

# *IEEE Nuclear and Plasma Sciences Society (NPSS) Strategic Plan*

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[Adcom/ExCom/BoG Approval Date]

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# 1 Executive Summary

The Nuclear and Plasma Sciences Society (NPSS) strives for the advancement of the theory and practice of the nuclear and plasma sciences and related emerging technologies and for the maintenance of high scientific and technical standards among its members. Our fields of interest include:

- computer applications in nuclear and plasma sciences
- fusion technology
- nuclear and medical imaging
- radiation instrumentation
- radiation effects
- particle accelerator science and technology
- plasma science and applications
- pulsed power science and technology, and
- nuclear power instrumentation and control systems.

The activities of NPSS are governed by its Administrative Committee (AdCom) according to the Constitution and By-Laws of NPSS. AdCom comprises the Executive (President, Vice President, Past President, Secretary and Treasurer), Chairs and elected representatives of its 8 constitutive Technical Committees, functional committees and appointed liaisons to cognate groups and communities. In the most recent 5 yearly review of NPSS in 2018/19, the Society and Council Review Committee (SCRC) recommended that the Society develop a strategic plan to aid short- and long-term goal setting and prioritization of strategic initiatives.

In response to the recommendation of the SCRC, in February 2019 the NPSS President formed a strategic plan working group comprising the President, Vice President, Division IV Director (and Past President) and our two other most recent Past Presidents. Strategic planning activities commenced at the 2019 March AdCom retreat and continued during the summer and fall AdCom meetings and the 2020 retreat, as well as through online discussions which took place between meetings. These activities included development of draft Vision and Mission statements and a SWOT analysis session from which short- and long-term goals and strategies were developed and workshopped. The final outcomes are encapsulated in this document which was presented for approval by AdCom at the November 2020 meeting.

## 2 Overview

This Strategic Plan is organized into two parts, the main document and appendices. The main document includes all background information that might be relevant to new members of AdCom or any individual who is interested in understanding the strategy of the NPSS and how we operationalise the strategic plan. The core information is provided also for individuals who may require information in support of the strategic planning process. The appendices include information used in the development of the strategic plan, as indicated in Table 1.

**Table 1.** Appendices

<b>Appendix</b>	<b>Title</b>	<b>Description</b>
Appendix A	SWOT Analysis	Analysis of the current state of NPSS activities – strengths, weaknesses, opportunities and threats
Appendix B	Gap Analysis	Analysis of alignment and gaps between our current activities and the newly formed strategic plan

## **3 NPSS Strategic Plan**

### ***3.1 Vision***

NPSS will be the leading nuclear and plasma science community.

### ***3.2 Mission Statement***

To provide opportunities for scientific exchange and career development and to promote a diverse and inclusive community of nuclear and plasma scientists and engineers.

### ***3.3 Strategic Goals***

Our broad strategic goals are:

- A. To offer high quality technical conferences, community engagement, networking and outreach activities that meet the educational, research and professional development needs of our community.
- B. To provide publications that are among the highest ranked journals in their respective fields.
- C. To encourage growth of a diverse and inclusive community of volunteers, with a particular focus on internationalization and increasing the participation and leadership opportunities for under-represented groups.
- D. To undertake impactful development activities that foster technological innovation, with priority given to activities related to the NPSS fields of interest, and to sustainability for recurring activities.

### ***3.4 Operational Plan***

The developed strategic goals will guide our planned activities over the next 5 years, at which time the strategic plan will be reviewed and updated. Many of our planned activities are core business and are ongoing, such as our conferences and publications. However, as our SWOT (appendix A) and gap analysis (appendix B) revealed, there are areas for improvement and perceived weaknesses and opportunities that are not being fully addressed.

Our primary (but not the only) mechanism to address these gaps and, in the process, operationalise the strategic plan is our new initiatives. New initiatives are 1- to 3-year activities that are not normally carried out under the operational budget. They are generally considered forward looking and strategic in nature. Under TAB rules we are able to allocate up to 3% of our reserves balance to new initiatives, provided the total budget for new initiatives of all societies and councils does not exceed 1% of total TAB reserves in any

given year. We are also able to allocate up to 50% of our operational surplus each year towards 1-year initiatives in the following year, with the remainder going into reserves.

During the July 2020 AdCom meeting, it was agreed to incorporate the following three questions into the evaluation of initiatives as a means to align our initiatives with the strategic plan. Proposers are asked to briefly address the following questions in their initiative proposals.

1. How does the initiative align with the NPSS and/or IEEE strategic goals?
2. What will be the impact of the initiative and benefits accrued?
3. Is the activity intended to continue after the term of the initiative and, if so, what is the plan for its financial sustainability?

## *Appendix A – SWOT Analysis*

	Positive	Negative
Internal	<b>Strengths:</b> <ul style="list-style-type: none"> <li>● Leadership / experience</li> <li>● Volunteer base</li> <li>● Quality, sustainable conferences</li> <li>● Quality publications</li> <li>● Short courses</li> <li>● Humanitarian activities</li> </ul>	<b>Weaknesses:</b> <ul style="list-style-type: none"> <li>● Membership recruitment &amp; retention</li> <li>● Lack of diversity (members &amp; leadership)</li> <li>● Budget structural weakness (rising expenses, static or declining revenues)</li> </ul>
External	<b>Opportunities:</b> <ul style="list-style-type: none"> <li>● Social media</li> <li>● OA and Plan S</li> <li>● New conferences</li> <li>● New partners</li> <li>● New engagement models</li> </ul>	<b>Threats:</b> <ul style="list-style-type: none"> <li>● Corporatization of IEEE</li> <li>● OA and Plan S</li> <li>● Competing conferences</li> <li>● Competing publications</li> <li>● Government policy &amp; international crises</li> <li>● Ageing membership</li> </ul>

## Appendix B – Gap Analysis

The following is an analysis of NPSS 2020/21 initiatives in terms of how well they align with our strategic goals, noting that several of these initiatives were proposed prior to the development of the current strategic plan. The analysis revealed that many of our initiatives address our perceived strengths, although there are also several that address our weaknesses.

Initiative	Owner	Time frame	Strategic Goal	SWOT
Instrumentation Schools	Christian Bohm	3 years	A, C, D	S, W
Student Chapter Membership Subsidy	Steve Gold	3 years	A	W
WIE ILC Travel	<u>Cinzia Da Via</u>	3 years	C	W
WIE Event at Schools	<u>Cinzia Da Via</u>	3 years	A, C	W
Indigenous Energy and Foods	Ken Galloway	3 years	D	S, w
ISVx (India, Asia)	Ray Larsen	3 years	D	S, w
Early Career Travel Grants	Craig Woody	3 years	A	S, w
ICOPS 50 year anniversary	Thomas Tierney	3 years	A	S
Journal visibility enhancement	<u>Paul Dressendorfer</u>	3 years	B	O
Interactive educ resources for MIC	Adam Alessio	3 years	A	S, w
ECR travel Grants for IPAC'21	<u>Katherine Harkay</u>	1 year	A	S, w
Radiation Community Exchange	<u>Michael Campola</u>	3 years	A	S, w
Plasmas for Inclusion, Peace and Equality	Martin Nieto	1 year	A, C, D	S,W

A = conferences & career development; B = publications; C = diversity, inclusion & internationalization; D = humanitarian & developing countries

The following is an analysis of the gaps where our perceived weaknesses and opportunities are not being addressed by any current initiatives. As noted in red, however, some of these are more appropriately addressed by existing decision-making structures within NPSS, such as the Executive and FinCom, while others are addressed by existing mechanisms, such as technical and financial co-sponsorship of conferences (TCS & FCS).

	Positive	Negative
Internal	<b>Strengths:</b> <ul style="list-style-type: none"> <li>● Leadership / experience</li> <li>● Volunteer base</li> <li>● Quality, sustainable conferences</li> <li>● Quality publications</li> <li>● Short courses</li> <li>● Humanitarian activities</li> </ul>	<b>Weaknesses:</b> <ul style="list-style-type: none"> <li>● Membership recruitment &amp; retention</li> <li>● Lack of diversity (members &amp; leadership)</li> <li>● Budget structural weakness (rising expenses, static or declining revenues) → responsibility of Exec, <u>FinCom</u> &amp; <u>AdCom</u></li> </ul>
External	<b>Opportunities:</b> <ul style="list-style-type: none"> <li>● Social media</li> <li>● OA and Plan S</li> <li>● New conferences → TCS, FCS</li> <li>● New partners → <u>ISVx</u>, journals, IEEE</li> <li>● New engagement models</li> </ul>	<b>Threats:</b> <ul style="list-style-type: none"> <li>● Corporatization of IEEE</li> <li>● OA and Plan S</li> <li>● Competing conferences</li> <li>● Competing publications</li> <li>● Government policy &amp; international crises</li> <li>● Ageing membership</li> </ul>