



World Nuclear University Summer Institute

The First 10 Years



“The WNU SI was an incredible, transformative experience in my thinking and approach to my career. It had broadened my perspective, knowledge and skills, and I wanted to use them in service of my company, colleagues and country. To that end, I actively sought out opportunities to apply what I learned in my working teams, mentored junior staff and participated in several public hearings about nuclear power.”

- 2014 WNU SI Impact Survey respondent

World Nuclear University Summer Institute: The First 10 Years

Every year over 70 young professionals representing all corners of the nuclear industry from around 30 countries gather for six weeks in July-August for the Summer Institute of the World Nuclear University (WNU SI). This course, which has been running since 2005, provides a comprehensive programme of lectures, tutorials, technical tours and group projects as well as cultural and social events.

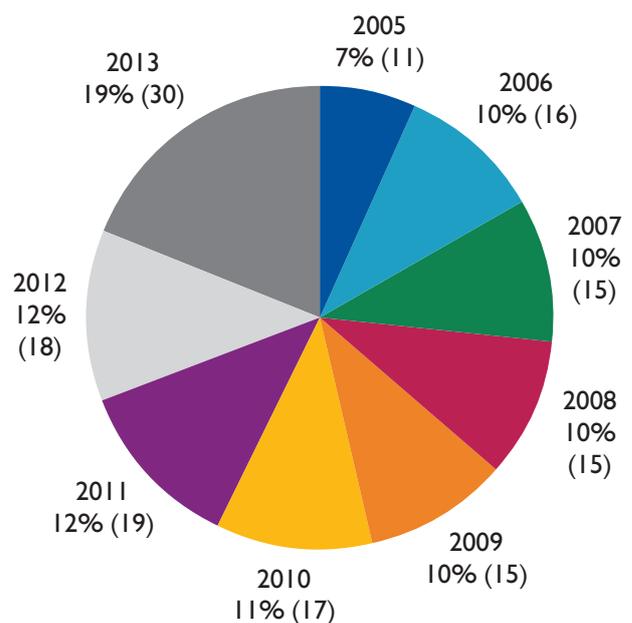
In 2014 the WNU team sent out a survey to all alumni to assess the long-term impact that the course has had on their lives and careers. Of 799 alumni to date, 156 responded to this impact survey. Of these, 7 percent attended the WNU SI in 2005, the inaugural year, 19 percent in 2013, the most recent year, and 10-12 percent for each year in between. Of the total respondents, 20 percent were sponsored by the International Atomic Energy Agency to attend from developing countries, ensuring the diversity of the programme. The survey has given the WNU team a representative view of both the short- and long-term picture of progress after the WNU SI.

The survey comprised 23 questions using a mixture of multiple choice and free text options, yielding quantitative and qualitative data that provided a number of useful insights. The feedback given was detailed and varied, demonstrating the affection and enthusiasm alumni continue to hold for the course as well as exposing opportunities to build on the excellent foundation established so far.

Invaluable 'big picture' perspective

"It was an amazingly in-depth programme that provided insights into all aspects of the nuclear field."

What year did you attend the SI?



The WNU has four founding supporters: the World Nuclear Association (WNA), the World Association of Nuclear Operators (WANO), the International Atomic Energy Agency (IAEA) and the Nuclear Energy Agency of the Organization for Economic Cooperation and Development (OECD-NEA). This combination of industry and inter-governmental organisations, each with a global function, ensures that the course is not influenced by national interests or limited by industry focus. In addition, both teaching staff and fellows are extremely diverse, with lecturers and mentors from over 10 countries and several international organisations. The result is a 'big picture' view that was one of the most frequently cited benefits:

"The WNU SI gave me the 'big picture' necessary to work in the nuclear sector at any level."

“An understanding of the big picture enables me to effectively integrate international concerns for nuclear into project plans and designs.”

“I might have to play a role in the administration or policy making of this nuclear business of Bangladesh Atomic Energy Commission in the near future and hence this global nuclear vision is essential for me.”

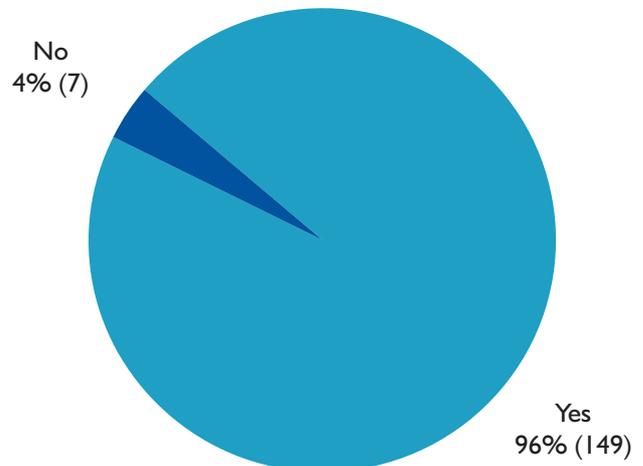
In addition to the international outlook gained, alumni also appreciated the coverage of relevant fields that put industry activities in necessary context. One respondent summarised: “WNU SI gave me a global understanding of key issues regarding energy policies, nuclear laws and regulations, relationship between nuclear regulator and licensees, public communication regarding nuclear power.”

In particular, multiple respondents noted an increased comprehension and appreciation of the role of regulators and different regulatory regimes: “My understanding of the international standards and regulation regime acquired at the WNU has been an asset.”

In one welcome outcome of this ‘big picture’ perspective, several reported an increased motivation to promote nuclear energy to peers, policy makers and the public; for example: “As a later result of WNU SI, I became more vocal about the advantages of nuclear power and was motivated to give presentations and speeches internally and at conferences.” One respondent explicitly stated: “Prior to the course, I was reluctant to answer people’s questions about the nuclear industry because I did not have the facts.” Simply supplying WNU SI fellows with thorough and accurate information has created a generation of nuclear experts who are prepared and willing to directly address the questions and concerns of the public.

Immediate real-world applications for knowledge gained

Have you noticed an improved understanding of nuclear topics and incorporated them into your every day work?



“I can follow and understand the news feeds, from environmental to technological, safety, legal, etc. Others in my department (and outside) frequently come to me with questions around the industry space and I’m able to provide answers (or know where to go for them) thanks to the WNU.”

The impact survey showed that 96 percent of alumni leave the WNU SI with an improved understanding of nuclear topics and incorporate this into their everyday work. This reflects the wide range of topics studied at the WNU SI, including reactor physics, economics and nuclear law. It also showed that 87 percent of alumni make use of the competencies gained at the WNU SI within three years, most of that within the first year. This demonstrates the good return on investment for WNU SI attendance.

Specifically regarding the technical content, 81 percent of alumni updated their knowledge on multiple topics while 82 percent acquired new knowledge. Reported applications of this knowledge ranged from communicating technical ideas more effectively to non-technical clients or colleagues to contributing to the decision of which reactor design to use for a country’s first nuclear

power plant. Nuclear energy utilises complicated and constantly developing technology; even those whose jobs are not specifically technical benefit from a solid understanding of the basics, especially when one considers the extensive myths surrounding nuclear.

Significantly, 95 percent of alumni maintained their enthusiasm for continuous learning over a wide range of topic areas after the WNU SI. The knowledge gained is of undisputed value, but the desire to increase this knowledge – which the WNU SI fosters – lasts for years, equipping alumni for a long career in the nuclear industry.

From survey responses it is clear that the level of understanding alumni reach over the course of the WNU SI enables them to follow nuclear news feeds more easily as well as use reliable information sources more effectively to search for any data they need. As a result, 90 percent of alumni are better able to analyse and synthesise information in the global nuclear industry while 76 percent have an increased ability to anticipate the effect of external changes on their work, with obvious benefits to their employers.



Top quality lecturers and mentors

“I met and gained access to people I would never have had access to otherwise.”

Thanks to the founding supporters WNU has contacts at the highest level with companies and organisations from around the world, ensuring that lecturers and mentors – drawn from a pool of enthusiastic specialists whose employers fully encourage their participation – are also of the highest level. The sentiment above was repeated by multiple respondents, who appreciated the value of practical, real-world lessons that “could not be found in books”:

“The calibre of the lecturers was high – watching, hearing and engaging with such individuals was extremely beneficial.”

“Interacting with leaders having a great influence over their organisation (like CEO or VPs) greatly improves confidence and my desire to become a leader in my fields of interest.”

“The WNU SI team should be proud of having such an outstanding group of fine mentors.”

These encounters had a lasting impact: 85 percent of respondents felt the lecturers and mentors influenced their development, some maintaining relationships with mentors to this day. Once an individual returns to work, such experiences and contacts are of great benefit to their employers.

Increased motivation and effectiveness

“A message for future fellows – you don’t realise how much you learned in six weeks until you return to your day to day life with a different perspective and increased energy for the same work you did before you left.”

Attending the WNU SI contributed to the professional advancement of 83 percent of alumni. Within IAEA-sponsored fellows from newcomer countries this number increased to 93 percent. Contributing factors included increased confidence in their work, reported by 71 percent of alumni, and increased motivation, reported by 76 percent. This result was particularly strong for IAEA-sponsored alumni, 87 percent of whom were more motivated than before, 90 percent were more confident in their work and 73 percent were more effective as a result of completing the WNU SI.

This confidence and motivation had a direct effect on career progression, with several respondents giving their WNU SI experience credit for promotions they had received.

However, the effects went beyond seeking promotion into a commitment to the nuclear industry:

“The SI opened my eyes to the various opportunities and career paths throughout the nuclear space. I firmly believe that it enhanced my desire for a life-long career in the industry.”

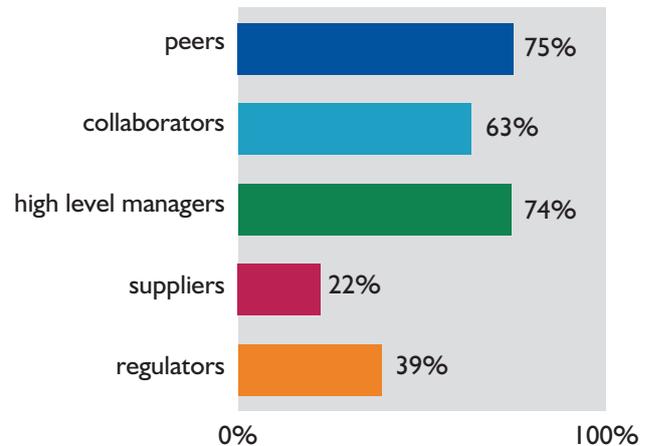
“WNU SI gave me a global picture on how my work contributed to humanity, which is a great source of motivation!”

“It truly has motivated me to stay within the nuclear industry.”

More confident and effective communication, internally and externally

“Before my attendance I had very little understanding of how politics, economics, environment and public speaking related to my work. This all changed after the WNU.”

After the SI, have you noticed an increase in your capacity to communicate with (choose as many as you want)?



The advantages of the WNU SI are particularly noteworthy regarding communications. Internally, 75 percent of alumni are better able to communicate effectively with their peers and 74 percent with high level managers since attending the WNU SI. Externally, three major advantages were reported by multiple respondents:

1. Increased ability to ‘translate’ nuclear for those outside the industry

“I can walk a listener through the fuel cycle in several different ways, depending on their level of understanding, from a high level overview to a more detailed dive into the technology.”

2. Increased ability to address concerns of the general public

“Although we are involved in uranium mining the public often has broader nuclear questions I am better able to answer now.”

3. Increased willingness and capability to advocate for nuclear energy

“Following the course, I gained a lot of confidence and became an advocate of the nuclear industry. I have a number of opportunities where I spoke to the public and politicians.”

Considerable networking advantages

“Meeting the next generation of leaders in the nuclear industry has been and will continue to be invaluable for my career.”

After completion of the WNU SI 84 percent of alumni are more open to new professional relationships, a disposition encouraged by the WNU SI alumni network. This is largely maintained through social media and the Alumni Assembly, an event held once every two years to which all WNU SI alumni, mentors and lecturers are welcome. There were many reported benefits of this network, ranging from re-establishing exchange agreements between two organisations to gaining a path to sites or individuals otherwise difficult to access.

In response to the question “Has networking via social media with former SI colleagues or participating in the Alumni Assembly added value for your career?” 55 percent responded that it had. Breaking down this response, however, such networking was valuable for 73 percent of IAEA-sponsored alumni and 51 percent of those sponsored by their companies in established nuclear countries, suggesting this is an aspect of the WNU SI that particularly benefits fellows from newcomer countries.

One theme that arose repeatedly was the usefulness of the network in obtaining accurate information quickly, notably in the aftermath of the Fukushima incident of 2011. While those in established nuclear countries may find other networking opportunities more useful in their day-to-day lives, the international alumni network is of great value in such times. Even in less tense situations, one respondent noted making use of the ability to contact those working with similar reactors to resolve issues in their own station.



What next for the WNU SI?

In 2013 WNU leadership changed as WNA Director General Agneta Rising became WNU President, appointing Patricia Wieland to the post of Head of WNU in January 2014. This has facilitated a number of changes, including increased involvement of the founding supporters by way of establishing a WNU Advisory Panel.

In response to alumni feedback in recent years, starting from 2014 only 18 percent of the 280 hours of activities will be in traditional lecture format. The rest of the time will be devoted to workshops, case studies, simulations and other group exercises. As one respondent in the impact survey noted: “I think that the small group exercises and leadership training was very valuable and applicable to any area that people work in.”

While alumni feedback varied greatly on which subjects to emphasise and which to downplay, from 2014 there will be an increased focus on such topics as safety, security, safeguards and regulation; new fuel perspectives; and nuclear energy in newcomer countries, from the perspective of both vendors and the countries themselves. In light of these changes there have also been some changes to the faculty in order to better reflect the cultural diversity of the fellows and contribute to the “big picture” perspective that is such a benefit.

Finally, after five years based in Oxford, UK, the WNU SI will return to its previous model of locating the campus in other countries as well, starting with Uppsala, Sweden. Sweden has hosted the WNU SI before, as have the USA, Canada and South Korea. While Oxford has proven an excellent location with many organisational advantages, WNU management agreed with the respondent who wrote that “the WORLD Nuclear University should be held around the world.”



In 2014 the WNU SI was announced training course of the year in the short course category for their 2013 awards by Nuclear Engineering International magazine. One expert judge commented: “The WNU Summer Institute is a very effective and industry relevant initiative with high level teaching quality, including some innovative ideas such as an alumni network.”

The WNU SI is already an outstanding course that holds a unique place in the spectrum of nuclear training options, benefiting alumni, their employers and the global nuclear industry. This impact survey and the proposed changes demonstrate the WNU team’s commitment to keep it that way.



Oxford 2013



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