Force, RECFA or ECFA, ANPhA, IUPAP and APPEC meetings, the NuPECC activities and 2017 LRP were presented in 2014-2020 at the following 31 conferences, workshops, seminars and meetings:

- NSAC Long Range Plan Resolution Meeting, Kitty Hawk, USA, April 2015 (AB)
- NSAC meeting at Bethesda Maryland, USA, March 2016 (AB)

- Inauguration of the Scientific Managing Director of FAIR and GSI, Darmstadt, Germany, March, 2017 (AB)
- Science and Policy (SPC) Committee meeting at CERN, June 2017 (AB)
- Academy of Science in Budapest, Hungary, May 2018 (AB)
- X PANS Days, Salamanca, Spain, October 2018 (AB)
- Strategy meeting of INFN, Rome, Italy September 2018 (AB)
- Notre Dame-Europe Symposium on Nuclear Science and Society, London, UK, October 2014 (AB)
- Topical Day on Medical applications of ISOL@MYRRHA, SCK-CEN, Belgium, November 2014 (AB)
- Italy – RIKEN Symposium, RIKEN, March 2016 (AB)
- Workshop at the Italian-French-Polish collaboration, Catania, Italy, April 2016 (AB)
- NuSPIN (within IA ENSAR2), San Servolo, Venezia, Italy, June 2016 (AB)
- Workshop on the SPES Facility at LNL, Legnaro, Italy October 2016 (AB)
- EURISOL_DF - EPS Divisional Conference, Leuven, Belgium, October 2016 (AB)
- Workshop of NuSPIN (within IA ENSAR2), GSI Darmstadt, Germany, June 2017 (AB)
- Seminar at the Warsaw University, Poland January 2018 (ML)
- IN2P3 Lab directors meeting, Paris, France, February 2018 (ML)
- JINR Scientific Council, Dubna, Russia, February 2018 (AB, ML)
- Directorate Irfu/CEA Saclay, France, March 2018 (ML)
- French-China Nuclear Physics Symposium Caen, France, April 2018 (ML)
- Welcome at the 25 years ceremony of ECT*, Trento, Italy August 2018 (ML)
- Zakopane Nuclear Physics Conference, Zakopane, Poland, August 2018 (ML)
- IUPAP, WG.9 meeting, Bologna, Italy, September 2018 (ML)
- NP Division EPS meeting, Bologna, Italy, September 2018 (ML)
- ESF Workshop in Florence, Italy, October 2018 (ML)
- 25 Years of NuPECC, Bucharest, Romania, October 2018 (past and present NuPECC Chairs)
- Seminar at IFJ, Cracow, Poland, January 2019 (ML)
- Open Symposium Update of European Strategy for Particle Physics, Granada, Spain, May 2019 (ML)
- XXXVI Mazurian Lakes Conference on Physics, Piaski, Poland, September 2019 (ML)
- JENAS ECFA-NuPECC-APPEC symposium, Orsay, France, October 2019 (ML)
- APS Virtual April Meeting, April 18-21, 2020 (ML)

NuPECC SUPPORT FOR CONFERENCES

In 2018 NuPECC has initiated a new action aiming at the support of Nuclear Physics conferences and schools.

Conferences fulfilling the following criteria and requirements are supported:

- Conditions: ≥ 100 participants, conferences taking place in Europe on nuclear physics and related areas, best poster competition
- Broader scope conferences, not workshops or users' meetings
- Typical support 1-1.5 k€ (maximum 2 k€) for poster competition winners, general public lectures and "PANS-like" actions

- NuPECC logo on conference poster and other conference materials, NuPECC roll-up posted, best posters ceremony organized.

Decisions on support are prepared by NuPECC management group (after contacts with organisers) and approved at regular NuPECC meetings.



NuPECC Best Posters prize at the INPC 2019 in Glasgow

Three conferences were supported in 2018 for total amount of 4000 €, eight in 2019 for total amount of 11000 € and the support was granted to fourteen conferences in 2020 for total amount of 16000 €. The full list of supported conferences can be found in [Annex 6](#). The conferences planned in 2020 were all cancelled or postponed due to the Covid-19 crisis. For the postponed conferences, the NuPECC support remains granted.

The sponsoring of conferences rewards the best scientific results obtained by young researchers through the best poster(s) prize(s) and ceremony as well as outreach activities during the nuclear physics conferences. This action has also significantly increased the visibility of NuPECC in the scientific community.

CELEBRATION OF 25 AND 30 YEARS OF NuPECC

Celebration of 25 years of NuPECC

Although it occurred a few months before the period covered by this evaluation, we like to mention here that in the end of 2013 NuPECC celebrated its 25th birthday. It was felt that a quarter of a century of continuous and successful work of this expert board had to be celebrated and thus a ceremony was organized to focus the attention on this special date and to create a moment of reflection. The event took place in Kraków on October 11, 2013 at the

presence of a number of NuPECC Chairs—Juha Äystö, Angela Bracco, Brian Fulton, Sydney Galès, Muhsin Harakeh, Guenther Rosner—, the present NuPECC members, and the permanent scientific secretary Gabriele-Elisabeth (Sissy) Körner (see photo below). Very interesting talks were given by the Chairs underlying the important actions for our community taken during they presidencies and also the difficulties and challenges that had to face. The content of these presentations together with additional information on the history of NuPECC are well summarized in a special edition of NPN (*Nuclear Physics News*, Vol. 24, No. 3, 2014).



Celebration of 25-Years of NuPECC. The past and present NuPECC Chairs and the Scientific Secretary: from right to left: Muhsin Harakeh, Günther Rosner, Sydney Galès, Angela Bracco, Brian Fulton, Sissy Koerner and Juha Äystö

Celebration of 30 years of NuPECC

In October 2018 NuPECC celebrated its 30th anniversary at the dedicated event organised by the Committee jointly with IFIN-HH and ELI-NP in Bucharest (see <https://indico.ph.tum.de/event/4144/> for the full program and presentations).

The celebration was an excellent occasion to present the history, the past and current achievements of the Committee and was honoured by the presence of the past NuPECC Chairs and official delegations from many NuPECC member states and institutions.



Celebration of 30 years of NuPECC. The past and present NuPECC Chairs and the Scientific Secretary: from right to left: Sydney Galès, Sissy Körner, Muhsin Harakeh, Brian Fulton, Angela Bracco and Marek Lewitowicz

The celebration of the 30 years of NuPECC was also marked with a dedicated Editorial by the NuPECC Chair in the NPN Vol. 29 No. 2 issue in 2019.

CELEBRATION OF 20 AND 25 YEARS OF ECT*

*20 years of ECT**

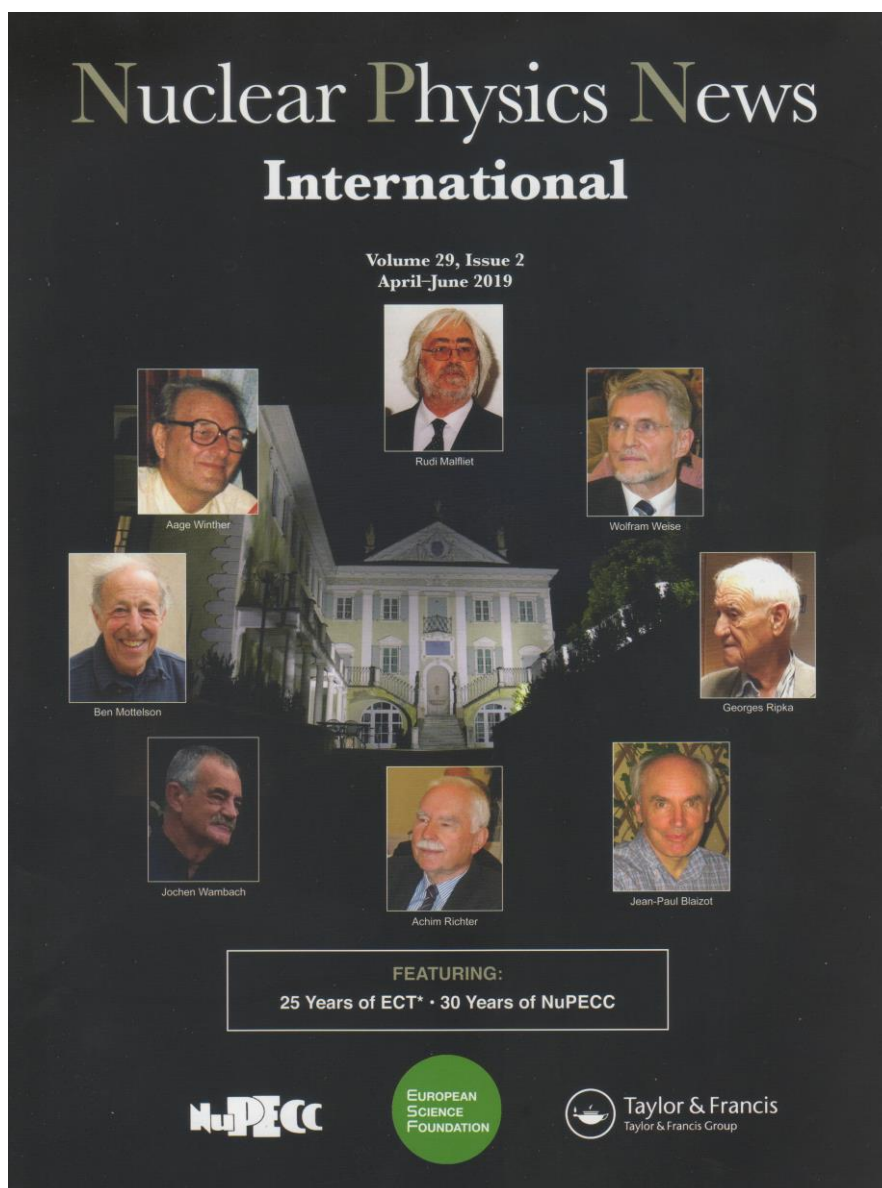
In September 2013 a celebration for the 20th anniversary of ECT* organised by Wolfram Weise, director of the centre at that time, took place in Trento.

The Chair of NuPECC was invited to give a talk on the support of NuPECC during the years to this international centre. Opening talks were also given by the President of FBK and by the President of INFN.

After the institutional talks there were several scientific colloquia from some of the previous directors and from two other scientists strongly connected to the centre. It was illuminating to see how well ECT* has developed during the years and how well it continues to be very active for the progress in nuclear physics and related areas.

25 years of ECT*

The 25th anniversary of ECT* was celebrated on August 31, 2018 in the ECT* Auditorium in Trento. The programme of this event was composed of short addresses from institutions participating in ECT* including NuPECC and of scientific presentations from distinguished physicists Renzo Leonardi, Claudia Ratti, Achim Schwenk, Daniele Binosi, Jim Lattimer and Tommaso Calarco. The talks were dedicated to the history of ECT* and recent achievements in theory related to the Centre activities. An article “The 25th Anniversary of ECT*: Fostering Nuclear Theory in Europe” by Jochen Wambach and Renzo Leonardi was published in the NPN Vol. 29 No. 2 issue in 2019.



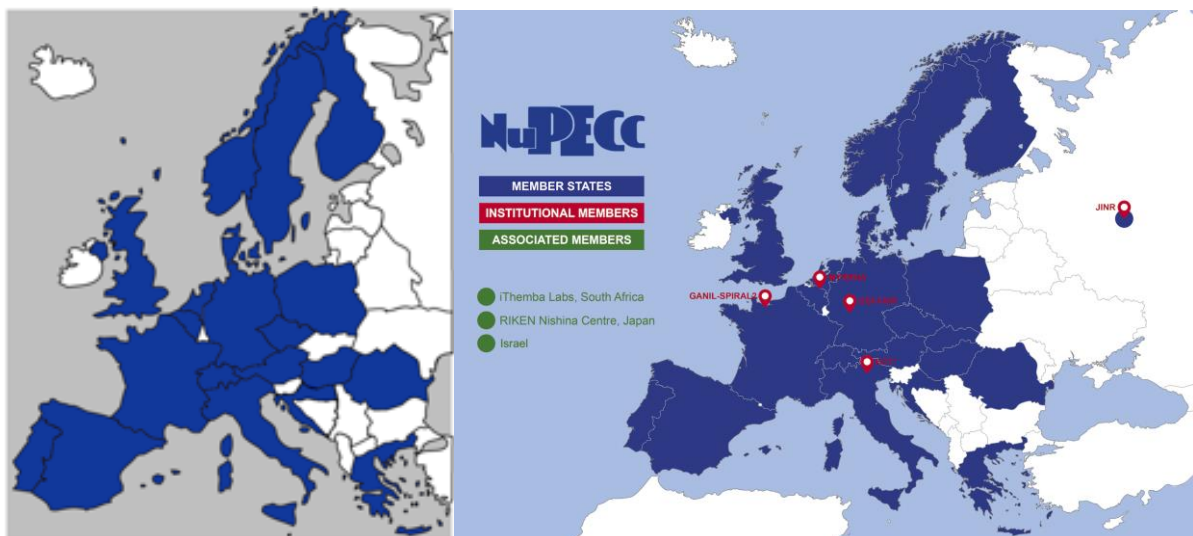
Cover page of NPN Vol. 29 No. 2 with the photos of the past and present directors of ECT*

3.3 NEW MEMBERS, ASSOCIATED MEMBERS AND OBSERVERS

NuPECC is putting a lot of efforts to increase the number of the Committee members, on one side seeking for participation of all European countries with an active nuclear physics community and on another side trying to attract all relevant ESFRI roadmap facilities.

Two major modifications of the NuPECC Terms of Reference created opportunities for new members to join the Committee. The first one is related to a possibility to recognize the ESFRI roadmap nuclear physics infrastructures as full members of NuPECC since 2012. The second has established in March 2018 a NuPECC associated membership dedicated essentially to the countries and organisations outside of Europe and willing to participate in the activities of the Committee.

The figures below illustrate an evolution of the committee membership in the recent years.



NuPECC members in 2013

NuPECC members and associated members in 2020

The development of the Committee in terms of new members, associated members and observers was as follows:

- New NuPECC members
 - FAIR and SPIRAL2 since 2013 and 2014, respectively
 - Slovakia and MYRRHA since October 2019
- Contacts with candidates for new members
 - ELI-NP – on standby

- IFMIF-DONES (ESFRI roadmap) - contact established, waiting for the approval of construction phase of this facility
- Bulgaria - contact re-established in 2020 with the director of INRNE Sofia
- Slovenia – repetitive contacts
- Associated members (non-European countries and institutions) since 2018-2019
 - iThemba Labs,
 - Nishina Centre at RIKEN
 - Israel (since March 2020)
- New Permanent Observers
 - ECFA, IAEA, APPEC since 2018-2019

A following new procedure for acceptance of new members to NuPECC was approved during “Chair’s” management meeting (see [NUPECC Management Group](#)) on March 28, 2018.

Organisations eligible to join NuPECC according to our Terms of Reference should announce their intention to the NuPECC Chair.

If the Chair confirms their eligibility he/she will ask the organisation to send a representative to the next possible NuPECC meeting for a presentation. The NuPECC Terms of Reference should be attached to the letter to make sure the conditions are understood.

- The representative will be asked to send the slides of his/her talk and any other document supporting the application at least 2 weeks before the meeting to the NuPECC secretary who will circulate it among the NuPECC members. If NuPECC members have questions they should be raised immediately to ensure they can be answered during the meeting.
- At the meeting the proposition is presented and discussed in public. In the closed session NuPECC will discuss the application and investigate if a consensus is reached, if not a vote will be called.
- The Chair informs the candidate about NuPECC’s decision.

3.4 MODIFICATIONS OF NUPECC INTERNAL ORGANISATION

The internal organisation of the Committee was strongly modified in the recent years in order to follow the evolution of the nuclear physics landscape (new projects and globalisation of science) and to be able to follow the increasing volume of the Committee’ activities.

UPDATE OF THE NuPECC TERMS OF REFERENCE (TOR)

The following points were added or strongly modified in the NuPECC ToR in in the last three years:

- Modifications related to the new structure of ESF
- Possibility to nominate a NuPECC Deputy Chair (new)

- Status of Associated Members (new)

A first draft of the updated ToR was presented and discussed at the NuPECC meeting at Saclay in October 2017. The revised version prepared by the writing committee was sent for consultation to the NuPECC representatives and ESF on February 1st, 2018 and the revised Terms of Reference were approved the meeting in Amsterdam in March 2018.

Further revision of ToR approved in March 2019 allowed NuPECC to avoid a problem with the quorum necessary to take major Committee decisions thus formalising a possibility to appoint a proxy.

The current version of ToR can be found in [Annex 1](#) and on the NuPECC Website.

NuPECC MANAGEMENT GROUP

Following the modifications of ToR and on the proposal of the NuPECC Chair, Eberhard Widmann was officially appointed as the Deputy Chair at the Committee meeting in March 2018.

The Management Group composed of the NuPECC Chair and Deputy Chair, Scientific Secretary was established in the beginning of 2018. The NuPECC Treasurer became a member of the group in 2019. The tasks of the management group are:

- Detailed and regular follow-up of all NuPECC actions
- Preparation of the NuPECC meetings

The group meets regularly at least once a month at so called “Chair’s” meetings.

MODIFICATIONS OF CONTENT OF NuPECC MEETINGS

The agenda of all regular NuPECC meetings can be found on the NuPECC website.

Since 2018, the agenda of each meeting with a detailed schedule and direct links to presentations were introduced and put on a dedicated indico page. This improvement facilitates the preparation of the agenda by the Management Group and allows for an easier follow-up of the Committee meetings.

4 PUBLICATIONS

A full list of 2012-2019 NuPECC publications can be found in [Annex 4](#). The most important publications are shortly described in the following chapters.

4.1 NUCLEAR PHYSICS NEWS

Nuclear Physics News, the well-known quarterly magazine for the community, is being published in its 30th year now with the publisher Taylor & Francis. For each issue 6400 copies are printed and distributed world-wide with 2700 copies sent to individual colleagues in

Europe, 1400 in bulk to NuPECC Members and Observers as well as laboratories in Eastern Europe, Latin America, Africa, Asia and Australia, 1000 to MSU for distribution in the USA, 300 to RIKEN for Japan, 160 to TRIUMF for Canada and 250 to Fudan University (Shanghai) for China; the rest is distributed at nuclear physics conferences, workshops and schools upon request.

A few special editions were prepared with the following topics

- Vol. 24 No. 3: 25 Years of NuPECC
- Vol. 25 No. 2: Issue 100
- Vol. 29 No. 1: International Year of the Periodic Table 2019
- Vol. 29 No. 2: 25 Years of ECT* and 30 Years of NuPECC



Cover page of the special edition of NPN Vol. 24 No. 3 on 25 Years of NuPECC

The upcoming issue, Vol. 30 No. 3, will be dedicated to nuclear physics facilities in the Asia-Pacific region.

All issues are available free of charge as pdf-files on the NuPECC Website under <http://www.nupecc.org/?display=npn/issues>; online access from Taylor & Francis directly can be requested there, too.

The NuPECC Chairs are contributing to the work of the NPN Editorial Board. In 2018 the past NuPECC Chair Angela Bracco became the Chair of the NPN Editorial Board and in 2019 the current NuPECC Chair officially became a member of the NPN Editorial Board.

4.2 NuPECC SPECIAL REPORT “NUCLEAR PHYSICS FOR MEDICINE”

In 2012 NuPECC embarked on a new “NuPECC Report: Nuclear Physics for Medicine” (<http://www.nupecc.org/pub/npmed2014.pdf>) to assess major achievements and future developments. This work was motivated by the need to recall the important connections and the feeding of applications from basic research. Without basic research there would be little to be applied; applications resulting from basic research contribute to the wealth and health of society. In particular, modern medicine benefits tremendously from nuclear physics, both for diagnosis and for therapy.

Following the successful model of previous NuPECC reports, conveners were engaged by NuPECC members and Working Groups were set up for the three topics: hadron therapy, imaging and radioisotope production – and Adam Maj / Jan Dobeš, Faïçal Azaiez / Alex Murphy and Piet Van Duppen / Ari Jokinen, respectively were appointed as NuPECC Liaison Members for these topics. At the NuPECC Meeting in Sevilla on October 5 and 6, 2012, the NuPECC members appointed Marco Durante (GSI) / Sydney Galès (Orsay, FAIR), José Manuel Udias (Madrid) / David Brasse (Strasbourg) and Ulli Köster (ILL) / Marie-Claire Cantone (Milano) as conveners. Then the conveners together with the NuPECC Liaison Members appointed the working groups based on the names proposed by the NuPECC Members. A dedicated website was established to allow all colleagues to provide input. First drafts were presented and discussed at the NuPECC Meeting in Krakow on October 11-12, 2013. A Town Meeting was organized on November 18, 2013, at the CNRS Headquarters in Paris. With an audience of more than 80 interested colleagues the three chapters were presented by the conveners and discussed. The input from the Town Meeting was included and the final report was laid-out and printed by ESF. The pdf version appeared on May 20, 2014 and was published on the NuPECC Website and is available on the NuPECC Website under <http://www.nupecc.org/pub/npmed2014.pdf> ; several tens of copies of the printed version were sent to the NuPECC Members and Observers for further distribution. Angela Bracco wrote an editorial that was published in *Europhysics News* 46-3. The report was presented at a special event on November 24, 2014, at the Fondation Universitaire in Brussels. Among the attendees there was an EU officer working in support of research infrastructures and participating in the ESFRI working group Physics and Engineer.

Based on the report an 8-page brochure for the general public was prepared and disseminated (see [Chapter 4 “Outreach”](#)).

4.3 NuPECC SPECIAL REPORT “NUCLEAR PHYSICS IN EVERYDAY LIFE”

The topic for the next NuPECC report was chosen by the Committee in June 2019 via a dedicated questionnaire proposed by the Management Group.

<i>Topic</i>	1. Nuclear physics in everyday life	2. Big data and computing in nuclear science	3. Education of Nuclear physics	4. Quantum computing in nuclear physics	5. Industrial impact of nuclear science	6. (New advances in) Particle and ion detectors in nuclear science
Number of Priorities 1	19	3	1	1	0	0
Number of Priorities 2	1	4	4	2	10	2
Number of Priorities 3	1	7	6	1	3	3

The topic “Nuclear physics in everyday life” obtained the highest score and was selected for the next NuPECC Special Report. Two other topics “Big data and computing in nuclear science” and “Industrial impact of nuclear science” are proposed for the following Reports.

Following the above decision, the NuPECC Chair has appointed a dedicated working group and proposed a list of sub-topics to be included in the report.

The NuPECC Members of the Working Group are Marek Lewitowicz (ML), Joaquin Gomez Camacho (JGC), Sotiris Harissopulos (SH), François de Oliveira (FdO), Danas Ridikas (DR) and Vladimir Wagner (VW). They are complemented by several colleagues from IAEA. The topics identified with the initials of the convener are:

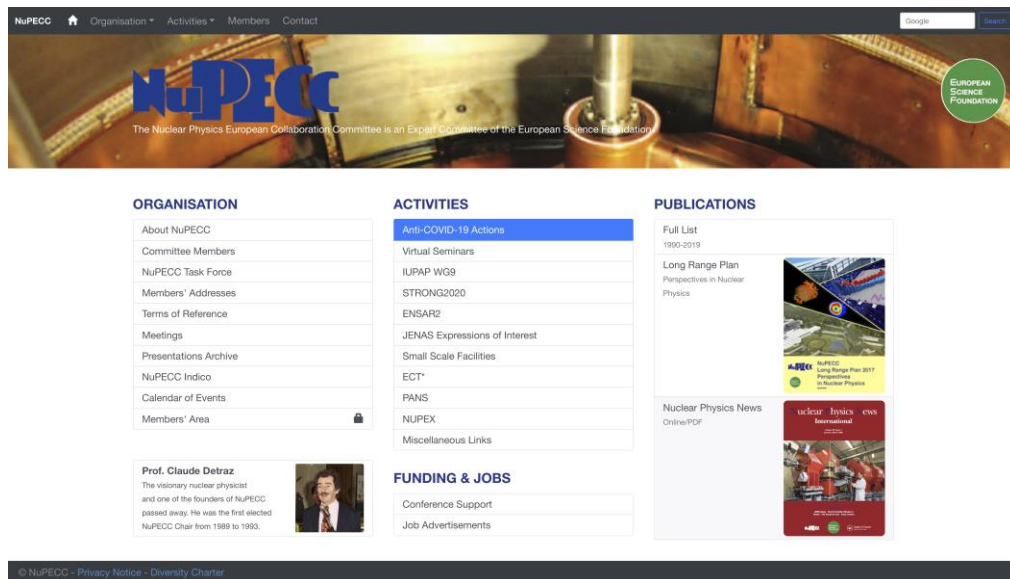
- Introduction (scope of the report, what is nuclear physics, nuclear data, ...) – ML
- Radioactivity (natural radioactivity, cosmic rays, induced radioactivity) – ML
- Origin of elements in the Universe – FdO
- Climate & Environment (Sun activity, heat in the Earth interior, ocean monitoring, wastewater treatment, mapping of groundwater resources, ...) – JGC
- Energy (electric power generation) – VW
- Health (radioisotopes for therapy and diagnosis, hadrontherapy) – SH
- Everyday life products (sterilization, radiation processing, cross-linked coatings, material modification, food and agriculture, ...) – DR
- Space technology & exploration – ML
- (Cultural) heritage and forensics – DR

Drafts are in preparation and continuously discussed in remote meetings; a final report is envisaged for the end of 2020/beginning of 2021.

A very important contribution to the report will be provided by the IAEA staff members demonstrating the fruitful collaboration between NuPECC and IAEA established in 2019.

5 OUTREACH

5.1 NuPECC WEBSITE



Home page of the NuPECC Website

All information on NuPECC such as its organisation, activities and publications are available on the NuPECC Website <http://www.nupecc.org>. Following the list of priorities for the NuPECC activities (see [paragraph 3.1](#)), beginning of 2019 the Website underwent complete refurbishment with a new, more modern design, conceived by Dan Protopopescu (Glasgow). New items that were added are the “Job Advertisements”, “Conference Support”, Virtual Seminars”, “JENAS Expressions of Interest”, “NuPECC Indico”, NuPECC Task Force”, Anti-COVID-19 Actions” and the main PANS page which now shows the map of the member countries of NuPECC displaying popup boxes featuring outreach activities in the corresponding country. It goes without saying that the website is continuously checked and updated.

Since 2018 every NuPECC meeting has a dedicated indico page which contains the full information on the meeting agenda, participants and presentations. The indico pages were also created for different NuPECC working groups.

5.2 NUPEX

NUPEX (<http://nupex.eu/>), the website which provides educational material for the classroom and for the general public on the topics

- The Material World
- Radioactivity
- Nuclei and the Universe
- Nuclear Energy
- Nuclear Applications
- Nuclear History

had undergone complete refurbishment for the English pages in 2012 and 2013, using texts prepared by Paul Nolan and students of his and figures from the original material. Translations into Bulgarian, Dutch, Finnish, French, German, Greek, Hungarian, Italian, Polish, Portuguese, Romanian and Spanish were provided on a voluntary basis from participants of the ENSAR and ENSAR2 Integrated Initiatives. The Spanish version in particular is widely used in Latin-American countries.

5.3 NuPECC BROCHURE “NUCLEAR PHYSICS FOR MEDICINE”

Based on the material of the new “NuPECC Special Report “Nuclear Physics for Medicine” an 8-page brochure for the general public was produced by Nina Hall (London), a professional science writer, with the company h2o creative (design), which appeared in November 2014. It was posted on the NuPECC Website – see http://www.nupecc.org/pub/npmed2014_brochure.pdf, distributed at the Presentation Event of the report – see below – and sent out according to the mailing list of Nuclear Physics News.

5.4 NuPECC BROCHURE “LIGHT TO REVEAL THE HEART OF MATTER”

For the UNESCO “International Year of Light 2015” NuPECC prepared an 8-page brochure “Light to reveal the Heart of Matter”, covering the topics

- Inside nucleons with photons (Jens Jørgen Gaardhøje)
- Inside nuclei with photons (Paul Nolan)
- Photon induced reactions for astrophysics and other applications (Alex Murphy)
- Photons and laser techniques for radioactive beams (Piet Van Duppen)

The text was essentially prepared by Angela Bracco, with the help of the corresponding liaison members given in brackets, the layout was prepared by Mara Tanase at ELI-NP. The 6000 copies printed by ELI-NP were distributed in bulk to the NuPECC members as well as

individually according to the European mailing list for Nuclear Physics News. The pdf version is available on the NuPECC Website (http://www.nupecc.org/pub/np_light_2015.pdf) and was also posted on the website of the International Year of Light IYL 2015 (<http://www.light2015.org/Home/LearnAboutLight/Lasers.html>).

ECT* has contributed to the year of light with the “International Winter School and Workshop on Strongly Correlated Fluids of Light and Matter”.

5.5 NuPECC LONG RANGE PLAN – BROCHURE

As for the “Nuclear Physics for Medicine” brochure, Nina Hall was engaged to prepare a 12-page brochure based on the material of the Long Range Plan. Again she prepared the brochure together with the company h2o creative; the pdf version was posted on the NuPECC Website under http://www.nupecc.org/pub/lrp17/nupecc_lrp_brochure_2017.pdf, the brochure was printed at ELI-NP and sent in bulk to the NuPECC Members as well as individually distributed together with Nuclear Physics News Vol. 28 No. 1 by the publisher Taylor & Francis.

5.6 NuPECC LONG RANGE PLAN – PRESENTATION EVENT

The Long Range Plan together with its brochure was presented at a special meeting at the Fondation Universitaire in Brussels on November 27, 2017, in the presence of several representatives of the funding agencies and ministries, the Chair of ESFRI, of EPS, EU officers responsible of the research infrastructures, the Chairs of NSAC (USA) and ANPhA (Asia) and the scientific secretary of the WG.9 of IUPAP. On that occasion the new Brochure on the LPR was distributed.

5.7 OTHER ONGOING ACTIVITIES

In 2018 NuPECC designed and produced a new roll-up, two types of NuPECC pin and dedicated memory sticks - the material used for NuPECC organized or sponsored events like the Best Poster prize or 30 years of NuPECC.



Nuclear Physics European
Collaboration Committee

Objective

- develop the strategy for European Collaboration in nuclear science by supporting collaborative ventures between research groups within Europe;
-

www.nupecc.org



NuPECC roll-up

Rolf-Dietmar Herzberg is preparing currently with a NuPECC sponsorship a Masterclass on Nuclear Structure at Liverpool University following the example of the CERN Masterclasses e.g. on ALICE.

First contacts have been established with IPPOG, the International Particle Physics Outreach Group, located at CERN, and are being pursued.

6 RELATIONS TO OTHER BODIES

6.1 COLLABORATIONS IN EUROPE

6.1.1 RELATIONS TO EUROPEAN UNION BODIES AND PROJECTS

The actions of the Committee towards official bodies of the European Union, namely

- Contribution to the EU survey on Horizon Europe
- Formulation of dedicated nuclear physics calls

were essentially related to the content of the European framework programs in 2019-2020 and 2021-2022.

The NuPECC Chair is representing nuclear physics community in several European projects like European Science Cluster of Astronomy & Particle physics ESFRI research infrastructures

(ESCAPE) (<https://projectescape.eu/about-us>) and IFMIF-DONES ESFRI-list project Preparatory Phase (<https://cordis.europa.eu/project/id/870186>).

Starting from 2013 NuPECC was invited as an observer to take part in the PSE working group of ESFRI and has contributed to the writing of the European Landscape of Research Infrastructures and to the evaluation of the ESFRI facilities.

The support to the nuclear physics was also expressed in numerous contacts of NuPECC Chairs with representatives of the European Commission (Head of Research Infrastructures in DG Research) and ESFRI (Committee Chair and Chair of the SWG PSE).

6.1.2 RELATIONS TO NUCLEAR PHYSICS DIVISION OF THE EUROPEAN PHYSICAL SOCIETY

A collaboration with the Nuclear Physics Division (NPD) of European Physical Society was established already in the beginning of existence of NuPECC. A NPD of EPS representative is invited as an observer at the NuPECC meetings and a NuPECC representative participates in meetings of the NPD Board of EPS. Both Committees are regularly and mutually informed of their activities through the oral presentations at the meetings and joint PANS actions.

Two representatives of NPD are among the members of the Nuclear Physics News Editorial Board.

In addition, the NuPECC Chair was invited to the NPD Board of EPS meeting in Bologna in September 2018 and Nicolas Bianchi, the Chair of NPD was invited to the NuPECC meeting, in Oslo in June 2018.

The above regular contacts allowed to continue joint actions and in particular for a close monitoring of the PANS activities by NuPECC and NPD; an update of the PANS Website; for appointment of new members from NuPECC to PANS, for coordination between NuPECC and NPD Board on position papers and topical report. An explicit link to the NPD report on cultural heritage was added on the NuPECC Website.

6.1.3 RELATIONS TO THE EUROPEAN SCIENCE FOUNDATION (ESF)

The ESF-Science Connect (<https://www.esf.org>) is the institution hosting NuPECC. ESF manages the NuPECC budget and organises regular Committee reviews. The Chief Executive Officer of ESF is one of the permanent observers in NuPECC. The Committee reports to ESF annually (see [Annex 5](#)).

In 2014 and 2015 the NuPECC Chair, as in the previous years, participated in the meetings of the Governing Council of ESF and presented regularly a report on the Committee activities and future plans. Furthermore, due to the transformation of ESF into a new structure ESF-Science Connect, additional meetings took place between ESF and all associated expert boards (CRAF,

EMB, ESSC, MatSEEC, NuPECC). The main issue was the definition of a viable path to host the boards after the modification of the ESF structure. In addition, during the transition period (2014-2015) the NuPECC Chair regularly informed the NuPECC Members about the situation by providing necessary clarifications and details via letters and specific contacts with their funding agencies.

At the end of 2015 and beginning of 2016, uncertainties related to the new role of ESF created some worries. All institutions participating in NuPECC imposed that the mission of NuPECC as the ESF-Science Connect expert committee has to remain unchanged in spite of evolution of ESF-Science Connect into a science services-based organisation.

As a result, the ESF-Science Connect the successor of ESF, approved in June 2015 received an important mandate of hosting its Expert Boards (CRAF, EMB, ESSC, MatSEEC, NuPECC) and of providing them with adequate support (accounting, legal and communications/media ESF-Science Connect services).

In addition to regular NuPECC meetings, since 2018 annual ESF-NuPECC management meetings are organised dedicated in particular to review the situation of ESF-Science Connect and to follow up the NuPECC budget.

The current situation of the ESF-Science Connect although stabilised, requires a careful monitoring.

Several NuPECC members are on the list of experts reviewing projects managed or evaluated by ESF – Science Connect.

6.2 GLOBAL COLLABORATION

The global collaboration is deemed to be very important for the scientific programs in our field and thus special care is taken in this connection. The global collaboration is based on regular exchanges and participation of representatives of CINP - Canada, NSAC - US, ANPhA - Asia and ALAFNA – South America in NuPECC meetings and since 2019/2020, on participation in the NuPECC activities of three Associated Members - Nishina Centre at RIKEN, iThemba Labs in South Africa and Israel in the NuPECC activities.

The Chair and previous Chair participate in the WG.9 of IUPAP meetings presenting the Committee activities. The Chair of NuPECC participates in ANPhA meetings and the ANPhA Chair attends the NuPECC meetings presenting their respective activities. Every two-three years WG.9 of IUPAP organises in addition to the regular meeting a symposium. NuPECC takes part in its organisation. In 2019 NuPECC was particularly recognized by the WG.9 of IUPAP since this body elected the former NuPECC Chair as its new Chair.

The NuPECC relation with NSAC usually becomes particularly intense in the occasion of the preparation of the Long Range Plans in US and Europe.

Not only the Chair of NSAC participated in the crucial meetings of the NuPECC LRP2017 but also the Chair of NuPECC was part of the Long Range Plan working group of NSC as an international observer. The resolution meeting of the Long Range Plan working group took place on April 16-20, 2015 at Kitty Hawk, North Carolina. At that occasion the NuPECC Chair presented the future of nuclear physics in Europe.

In addition, in March 2016 the NuPECC Chair was invited to give a presentation at the March NSAC meeting in Washington about the progress and organisation of the NuPECC Long Range Plan.

A recently approved US project of the Electro-Ion Collider and a panorama of support for this project in Europe were presented at the last NuPECC meeting in Valencia in March 2020. Recently, Brookhaven National Laboratory (BNL), in association with Thomas Jefferson National Accelerator Facility (TJNAF) has launched a call for “Expressions of Interest (EOI) for potential cooperation on the experimental equipment as required for a successful science program at the Electron-Ion Collider (EIC)”. Considering above and at the initiative of Chair a dedicated NuPECC working group was established recently in order to explore a possibility that European users/institutions join their efforts and present a coherent view on the participation in the EIC experiments.

6.3 COLLABORATION WITH NEIGHBOURING FIELDS OF SCIENCE

6.3.1 NuPECC, ECFA AND APPEC COLLABORATION

With the change of Chairs in both ECFA (European Committee for Future Accelerators) and NuPECC, a close collaboration of the two committees started, facilitated by the - at that time ongoing - process of the upgrade of the European Strategy for Particle Physics. It was decided to exchange observers, starting with Deputy Chair Eberhard Widmann joining the Restricted ECFA (RECFA) meeting in Vienna in April 2018, and ECFA Chair Jorgen D’Hondt participating for the first time in the NuPECC meeting in Oslo in June 2018. Since then, the NuPECC Chair or Deputy Chair joined all RECFA (6 per year) and PECFA (2 per year) meetings, and the ECFA Chair participated in all NuPECC meetings.

As APPEC, the Astroparticle Physics European Consortium, already had an observer in ECFA it was natural to also invite this committee to exchange observers. As a result, APPEC Chair Teresa Montaruli participated for the first time by video link in the NuPECC meeting in Warsaw in March 2019, and the NuPECC Chair became an observer in the APPEC General Assembly beginning from its recent meeting in June 2020.

Through the close contact of the committees, several important new initiatives were started. Two Joint APPEC – ECFA – NuPECC Working Groups were initiated, one with the goal to deliver a “*Diversity Charter*” and another one on “*Recognition of individual achievements in large*

collaborations". A third and most visible action was the first Joint ECFA – NuPECC – ApPEC Seminar (JENAS) held at LAL Orsay in October 2019 which was followed by a dedicated call for Expressions of Interest.

6.3.2 JENAS SEMINAR

The first JENAS, Joint ECFA – NuPECC – APPEC Seminar <https://jenas-2019.lal.in2p3.fr/> attracted in October 2019 230 participants resulting in a full auditorium at the Laboratoire de l'Accélérateur Linéaire (LAL) in Orsay. Beyond the regular information exchange across the three European committees, the importance is recognized to reinforce their interdisciplinary links. At the three-day meeting, senior and junior members of the astroparticle, nuclear and particle physics communities presented their overlapping challenges. Related to the quest of unravelling new insights in fundamental physics, coverage is required from all three fields in order to address the dark matter problem, the neutrino sector and the physics with gravitational waves. In presentations on organisational matters related to education, outreach, open science and software as well as careers, synergies are clearly identifiable.



JENAS 2019 group photo

The success of the first joint seminar of the three communities allowed to have a hope that this joint initiative will continue through following editions of JENAS – the next one most probably in Autumn 2021.

6.3.3 JENAS EXPRESSIONS OF INTEREST

The most important from the scientific point of view output of JENAS is a call for and submission of the JENAS Expressions of Interest (Eoi) (http://www.nupecc.org/?display=jenas_eoi and <https://indico.cern.ch/event/869195/attachments/1957651/3252450/JENAS-call-Eoi.pdf>).

Five Eoi were submitted up to now officially to the APPEC, ECFA and NuPECC Committees:

- Dark Matter (<https://indico.cern.ch/event/869195/overview>)
- Gravitational Waves for fundamental physics (<https://agenda.infn.it/event/22947/overview>)
- Machine-Learning Optimized Design of Particle Detector Layout for future scientific experiments
- Nuclear Physics at the LHC <https://indico.ph.tum.de/event/4492/>
- Storage Rings for the Search of Charged-Particle Electric Dipole Moments (EDM) <https://indico.ph.tum.de/event/4482/overview>

The APPEC, ECFA and NuPECC decided recently to form a task force composed of 6 representatives from each committee to advice and guide the proponents of Eoi. In particular, the task force will explore with the key proponents how a synergetic effort of the APPEC-ECFA-NuPECC communities can strengthen these initiatives. NuPECC, ECFA and APPEC have appointed their representatives to this task force recently. The task force should begin activities by September this year.

6.3.4 UPDATE OF THE EUROPEAN STRATEGY FOR PARTICLE PHYSICS

NuPECC has actively participated during the whole process of the recent Update of the European Strategy for Particle Physics in 2018-2020.

The major input and presentations to this process are the following

- NuPECC input by ad-hoc working group Chaired by the NuPECC Deputy Chair http://www.nupecc.org/NuPECC_ESPP2018.pdf
- NuPECC Chair was invited to the European Strategy Group (ESG), providing input to the documents and presentations elaborated by the group
- Chair of NuPECC presented the input to the strategy prepared by NuPECC at the CERN Council Open Symposium on the Update of European Strategy for Particle Physics 13-16 May 2019 in Granada, Spain

- Chair of NuPECC participated in the European Strategy Update – Strategy Drafting Session, 20–24 January 2020 in Bad Honnef, Germany presenting the input from the nuclear physics community and participating in the formulation of the final recommendations.

In June 2020 the CERN Council updated the European Strategy for Particle Physics. A related news article including weblinks to the relevant documents can be found on the CERN website: <https://home.cern/news/news/physics/particle-physicists-update-strategy-future-field-europe>.

Two key documents elaborated by the ESG and approved by the CERN Council are:

(1) a document including all recommendations: <https://home.cern/sites/home.web.cern.ch/files/2020-06/2020%20Update%20European%20Strategy.pdf>

(2) a deliberation document elaborating on the recommendations in a context: <https://home.cern/sites/home.web.cern.ch/files/2020-06/2020%20Deliberation%20Document%20European%20Strategy.pdf>

Nuclear physics and NuPECC are the integral parts of this strategy update as may be found in several paragraphs of both above mentioned documents.

A dedicated Strategy Statement is:

“5. Synergies with neighbouring fields

a) A variety of research lines at the boundary between particle and nuclear physics require dedicated experiments and facilities. Europe has a vibrant nuclear physics programme at CERN, including the heavy-ion programme, and at other European facilities. In the global context, a new electron-ion collider, EIC, is foreseen in the United States to study the partonic structure of the proton and nuclei, in which there is interest among European researchers. *Europe should maintain its capability to perform innovative experiments at the boundary between particle and nuclear physics, and CERN should continue to coordinate with NuPECC on topics of mutual interest.*”

Nuclear physics and European nuclear physics facilities including FAIR and NICA and CERN experiments ALICE, ISOLDE, and n-Tof are also mentioned in other chapters of the above mentioned documents.

6.3.5 ECFA-APPEC-NuPECC DIVERSITY CHARTER AND FOLLOW-UP ACTIONS

In March 2019 NuPECC as well as ECFA and APPEC adopted the Diversity Charter (see [Annex Z](#)) elaborated earlier by the dedicated working group composed of members of the three committees. “The joint Diversity Charter proposed by the consortia APPEC, ECFA and NuPECC

has Diversity as its principle, understood as the acknowledgement, respect and appreciation of the reality that people differ in many ways, visible or invisible, mainly in age, gender and sexual orientation, national and ethnic origin, civil status and familial situation, religious convictions, political and philosophical opinions, and physical ability.”

The signature of the Diversity Charter will be followed soon by surveys and other related actions among the three communities.

6.3.6 JOINT WORKING GROUP ON THE RECOGNITION OF INDIVIDUAL ACHIEVEMENTS IN LARGE COLLABORATIONS

Following a study on the recognition of individual achievements in large scientific collaborations in particle physics, it becomes clear that the research communities face challenges related to the topic. To further the discussion APPEC, ECFA and NuPECC jointly took the initiative to create a Working Group with the objective to facilitate the exchange of best practices on the topic across collaborations in three fields and to monitor the evolution of the topic.

The key objectives within an advisory and exploratory mandate of the working group are:

- exchange and discuss best practices, and reflect on alternative or additional procedures,
- potentially perform a second survey in 2020-2021 to monitor the progress on the topic,
- however, the group will not deal with individual problems.

The collaborations remain themselves responsible for the actions of the WG and to implement (or not) recommendations.

The WG will report back to APPEC-ECFA-NuPECC in autumn 2020.

7 SWOT ANALYSIS

7.1 STRENGTHS

- Recognition of the Committee as the representative and influential body of the European Nuclear Physics within Europe and beyond
- Long Range Plan in nuclear physics and its follow-up actions
- Publication of Nuclear Physics News, the well-recognised international journal
- Recognition by and close collaboration with the ECFA (particle physics) and APPEC (astroparticle physics) committees

7.2 WEAKNESSES

- NuPECC as other similar expert committees has limited possibilities to take strategic decisions;
- Limited participation of NuPECC members in the Committee activities; limited attendance of plenary meetings;
- Mandate of NuPECC representatives (except Chair) defined by individual member organisations;
- Limited outreach activities of the PANS committee.

7.3 OPPORTUNITIES

- Closer contacts with the European policy bodies (European Commission, European Parliament) and committees (ESFRI, Horizon Europe Program Committee)
- Operational role in the construction of new pan-European collaborations and emerging new projects in nuclear physics in Europe and at other continents
- Closer collaboration with CERN and other large-scale infrastructures
- Closer collaboration with societies (EPS, IUPAP, national physical societies)

7.4 THREATS

- Weakening of support for nuclear physics in several European countries;
- Financial and/or organisational difficulties of several ESFRI-roadmap nuclear physics projects;
- Future of ESF-Science Connect as the NuPECC host institution.

8 THE FUTURE

In the next few years, European nuclear physics will without doubt produce many exciting new results, facilitated by the new frontline facilities progressively entering into operation. Despite the tendency that exists in several countries to concentrate only on national developments, we believe that progress in science, and in nuclear physics in particular, will be driven by European and international cooperation. NuPECC should concentrate all its efforts to play a major and constructive role in this endeavour.

The highest priority the NuPECC in the coming few years will be the organisation of the next Long Range Plan for nuclear physics in Europe. This action involving the whole nuclear physics community and funding agencies will begin most probably by 2022-2023.

NuPECC should continuously monitor and support ESFRI roadmap infrastructures in nuclear physics as well as other infrastructures related to research in nuclear physics.

The recent detection of gravitational waves from a neutron star merger by the LIGO-VIRGO collaboration, followed by the observation of electromagnetic radiation by numerous telescopes, boosted experimental and theoretical physics in many domains, not least nuclear physics and astrophysics. In particular, the equation of state of nuclear matter and scenarios

of nucleosynthesis have been, and will be further, confronted with such observations. For nuclear physics, and indeed all physics communities, this extraordinary discovery is imposing a new interdisciplinary approach to research. Many national and international workshops and seminars, dedicated to this topic and putting together astrophysicists, particle and nuclear physicists, have already taken place. These were organised and located both in the US and Europe, including at the ECT*. These kinds of initiatives are certain to expand in the future, and in Europe NuPECC, together with other expert committees, societies and research organisations, is play an important role encouraging and supporting their organisation.

An increasingly important role played in science by the high-performance computing (HPC), quantum computing and big data handling and sharing will require much stronger involvement of the Committee.

A close collaboration with the neighbour fields of science, especially with particle and astroparticle physics should be further developed. In this context, future accelerator-based projects at CERN may strongly impact the nuclear physics experiments.

Although the future, especially in science, might be quite unpredictable, we believe that only tight collaboration between European countries can lead to fast progress in European Nuclear Physics. In the next thirty years (or more!) of its activity, NuPECC has to reinforce its role as facilitator of joint European projects and to promote with an increased energy the international cooperation with other continents and neighbouring domains of science.

ANNEX 1: TERMS OF REFERENCE

for the Nuclear Physics European Collaboration Committee (NuPECC), an ESF Associated Committee, as agreed upon on March 2nd, 2019. NuPECC is an Expert Committee hosted by European Science Foundation (ESF). The Committee membership is formed from European institutions and research facilities involved in nuclear science. The Committee may appoint Associated Members and Observers.

Beyond the Terms of Reference of NuPECC, the Statute of the ESF shall apply where relevant.

TASKS

The objective of NuPECC is to:

- develop the strategy for European Collaboration in nuclear science by supporting collaborative ventures between research groups within Europe;
- promote nuclear physics and its trans-disciplinary use in applications for societal benefit.

In pursuing this objective, the Committee shall:

- provide advice and make strategic recommendations to funding agencies and decision-making bodies on the development, organisation, and support of European nuclear research and of particular projects;
- define a network of complementary facilities within Europe and encourage optimisation of their usage;
- provide a forum for the discussion of the provision of future facilities and instrumentation;
- on a regular basis, the Committee shall organise a consultation of the community leading to the definition and publication of a Long Range Plan of European nuclear physics;
- contribute to public education and awareness through dissemination and outreach activities related to nuclear science, in particular through the publication of the journal Nuclear Physics News, topical reports and via online media.

MEMBERSHIP

The Committee is composed of:

- **Members**

The Members of the Committee are national organisations involved in nuclear science or multi-national nuclear research facilities in Europe. The statutes of the Members should be consistent with those of NuPECC and the ESF and they should contribute to the budget of the Committee. The distribution of Members across the different European countries and organisations should aim to reflect the activities in nuclear science in the different scientific fields and the different countries. The Representatives of Members in the Committee shall be drawn from experts active in nuclear science and proposed by the Members of NuPECC. Members can propose one Representative per fee and each Representative will dispose of one vote. The total number of Representatives per Country is limited to three, unless otherwise agreed by the Committee.

- **Associated Members**

The Committee may invite research organisations to become Associated Members of the Committee. The Associated Members will participate in the work of the Committee without voting rights and shall contribute to the Committee budget.

- **Observers**

The Committee may invite research organisations to become an Observer at the Committee meetings. The Observers have no voting rights and have no obligation to contribute to the Committee budget. A representative of the ESF shall be invited to the Committee meetings.

New Members, Associated Members or Observers can be invited to join the Committee if the action is supported after deliberation of the Representatives. A Member or an Associated Member may withdraw from the Committee at the end of the financial year immediately following that in which it gives notice of the withdrawal.

MODUS OPERANDI OF THE COMMITTEE

The Committee shall coordinate its work through plenary meetings on a regular basis, at least twice a year, at which all business items shall be decided. Members, Associated Members and Observers shall participate in the open session of the meetings, whilst the Members may participate in a closed session if deemed necessary. The Committee Chairperson shall be elected from among the Representatives of the Committee Members for a 3-year term, renewable once. The modus operandi of the NuPECC election of the Chairperson is defined in the Annex of the present Terms of Reference. The Chairperson may appoint a deputy Chairperson for the duration of his/her term. The nomination of the deputy should be approved by the Committee.

The Committee may appoint a Scientific Secretary and may set up a charter for his/her activities. Should any matters to be decided by the Committee require a vote (outside of the modus operandi for election of the Chairperson), a minimum of two-thirds of the voting

Representatives must be present, with any actions being carried by simple majority. Any representative who cannot attend the meeting may appoint another representative as a proxy to vote on his or her behalf. The representative should write to the secretary before the meeting to give the name of the proxy who can vote on his/her behalf.

FINANCIAL MATTERS

INFLOW:

The Members and Associated Members of NuPECC shall contribute to the basic budget of the Committee, which shall cover its operational activities including the remuneration of the Committee's Scientific Secretary and its liaison costs with the ESF. The contribution of every Member shall depend on the number of Representatives it nominates. The travel costs of a Representative attending the regular plenary meetings of the Committee shall be reimbursed directly by the respective Members. The Associated Members shall contribute to the basic budget of the Committee with at least 50% of a full Membership fee. The Committee may receive specific contributions from third parties or ad hoc contributions from Members.

FINANCIAL MODUS OPERANDI:

The Committee shall agree on an annual budget plan which is within the confines of the inflow from the Members, Associated Members and/or third parties, and which considers the current economic environment. The Committee shall appoint a Treasurer who shall oversee the budget and interface with the ESF. The financial commitments for the work of the Committee shall be made by the ESF. Based on the budget agreed by the Committee, the ESF will act as financial clearing house and will send annual invoices to the NuPECC Members' Institutions. The NuPECC budget is held in a special account established and operated by the ESF. ESF will collect the annual contributions from the Members and provide all appropriate financial reporting information to the Committee in due time.

REPORTING AND ADVISING

In providing advice and making recommendations to external bodies, the Committee shall act responsibly and independently. The Committee shall report on a regular basis to the ESF.

PERIODIC REVIEW

Periodically – optimally every five years - a full external and independent review of the work of the Committee will be carried out. ESF is responsible for overseeing the review process on behalf of the Committee.

NuPECC CHAIR ELECTION

In order to facilitate a smooth transition from an incumbent Chair of NuPECC to the next, a few steps should be followed strictly in time.

1. In the first meeting (March meeting) of NuPECC in the third and last year of the term of the incumbent Chair, the present Chair appoints a search committee after consultation with NuPECC members and openly discussing it as a formal agenda point of the meeting.
2. The Search Committee consults with all members of NuPECC about their own availability and/or suggestions of candidates for the post, not excluding the present Chair. To facilitate forming a list for elections a poll is conducted where each NuPECC member would give three candidates in order of priority.
3. The Search Committee presents a list of three candidates at most, who appear to have wide support of NuPECC members based on the returns of the polls. The Search Committee should ascertain beforehand that the three candidates would accept the nomination.
4. The NuPECC Secretary should circulate the candidate list among the NuPECC members at least two weeks before the second meeting (June meeting) of NuPECC.
5. Any member can raise questions regarding the list composition. These should be addressed to the incumbent Chair. The chair will inform the Search Committee of the concerns of the NuPECC member. The Search Committee should be able to back its choice of the list composition by the poll's returns.
6. At the second (June) NuPECC meeting election of the new chair is held. This is done by secret ballot. If a candidate receives > 50% of the votes in the first round, then he/she will be declared winner. If not, then a second round of secret ballot is held after eliminating the candidate with the least votes in the first round. The winner of the second round is declared Chair-elect of NuPECC. The Chair is then formally appointed by the ESF.
7. The elected chair will take the full responsibilities from the incumbent chair at the end of the third and last meeting of NuPECC in the third and last year of the term of the incumbent chair. This is done symbolically by handing the hammer to the new chair.

N.B.1 Agreeing to serve on the Search Committee should not exclude that person from subsequently deciding (or being asked) to stand for election, but in that case they would cease to participate in the work of the Search Committee.

N.B.2 A chair's term of service is three years. This is renewable with at most one more term.

N.B.3 In case the chair's position becomes vacant for whatever reason before the end of the term of the incumbent chair, the most senior member of NuPECC (in terms of years served) assumes the chairmanship of NuPECC until the next meeting of NuPECC. In the

meanwhile the caretaker chair will arrange for an election of a new chair who serves until the end of the term of the vacated chair.

N.B.4 Delegation of votes:

1. Any member who for good reason cannot attend the meeting at which the election is taking place may appoint a proxy to vote on his or her behalf.
2. The member should write to the secretary before the meeting to explain why they are unable to attend and to give the name of the proxy who can vote on their behalf.
3. The member should advise their proxy how to vote in the first round and should anticipate the possibility of a second round of voting, for which their proxy should be advised on how to vote depending on the outcome of the first round.

ANNEX 2: MEMBERSHIP 2012 – 2019

ALAHARI Navin	Spiral2, France	Jun 27, 2016	
ALAMANOS Nicolas	Saclay, France	May 22, 2014	Jun 17, 2017
ALVES Eduardo	Lisbon, Portugal	Sep 1, 2015	
AZAIÉZ Faiçal	Orsay, France	Mar 31, 2009	Jun 26, 2016
AZAIÉZ Faiçal	iThemba, South Africa	Mar 17, 2018	
BORGE Maria José	Madrid, Spain	Jan 1, 2009	Mar 6, 2019
BRACCO Angela	Milano, Italy	Oct 27, 2007	
CATA-DANIL Gheorghe	Bucharest, Romania	Jan 1, 2009	Aug 26, 2014
CHOMAZ Philippe	Saclay, France	Mar 31, 2009	May 21, 2014
DESCOUVEMENT Pierre	Brussels, Belgium	Jan 1, 2015	Dec 2, 2018
DOBEŠ Jan	Prague, Czech Republic	Aug 17, 2000	May 14, 2018
EN'YO Hideto	RIKEN, Japan	Jun 17, 2018	
FONSECA Antonio C.	Lisbon, Portugal	Jan 1, 2012	Aug 31, 2015
GAARDHØJE Jens-Jørgen	Copenhagen, Denmark	Sep 19, 2006	
GIUBELLINO Paolo	FAIR, Germany	Jan 1, 2017	
GOMEZ CAMACHO Joaquin	Sevilla, Spain	Mar 7, 2019	
GÖRGEN Andreas	Oslo, Norway	Jan 1, 2017	
GREENLEES Paul	Jyväskylä, Finland	Jan 1, 2017	
GUIDAL Michel	Orsay, France	Aug 23, 2017	Dec 31, 2019
HARISSOPULOS Sotirios	Athens, Greece	May 4, 2005	
HERZBERG Rolf-Dietmar	Liverpool, UK	Jan 6, 2017	
IRELAND David	Glasgow, UK	Jan 18, 2019	
ITKIS Mikhail	Dubna, Russia	Mar 13, 2015	Dec 31, 2016

JOKINEN Ari	Jyväskylä, Finland	Jan 1, 2009	Dec 31, 2016
JOHANSSON Tord	Uppsala, Sweden	Jun 1, 2010	
JUNGMANN Klaus	Groningen, Netherlands	Jan 1, 2009	Dec 31, 2014
KALANTAR Nasser	Groningen, Netherlands	Jun 13, 2017	
KRUSCHE Bernd	Basel, Switzerland	Jan 1, 2009	
LANGANKE Karlheinz	Darmstadt, Germany	Jun 12, 2015	
LEWITOWICZ Marek	Caen, France	Mar 14, 2014	
MAJ Adam	Krakow, Poland	Jan 1, 2011	
MEISSNER Ulf-G.	Bonn, Germany	May 23, 2016	
MILIN Matko	Zagreb, Croatia	Aug 25, 2014	
MILJANIČ Đuro	Zagreb, Croatia	Jan 1, 2011	Aug 24, 2014
MURPHY Alex	Edinburgh, Scotland	Jun 4, 2012	Jan 17, 2019
NAPPI Egenio	Bari, Italy	Mar 1, 2009	
NEYENS Gerda	Leuven, Belgium	Dec 3, 2018	
NOLAN Paul	Liverpool, UK	Mar 15, 2009	Jan 5, 2017
NYSTRAND Joakim	Bergen, Norway	Jan 1, 2011	Dec 31, 2016
PEITZMANN Thomas	Utrecht, Netherlands	Jan 1, 2006	Jul 11, 2012
POPESCU Lucia	MYRRHA, Belgium	Oct 17, 2019	
RICHTER Achim	ECT*, Italy	Nov 1, 2008	Oct 31, 2012
ROSNER Günther	Glasgow, UK	Jan 1, 2004	Jun 4, 2012
ROSNER Günther	FAIR, Darmstadt	Nov 6, 2012	Jun 11, 2015
ROY Christelle	Bordeaux, France	Mar 31, 2009	Aug 22, 2017
SABATIE Franck	Saclay, France	Jun 18, 2017	
SHARKOV Boris	FAIR, Germany	Jun 12, 2015	Dec 31, 2016
SHARKOV Boris	Dubna, Russia	Jan 1, 2017	
SNELLINGS Raimond	Utrecht, Netherlands	Jul 19, 2012	
STÖCKER Horst	Darmstadt, Germany	Oct 27, 2007	Jun 11, 2015

STRÖHER Hans	Jülich, Germany	Jan 23, 2003	
URSU Ioan	Bucharest, Romania	Aug 27, 2014	
VAN DUPPEN Piet	Leuven, Belgium	Jan 1, 2011	Dec 31, 2014
VENHART Martin	Bratislava, Slovakia	Sep 19, 2019	
WAGNER Vladimír	Prague, Czech Republic	May 15, 2018	
WAMBACH Jochen	Darmstadt, Germany	Sep 20, 2004	Dec 31, 2015
WAMBACH Jochen	ECT*, Italy	Jan 1, 2016	
WEISE Wolfram	ECT*, Italy	Nov 1, 2012	Dec 31, 2015
WIDMANN Eberhard	Vienna, Austria	Apr 18, 2006	
WOLF György	Budapest, Hungary	Sep 11, 2009	

ANNEX 3: MEETINGS 2012 - 2019

- 73.) Milano 9. – 10. 3. 12
- 74.) Copenhagen 15. – 16. 6. 12
- 75.) Sevilla 5. – 6. 10. 12
- 76.) Jülich 15. – 16. 3. 13
- 77.) Firenze 8. 6. 13
- 78.) Kraków 11. – 12. 10. 13
- 79.) Strasbourg 14. – 15. 3. 14
- 80.) Jyväskylä 13. – 14. 6. 14
- 81.) Edinburgh 10. – 11. 10. 14
- 82.) Athens 13. – 14. 3. 15
- 83.) Basel 12. – 13. 6. 15
- 84.) Caen 9. – 10. 10. 15
- 85.) Trento 11. – 12. 3. 16
- 86.) Uppsala 17. – 18. 6. 16

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|------|-----------|------------------|
| 87.) | Wien | 7. – 8. 10. 16 |
| 88.) | CERN | 10. – 11. 3. 17 |
| 89.) | Lisbon | 16. – 17. 6. 17 |
| 90.) | Saclay | 6. – 7. 10. 17 |
| 91.) | Amsterdam | 16. – 17. 3. 18 |
| 92.) | Oslo | 15. – 16. 6. 18 |
| 93.) | Bucharest | 12. – 13. 10. 18 |
| 94.) | Warsaw | 1. – 2. 3. 19 |
| 95.) | Dubna | 21. – 22. 6. 19 |
| 96.) | Paris | 17. 10. 19 |

ANNEX 4: NuPECC PUBLICATIONS 2012 – 2019

“Nuclear Physics News” Vol. 22 No. 1 – Vol. 29 No. 4

NuPECC Handbook “International Access to Nuclear Physics Facilities in Europe” (6th Edition) (2012)

NuPECC Report “Nuclear Physics for Medicine” (2014)

NuPECC Brochure “Nuclear Physics for Medicine” (2014)

NuPECC Brochure “Light to Reveal the Heart of Matter” (2015)

NuPECC Long Range Plan 2017: Perspectives of Nuclear Physics

NuPECC Long Range Plan 2017 Brochure “Nuclear Physics and its Applications”

ANNEX 5: ANNUAL REPORTS TO ESF GOVERNING COUNCIL AND ASSEMBLY 2012 - 2019

NuPECC STATUS REPORT FOR MEETING OF THE ASSEMBLY, BRUSSELS, NOVEMBER 23, 2012

SCIENCE POLICY ISSUES

The Chair and Scientific Secretary represented NuPECC at the consultation meeting of the ESF/ScienceEurope task force for Expert Boards and Committees (EBCs) in München on April 25, 2012. The Chair then attended the following ESF Governing Council meeting. The consultation meeting resulted in the “Munich Declaration of Chairs of EBCs” concerning the future of the EBCs. The declaration has been sent by e-mail to all NuPECC Members. NuPECC strongly supports the concept of keeping forces joined with the other EBCs towards an adequate solution to host the EBCs within ESF or a possible successor organisation.

As proposed in the statutory review, NuPECC has increased its interaction with its Asian counterpart ANPhA (see <http://ribf.riken.jp/ANPhA/index.html>). The Chair together with the Scientific Secretary attended on behalf of NuPECC the meeting of ANPhA in Hanoi on November 24, 2011, in conjunction with the International Symposium on Physics of Unstable Nuclei 2011 (ISPUN11), as well as the following meeting held in Adelaide on August 4 and 5, 2012, and reported on NuPECC’s activities. In return, ANPhA representatives attended the NuPECC Meetings in Milano on March 9 and 10, 2012, in Copenhagen on June 15 and 16, 2012, and in Sevilla on October 5 and 6, 2012.

The Co-Chair of the corresponding organisation in Latin America ALAFNA (see <http://www.alafna.org/>), Alinka Lépine-Szily, attended the NuPECC Meeting in Sevilla on October 5 and 6, 2012, and gave a presentation on ALAFNA. The Chair and Scientific Secretary plan to attend the next meeting of ALAFNA to be held in connection with the X Latin American Symposium on Nuclear Physics and Applications in Montevideo, Uruguay, end of 2013.

The Working Group 9 of IUPAP, of which the current and past Chairs of NuPECC are ex-officio members, had its last meeting in Tokyo on August 17, 2012; the Chair gave a presentation on NuPECC. A new global roadmap will be prepared following the Nuclear Science Symposium in Rome on May 31 and June 1, 2013.

LAUNCH OF MAJOR ACTIVITIES

NuPECC embarked on a new “NuPECC Report: Nuclear Physics for Medicine” to assess major achievements and future developments. NuPECC agrees on three topics – hadron therapy,

imaging and radioisotope production – and appoints Adam Maj / Jan Dobeš, Faiçal Azaiez / Alex Murphy and Piet Van Duppen / Ari Jokinen, respectively, as NuPECC Liaison Members. At the NuPECC Meeting in Sevilla on October 5 and 6, 2012, the NuPECC members appointed Marco Durante (GSI) / Sydney Galès (Orsay, FAIR), José Manuel Udias (Madrid) / David Brasse (Strasbourg) and Uli Köster (ILL) / Marie-Claire Cantone (Milano) as conveners. Now the conveners together with the NuPECC Liaison Members will appoint the working groups based on the names proposed by the NuPECC Members. The envisaged time scale foresees a draft report to be discussed at a general meeting end of 2013 and a final report to be approved by NuPECC at its meeting in March 2014. This scientific report should then be used as basis for a PANS action

The Chair attended the meeting of the European Strategy Group for Particle Physics at CERN on March 16, 2012, and the following Open Symposium in Cracow on September 10 to 12, 2012, as an observer; additional NuPECC Members involved are Philippe Chomaz and Jens Jørgen Gaardhøje. The next step will be a drafting meeting in Erice on January 21 to 26, 2013.

SIGNIFICANT SUCCESS STORIES

NuPECC received a very positive report in the statutory review of ESF Expert Boards and Committees (see <http://www.esf.org/publications.html>)!!!

NuPECC prepared a new (6th) edition of the NuPECC Handbook “International Access to Nuclear Physics Facilities in Europe” (see <http://www.nupecc.org/pub/hb12/hb2012.pdf>) featuring the nuclear physics facilities that were included in the NuPECC Long Range Plan 2010, the FP 6 and 7 Transnational Access projects HadronPhysics, EURONS, HadronPhysics2, ENSAR, SPIRIT, ERINDA and HadronPhysics3, as well as the facilities on the ESFRI list. 3000 copies of the handbook were printed and sent out according to the NuPECC mailing list; each NuPECC Member received 10 copies. This serves as the Nuclear Physics input to the MERIL (Mapping the European Research Infrastructure Landscape) FP7 EU project co-ordinated by ESF. The former NuPECC Chair, Günther Rosner, is a member of the MERIL Steering Committee and Scientific Advisory Board.

During the European Nuclear Physics Conference in Bucharest, September 17 to 21, 2012, a session on facilities with reports on FAIR (Günther Rosner), Spiral2 (Marek Lewitowicz) and ELI-NP (Victor Zamfir), the three nuclear physics projects on the ESFRI list. Angela Bracco was asked to cover the rest. A lively discussion followed the presentations.

The Second Edition of the popular PANS book “Nucleus – a Trip into the Heart of Matter” by Ray Mackintosh, Jim Al-Khalili, Björn Jonson and Teresa Peña has appeared (see <http://tinyurl.com/7wsplqy>).

The popular website NUPEX (see <http://www.nupecc.org/NUPEX/index.htm>) undergoes refurbishment; a first improved version is available and under discussion. The English version will then be translated into several other languages within the ENSAR project

NuPNET, the FP7 ERA-net in Nuclear Physics, where NuPECC served as the scientific advisory body, has successfully launched a first joint call on 14 February, 2011, and selected 5 out of the 16 proposals that were submitted (see <http://www.nupnet-eu.org/wps/portal/>).

The EU FP7 Integrating Activity projects related to Nuclear Physics (HadronPhysics3, ENSAR, SPIRIT, ERINDA, CHARISMA, EFNUDAT) have started and are running successfully. New proposals are being prepared for Horizon 2020 in close connection with NuPECC

All activities mentioned above are being pursued in addition to the regular projects such as the NuPECC publication of the “Nuclear Physics News”, the quarterly magazine for the European, American and Asian Nuclear Physics communities. Additional information can be found on the NuPECC website <http://www.nupecc.org>

NuPECC STATUS REPORT FOR THE MEETING OF THE GOVERNING COUNCIL, BERLIN, SEPTEMBER 25-26, 2013

ON-GOING ACTIVITIES

The new NuPECC Report “Nuclear Physics for Medicine” is being prepared with the help of the three working groups on hadron therapy, imaging, and radioisotope production convened by Marco Durante / Sydney Galès, José Manuel Udias / David Brasse and Ulli Koester / Marie-Claire Cantone. The status of the report is regularly reported on, lastly at the NuPECC Meeting that took place in Florence on 8 June 2013. A first draft of the report should be available by 1 October 2013 for discussion at the NuPECC Meeting in Kraków on 11-12 October 2013, followed by a general town hall meeting in Paris on 18 November 2013.

The popular website NUPEX – NUclear Physics EXperience - (<http://www.nupecc.org/NUPEX/index.htm>) is undergoing refurbishment; a first improved version (<http://ns.ph.liv.ac.uk/~msc1/nupeX/>) is available and under discussion and improvement. The English version will then be translated into Bulgarian, Dutch, German, Italian, Polish, Romanian and Spanish within the European Nuclear Science and Applications Research (ENSAR) project.

NuPECC continues to maintain close contact with its corresponding organisations in the US, the Nuclear Science Advisory Committee of the Department of Energy and the National Science Foundation NSAC (<http://science.energy.gov/np/nsac/>), in Asia, the Asian Nuclear Physics association ANPhA (<http://ribf.riken.jp/ANPhA/index.html>) and in South America, the Asociacion Latino-Americana de Fisica. Nuclear y Aplicaciones ALAFNA (<http://www.alafna.org>). Through the membership of the present and past NuPECC Chairs in Working Group 9 (WG.9) of IUPAP, the International Union of Pure and Applied Physics, NuPECC is strongly involved in the discussion on nuclear physics issues worldwide (<http://www.iupap.org/wg/icnp.html>).

The Chair of NuPECC was interviewed in connection with the international review of its institutional member, the European Centre for Theoretical Studies in Nuclear Physics and Related Areas (ECT*) in Trento (<http://www.ectstar.eu>) at the ECT* Evaluation and Review Meeting held in Trento on 21-22 June 2013.

The NuPECC view has been expressed in the occasion of the 20th anniversary of ECT* on September 16, 2013, and at the opening of the ALTO facility at IPNO Orsay on May 13, 2013. This is in line with the continuous NuPECC endeavour to be part and contribute in events related to Nuclear Physics Facilities.

All activities mentioned above are being pursued in addition to the regular projects such as the NuPECC publication of the “Nuclear Physics News”, the quarterly magazine for the European, American and Asian Nuclear Physics communities. Additional information can be found on the NuPECC website (<http://www.nupecc.org>).

SIGNIFICANT SUCCESS STORIES

NuPECC contributed significantly to the Mapping of the European Research Infrastructure Landscape, MERIL, a prominent project of ESF, with its handbook “International Access to Nuclear Physics Facilities in Europe, now in its 6th edition (2012), the first one having appeared already in 1990. It is continuously updated and published on the NuPECC Website (<http://www.nupecc.org/pub/hb12/hb2013.pdf>).

All three nuclear physics projects on the European Strategy Forum on Research Infrastructures (ESFRI) List – FAIR in Darmstadt (<http://www.fair-center.de/>), Spiral2 in Caen (<http://www.ganil-spiral2.eu/>) and ELI-NP in Bucharest (<http://www.eli-np.ro/>)– are progressing on schedule; likewise the Integrated Initiatives related to nuclear physics ENSAR (<http://www.ensarfp7.eu/>), HadronPhysics3 (<http://www.hadronphysics3.eu/>) and SPIRIT (<http://www.spirit-ion.eu/>).

ENSAR, the Integrated Initiative on nuclear structure and applications under FP7, was invited to contribute to the consultation process for Horizon 2020 and targeted to submit a proposal for the first call to most probably come out at the beginning of 2014.

NuPECC contributed significantly through its Chair and several members to the European Strategy for Particle Physics issued by the CERN Council Strategy Group; NuPECC’s essential role for the European nuclear physics community is explicitly acknowledged in the final document.

CHALLENGES AND AREAS OF OPPORTUNITY

Once the report on “Nuclear Physics for Medicine” has been published, the material will be used for PANS, the common project of NuPECC and the Nuclear Physics Division of the European Physical Society on Public Awareness of Nuclear Science.

NuPECC has initiated and continues negotiations with possible new member states such as Slovenia, Slovakia, Russia, Turkey and even Israel. The latter is linked with a request from the Israeli nuclear physics community for a letter of support, which NuPECC discussed and granted, for their international project the Soreq Applied Research Accelerator Facility (SARAF).

NuPECC has been approached by the International Atomic Energy Agency (IAEA) to establish closer links and envisage common projects.

NuPECC has organized a small symposium for its 25th anniversary in connection with its 78th meeting in Kraków on October 11, 2013. The achievements and major important steps impacting the Nuclear Physics collaboration were reviewed. A report of this event will be published on Nuclear Physics News, the magazine of NuPECC distributed worldwide in 6000 copies.

NuPECC STATUS REPORT FOR THE MEETING OF THE GOVERNING COUNCIL, PARIS, SEPTEMBER 24-25, 2014

ON-GOING ACTIVITIES

The NuPECC Report “Nuclear Physics for Medicine” – see under “Significant Success Stories” – will be presented to the funding agencies during an event at the University Foundation in Brussels on 24 November 2014. This event is being organised by the ESF office in close connection with NuPECC.

The popular website NUPEX (<http://nupecc.eu>) is continuously undergoing refurbishment. The English version is being translated into Bulgarian, Dutch, German, Italian, Polish, Romanian and Spanish within the FP7 European Nuclear Science and Applications Research (ENSAR) project.

NuPECC continues to maintain close contact with its corresponding organisations in the US (<http://science.energy.gov/np/nsac/>), Asia, (<http://ribf.riken.jp/ANPhA/index.html>) and South America (<http://www.alfna.org>). Through the membership of the present and past NuPECC Chairs in Working Group 9 (WG.9) of IUPAP, the International Union of Pure and Applied Physics, NuPECC is strongly involved in the discussion on nuclear physics issues worldwide.

The Chair has given talks on behalf of NuPECC on the follow-up of the long range plan at specific workshops concerning the construction of new facilities or collaboration agreements among laboratories.

All activities mentioned above are being pursued in addition to the regular projects such as the NuPECC publication of the “Nuclear Physics News”, the quarterly magazine for the European, American and Asian Nuclear Physics communities. Additional information can be found on the NuPECC website (<http://www.nupecc.org>).

SIGNIFICANT SUCCESS STORIES

The NuPECC Report “Nuclear Physics for Medicine” was prepared with the help of the three working groups on hadron therapy, imaging, and radioisotope production convened by Marco Durante / Sydney Galès, José Manuel Udias / David Brasse and Ulli Köster / Marie-Claire Cantone. A first draft of the report was available by 1 October 2013 for discussion at the NuPECC Meeting in Kraków on 11-12 October 2013, followed by a general town meeting in Paris on 18 November 2013. The final report was presented at the NuPECC Meeting in Strasbourg on 14-15 March 2014, then published in April 2014 and can now be found on the NuPECC Website under <http://www.nupecc.org/pub/npmed2014.pdf>.

The Review of the European Centre for Theoretical Studies in Nuclear Physics and Related Areas (ECT*) (<http://www.ectstar.eu>) held in Trento on 21-22 June 2013 was successfully completed and new Memoranda of Understanding to secure funding have been signed in the meantime.

All three nuclear physics projects on the European Strategy Forum on Research Infrastructures (ESFRI) List – FAIR in Darmstadt, Spiral2 in Caen and ELI-NP in Bucharest – are progressing on schedule; likewise the Integrated Initiatives related to nuclear physics ENSAR, HadronPhysics3 and SPIRIT.

The September issue of Nuclear Physics News features a special contribution on “NuPECC: 25 years of achievements inspiring the future” written by the present and past chairs of NuPECC and the Scientific Secretary, Juha Äystö, Angela Bracco, Brian Fulton, Sydney Galès, Muhsin Harakeh, Günther Rosner and Gabriele-Elisabeth (Sissy) Körner.

CHALLENGES AND AREAS OF OPPORTUNITY

Now that the report on “Nuclear Physics for Medicine” has been published, the material is being used to prepare an 8-page brochure for the interested public; the brochure should be ready for the presentation event of the Report in Brussels on 24 November 2014.

NuPECC has initiated and continues negotiations with possible new member states such as Slovenia, Slovakia, Russia, Turkey and even Israel.

NuPECC has been approached by the International Atomic Energy Agency (IAEA) to establish closer links and envisage common projects.

NuPECC has been very lately engaged, as observing member, in following closely and contributing to the activity of the ESFRI Working Group on Nuclear and Particle Physics. This is to contribute in the next two years to the preparation a new ESFRI roadmap. Issues related to the NuPECC Long Range Plan and other NuPECC documents on infrastructures and resources are important inputs for this work.

NuPECC launched its new (now 5th) Long Range Plan at its meeting in Basel in June 2015. Special tasks and the topics of the scientific chapters were decided and the responsible NuPECC Liaison Members were appointed:

General and relations with LRP in other fields: Jens Jørgen Gaardhøje

Relations with EU, IUPAP, NSAC, etc.: Angela Bracco

Infrastructures: Marek Lewitowicz and Boris Sharkov (large) – Mikhail Itkis (Dubna) and Sotirios Harissopulos (small)

Theory: Gyuri Wolf, Jochen Wambach

Education and Training: Paul Nolan

Town Meeting: Karlheinz Langanke

1. **Hadron Physics:** Bernd Krusche, Eberhard Widmann, Tord Johansson
2. **Properties of Strong-Interaction Matter:** Christelle Roy, Raimond Snellings, Eugenio Nappi
3. **Nuclear Structure and Reaction Dynamics:** Faiçal Azaiez, Adam Maj, Ari Jokinen
4. **Nuclear Astrophysics:** Pierre Descouvemont, Maria Borge, Alex Murphy
5. **Symmetries and Fundamental Interaction:** Joakim Nystrand, Hans Ströher, Matko Milin
6. **Applications and Societal Benefits:** Ioan Ursu, Jan Dobes, Nicolas Alamanos

At the following meeting in Caen in October 2015 the conveners for the 6 chapters were decided:

1. Diego Bettoni (Ferrara) + Hartmut Wittig (Mainz)
2. Silvia Masciocchi (GSI Darmstadt) + François Gélis (CEA Saclay)
3. John Simpson (Daresbury) + Elias Khan (Orsay)
4. Gabriel Martinez Pinedo (TU Darmstadt) + Alison Laird (York)
5. Klaus Kirch (PSI Villigen) + Klaus Blaum (MPI Heidelberg)
6. Marco Durante (TIFPA Trento / GSI Darmstadt) + Alain Letourneau (CEA Saclay)

The corresponding Working Groups were discussed and then finalised at the following meeting in Trento in March 2016; their composition can be found on the NuPECC Website under <http://www.nupecc.org/index.php?display=lrp2016/working-groups>. The Conveners and NuPECC Liaison Members reported on the progress of the Working Groups at the following NuPECC Meetings in Uppsala in June 2016 and Vienna in October 2016. Their Draft Reports were put on the NuPECC Website and presented and discussed at a Town Meeting in

Darmstadt on January 11 – 13, 2017, which was attended by nearly 300 members of the community.

The full Long Range Plan was then laid out by Mara Tanase from ELI-NP, Bucharest, revised in several rounds by the Conveners and NuPECC Members, discussed at the NuPECC Meeting at CERN in March 2017 and then finally approved at the NuPECC Meeting in Lisbon in June 2017. On June 19, 2017, the LRP was released on the NuPECC Website under <http://www.nupecc.org/pub/lrp2017.pdf>; now a printed version is also available. The corresponding Editorial in Nuclear Physics News, written by the NuPECC Chair, Angela Bracco, is attached. Equivalent contributions from her were also published in Europhysics News and CERN Courier. Angela Bracco gave presentations on the LRP at the CERN Science Policy Committee on June 12, 2017, at the IUPAP WG.9 Nuclear Science Symposium in Tokyo on August 29 – 30, 2017, and at several Collaboration Meetings.

The LRP will be presented at a special meeting in Brussels on November 27, 2017; by this time a 12-page brochure based on the LRP will also be available. The brochure just went to print, but can already be found on the NuPECC Website under <http://www.nupecc.org/index.php?display=pub/publications>.

NuPECC continues to maintain close contact with its corresponding organisations in the US, NSAC (<http://science.energy.gov/np/nsac/>), Asia, ANPhA (<http://ribf.riken.jp/ANPhA/index.html>) and South America, ALAFNA (<http://www.alfna.org>). Through the membership of the present and past NuPECC Chairs in Working Group 9 (WG.9) of IUPAP, the International Union of Pure and Applied Physics, NuPECC is strongly involved in the discussion on nuclear physics issues worldwide. In addition, NuPECC maintains regular contact with the European Strategic Forum for Research Infrastructures ESFRI.

For the “Year of Light” 2015 NuPECC had prepared a brochure “Light to Reveal the Heart of Matter” with the help of the ESFRI future facility ELI-NP in Bucharest; it can be found under http://www.nupecc.org/pub/np_light_2015.pdf.

The popular website NUPEX (<http://nupecc.eu>) is continuously undergoing refurbishment. The English version has been fully translated to Spanish and Hungarian; translation into Bulgarian, Dutch, French, German, Italian, Portuguese, Polish and Romanian is ongoing within the Horizon2020 European Nuclear Science and Applications Research (ENSAR2) project.

All activities mentioned above are being pursued in addition to the regular projects such as the NuPECC publication of the “Nuclear Physics News”, the quarterly magazine for the European, American and Asian Nuclear Physics communities. Additional information can be found on the NuPECC website (<http://www.nupecc.org>).

NuPECC today has 28 representatives from 21 European Member Countries, 4 from Institutional Members and 2 from Associate Members overseas as well as 9 Observers; Slovakia, a new member joined the committee in 2018; Nishina Center in Japan and iThemba Labs from South Africa became Associated Members recently. The IAEA became a permanent Observer few months ago. Discussions are under way with Slovenia and Bulgaria to become new members and with Israel to join as Associate Member.

Regular meetings of the committee are held three times a year, hosted by one of the representatives. The next meeting of NuPECC will be held in Orsay on October 17, 2019. All the minutes of the meetings of NuPECC are posted under <http://www.nupecc.org/?display=misc/meetings>, presentations at the NuPECC meetings under <http://www.nupecc.org/?display=presentations/talks>.

The day-to-day work is performed by the NuPECC Management Board created in the beginning of 2018, consisting of the Chair, Marek Lewitowicz, the Deputy Chair, Eberhard Widmann, the Treasurer, Paul Greenlees, and the Scientific Secretary, Gabriele-Elisabeth Körner. The latter also acts as the Editor of Nuclear Physics News, a quarterly magazine for the community of which 6500 copies are published and distributed worldwide. NuPECC maintains its own website - <http://www.nupecc.org> – where all the information on the composition and work of the committee can be found.

After the successful presentation of its latest Long Range Plan in November 2017 in Brussels – see <http://www.nupecc.org/pub/lrp17/lrp2017.pdf> - NuPECC established in the beginning of 2018 a Task Force in order to discuss and promote its recommendation with national and international funding agencies. Members of the Task Force are Marek Lewitowicz (NuPECC Chair), Eberhard Widmann (NuPECC Deputy Chair), Paolo Giubellino (GSI-FAIR Darmstadt), Navin Alahari (GANIL-SPIRAL2 Caen), Boris Sharkov (JINR Dubna), Ionel Andrei (ELI-NP Bucharest) and Gabriele-Elisabeth Körner (NuPECC Scientific Secretary); so far meetings were held in Norway, the UK, Romania, Poland as well as at IAEA and JINR – see also <http://www.nupecc.org/?display=taskforce>; the next meeting will take place in France in October.

NuPECC has considerably expanded its collaboration with the neighbouring communities Particle Physics and Astroparticle Physics, represented by the corresponding committees ECFA and APPEC: the chairs of the 3 committees are mutually invited to the committee meetings, a Working Group chaired by Eberhard Widmann has prepared a document for input into the “European Strategy for Particle Physics” (ESPP); the NuPECC chair Marek Lewitowicz participates in the work of the European Strategy Group on ESPP as well in the dedicated sessions of the CERN Council, NuPECC has co-organized and will participate in the Joint ECFA-NuPECC-APPEC Seminar JENAS, which will be held in Orsay, France – see <https://jenas->

2019.lal.in2p3.fr/ . NuPECC participates in the joint Working Groups on “Diversity” and “Recognition of individual achievements in large collaborations”.

NuPECC is represented by its Chair and Past-Chair in the Working Group 9 of IUPAP (International Union of Pure and Applied Physics); its last meeting took place in London in August 2019. NuPECC also participates in the discussion of the update of the Roadmap of ESFRI (European Strategy Forum of Research Infrastructures), which includes already 5 major facilities in nuclear physics: GSI-FAIR, GANIL-SPIRAL2, ELI-NP, JINR-NICA-SHE and MYRRHA – all of them Institutional Members of NuPECC.

NuPECC just embarked on the preparation of a special report “Nuclear Physics in Everyday Life”; a corresponding Working Group was formed; its members are Marek Lewitowicz (Chair), Joaquin Gomez Camacho, Sotiris Harissopulos, Vladimir Wagner as well as Danas Ridikas from IAEA.

Since last year, NuPECC is sponsoring major nuclear physics conferences in Europe awarding best poster competition laureates and supporting outreach activities.

The NuPECC Management Group meets at least once a year at dedicated meetings with the ESF management. The ESF representative is also invited to all regular committee meetings.

NuPECC has considerably refurbished its website last year and continues to work on improvements – concentrating on outreach activities (PANS) this year.

ANNEX 6: LIST OF CONFERENCES SPONSORED BY NuPECC IN 2018-2020

2018 NuPECC Conference support

Name	Venue	Date	Support
Zakopane Conference	Zakopane	August 26 – September 2, 2018	1500
EUNPC	Bologna	September 2-7, 2018	1000
EMIS2018	Geneva	September 16-21, 2018	1500

2019 NuPECC Conference support

Name	Venue	Date	Support
1st Meeting of the Int. Biophysics Collaboration	GSI Darmstadt	May 20-22, 2019	0
SQM 2019	Bari	June 10-15, 2019	1500
INPC 2019	Glasgow	July 28 – August 2, 2019	2000
TAN19	Wilhelmshaven	August 25-30, 2019	1500
XXXVIth MLCP	Mazurian Lakes	September 1-7, 2019	1500
Few-Body Problems	Surrey	September 2-7, 2019	1500
Nuclear Physics in Astrophysics	Frankfurt	September 15-20, 2019	1500
PSI2019	PSI Villigen	October 21-25, 2019	1500

020 NuPECC Conference support

Conference Name	Venue	Date	Number of Participants	NuPECC support (€)
IPAC20	Caen, France	May 10 - 15, 2020	> 1000	1500
MESON 2020	Krakow, Poland	June 4 - 6, 2020	172	1000
XIIIth Quark Confinement and the Hadron Spectrum	Maynooth, Ireland	July 31 - August 6, 2020	300/400	1500
DREB 2020	Santiago de Compostela, Spain	June 29 - July 3, 2020	130	1000
ARIS 2020	Avignon, France	June 14 - 19, 2020	300/350	1500
SSNET 2020	Gif-sur-Yvette, France	November, 2020	> 100	1000
55th Zakopane Conference on Nuclear Physic	Zakopane, Poland	August 30 - September 6, 2020	~ 200	1000
PANIC 2020	Lisbon, Portugal	August 31 - September 4, 2020	~ 400	1500
AccApp'20	Vienna, Austria	April 6-9, 2020	160/200	1000
EXA 2020	Vienna, Austria	September 7 - 11, 2020	~ 150	1000
13th International Spring Seminar on Nuclear Structure	Ischia (Napoli), Italy	May 2020	> 100	1000
NUCLEUS - 2020	Saint Petersburg, Russia	June 1 - 7, 2020	~ 200	1000
ICACS-29 and SHIM-11	Helsinki, Finland	June 21 - 26, 2020	150/200	1000
ICNFP2020 Conference	Kolymbari, Greece	July 27 - August 5, 2020	~ 200	1000

ANNEX 7: ECFA-APPEC-NuPECC DIVERSITY CHARTER

January 30, 2019

DEFINITION OF DIVERSITY

The joint Diversity Charter proposed by the consortia APPEC [1], ECFA [2] and NuPECC [3] has Diversity as its principle, understood as the acknowledgement, respect and appreciation of the reality that people differ in many ways, visible or invisible, mainly in age, gender and sexual orientation, national and ethnic origin, civil status and familial situation, religious convictions, political and philosophical opinions, and physical ability.

It is recognized that identifying, accepting and valuing diversity and capitalizing on it in Research Performing and Funding Organisations, Committees and Collaborations can:

Create a work environment that accelerates productivity and innovation and promotes life-work balance;

Have a positive impact in attracting, retaining, and promoting diverse sets of skills;

Represent an added value by making them a mirror of the society in which they exist; this added value has been demonstrated in industry (e.g. see Ref. [4]) as well as in research, where mostly effects on gender and ethnic inclusions have been studied so far. For example, a correlation between an increased ethnic diversity and a stronger impact in international publications has been found [5], [6] and positive effects of gender, ethnic and ability inclusions in STEMM have been highlighted [7];

Fight prejudice and discrimination, fostering a culture of inclusion based on respect for individual human beings. Valuing the characteristics, skills and talents of each person promotes equal treatment and opportunities;

Contribute to personal and professional development, efficiency and competitiveness of an organization, as well as towards the improvement of social and economic standards.

COMMITMENT TO THIS DIVERSITY CHARTER

The role of this charter is the active support of an inclusive Policy in Science, similar to other initiatives of commitment that have been recently launched (e.g. see Ref. [8] for diversity and Ref. [9] for gender equality).

The signatory entities of this Charter are committed to:

Endorsing an enabling environment for the understanding, respect and promotion of all diversity items listed in Sec. 1 and at all levels of the entity, from top management to each and every other hierarchical level;

Balancing diversity composition of coordinating committees of the three involved organizations (APPEC, ECFA and NuPECC), leadership of working packages of Collaborations and organizing and advisory committees of conferences;

Developing an organizational culture based on mutual respect, recognition and appreciation of individual differences and talents;

Monitoring, analyzing, evaluating and sharing the five variables listed in Sec. 3;

Encouraging the creation of work teams based on the principles and values of the Charter, highlighting the distinctive features and the merit of each individual;

Promoting understanding, learning about other practices, sharing of experiences among the various signatory organizations, and wider public initiatives.

DATA MONITORING

The signatory organizations are committed to striving for equality of treatment based on eight variables listed below. Five of these are monitorable and the other three are not, primarily due to the privacy concerns. They can also be divided in internal and external dimensions of an individual (see Fig. 1).

Monitorable variables

- Gender;

- Tenure diversity - Career level: not tenured, tenure track, tenured;
- Age diversity - Age groups (20-30, 30-40, 40-50, 50-60, > 60);
- Working country;
- Citizenship.



Figure 1: Monitorable and non-monitorable variables divided in those regarding the internal and the external dimensions of an individual.

Non-monitorable variables

- sexual orientation; • physical ability;
- race/ ethnicity.

The collected data on the monitorable variables will be used for the three groups (involved organizations, collaborations and conferences) to evaluate the commitment for the promotion of diversity by studying correlations of gender/age with career level, career level with working country and country of origin.

For the case of Collaborations, the above-mentioned variables have to be provided for all members and for coordinators of work-packages and members of relevant committees, separately. The only additional required information will concern assigned talks on behalf of the collaboration. This will enable the following study:

- Coordination positions as a function of gender, nationality, age/career level, and working country;
- Assigned talks on behalf of the collaboration as a function of gender, nationality, age, and career level;
- Talks at plenary collaboration meetings as a function of gender, nationality, age and career level.

For the case of Conferences adhering to the Charter, the 5 variables above should be provided for all participants, for invited speakers, for all speakers, and for poster presenters, separately.

The results of the first year monitoring will be published in a common document. In the event that the monitoring of these variables will show an inequality of treatment at different levels for the signatory entities, a list of further actions will be proposed to eventually contribute towards the solution of such issues.

ANNEX TO THE DIVERSITY CHARTER

A.1 POSSIBLE TEMPLATES FOR MONITORING

A way to minimize the work load for all partners concerning the monitoring is to ask participating Institutes, Organisations, Conferences and Experiments to fill the respective Google Sheets in : <https://docs.google.com/forms/d/e/1FAIpQLSfhvbkfpg8Jyt1fAHdQ8iOaDh0RWlm9zOciref1AmdtX6qSbQ/viewform> If any signatory entity prefers to monitor the data itself, it is free to use any other method and just communicate

the results of its analysis.

A2 POTENTIAL SIGNATORIES OF THE DIVERSITY CHARTER

The present Charter is primarily intended to be used and enforced in the organizations and activities directly related to the consortia establishing it. Nevertheless, the adhesion to the Charter is open to any interested entity and APPEC, ECFA and NuPECC would be pleased to welcome every committed signatory.

Organizations, collaborations and conferences with large European participation are the primary focus of this Charter and are listed below. Note that the list is not exhaustive and will be expanded in the course of time.

- APPEC, ECFA and NuPECC as Consortia/Committees • Collaborations (> 100 members):
 - Particle Physics: ATLAS, CMS, LHCb, ToTem,...
 - Astroparticle Physics: ANTARES, Borexino, CTA, Dune, HyperKamiokande, KM3NeT, LEGEND, IceCube, Pierre Auger Observatory, Virgo, ...
 - Nuclear Physics: ALICE, CBM, NUSTAR, PANDA, ...
 - Conferences > 100 participants (sponsored and invited by the Consortia/Committees)
 - Conferences on Astroparticle Physics
 - International Cosmic Ray Conference;
 - Texas Symposium; * Neutrino Conference; * Neutrino Telescopes; * TeVPA.
 - Conferences on Nuclear Physics* International Nuclear Physics Conference (INPC)
 - European Nuclear Physics Conference (EUNPC)* International Conference on Nucleus-Nucleus Collisions (NN)* International and European Few-Body Conferences (FB and EFB)

- International Conference on Electromagnetic Isotope Separators (EMIS)

- International Conference on Advances on Radioactive Isotope Science (ARIS)* International Conference on Collective Motion in Nuclei under Extreme Conditions (COMEX)
- Conferences in Particle Physics (in this case conferences > 250 participants)
- European Physical Society Conference in High Energy Physics: EPS-HEP
- International Conference on High Energy Physics, ICHEP
- Large Hadron Collider Physics Conference, LHCP
- Hard Probes 2018: International Conference on Hard & Electromagnetic Probes of High-Energy

NUCLEAR COLLISIONS

- International Conference on Supersymmetry and Unification of Fundamental Interactions, SUSY
- International Workshop on Deep Inelastic Scattering and Related Subjects, DIS
- Phenomenology Symposium
- International Conference on Particle Physics and Astrophysics
- Computing in High Energy Physics, CHEP
- International Workshop on Advanced Computing and Analysis Techniques in Physics Research,

ACAT

- IEEE Nuclear Science Symposium and Medical Imaging Conference, IEEE-NSS
- Particles and Nuclei International Conference, PANIC
- Quark Matter Conference
- Reencontre de Moriond
- ...

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