



NUCLEAR OLYMPIAD

Part 3: public opinion

Public opinion on radiopharmaceuticals and the
nuclear industry.

Abstract:

As part of the WNU Nuclear Olympiad 2019 round 3, over 100 surveys were given out to patrons located at Hammonasset State Beach located in Madison Connecticut over the period of July 2019 to August 2019

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Introduction

Hello Friends!! Today I want to take you on a journey, a journey of numbers and statistics. Within this journey we will analyze public opinion on nuclear energy. Over 100 people were surveyed on 11 different questions. The questions focused on a few different fields all connected to the nuclear issue. Among them are:

- public opinion
- radiopharmaceuticals
- education
- global warming solutions
- stance on energies.

The surveys were taken at Hammonasset State Beach in Connecticut a location frequented by people of all ages. The state is known for liberal policies

102 surveys were recorded. 60 males, 42 females

Results

Question 1 and 2: What country are you from? What is your age and gender?

Comments: Demographics.

Country	USA	97%
	Italy	3%
Age	>20	35.2%
	20-30	23.5%
	30-40	5.9%
	40-50	2.9%
	50-60	5.9%
	60+	14.7%
Gender	Male	58.8%
	Female	41.2%

Question 3: Do you know what a radiopharmaceutical is?

Comments: In all fairness despite being a nuclear, electrical and chemical engineering student I didn't know what a radiopharmaceutical was until tasked with this project. For those who did know there was a general consensus that it was because they or someone close to them had undergone chemotherapy or similar treatment save for one gentlemen who used rad tracers within his line of work.

Yes	23.5%
No	76.5%

Question 4: Radiopharmaceuticals are radioactive drugs that can be used for diagnosis and therapy of diseases. Have you ever taken any radiopharmaceuticals for medical diagnosis or treatment?

Comments: I watched as people's eyes lit up as they discovered what is a radiopharmaceutical as they read the actual question. That being said the demographics between those who actually have used it stem from people using either a chemotherapy or one chemical/petroleum engineer I had the privilege of talking about and he told me a story about how he used radioactive tracers to find leaks within his fluid systems.

Yes	8.8%
No	91.2%

Question 5: Do you think radiopharmaceuticals are produced in nuclear reactors or accelerators?

Comments: General consensus is a lack of knowledge of radiopharmaceuticals. Discussions with patrons stated that most people guessed the answer

Nuclear reactors	8.8%
Particle accelerators	29.4%
Both	26.5%
Neither	35.2%

Question 6: Overall do you strongly favor or oppose the use of nuclear energy as a way to provide electricity?

Comments: The sum of answers 4 and 5 is almost double the sum of 1 and 2 leading to the assumption that nuclear is more positive then it is negative. About a quarter of the population is neutral about the energy

1 (oppose)	17.6%
2	5.9%
3	26.5%
4	20.5%
5 (favor)	29.4%

Question 7: What is your position based on?

Comments: People took it upon themselves to answer multiple positions thus percentages will not add up to 100. As public opinion is as high, an assumption can be made that if the surveys were taken after the Russian radiation explosion incident, then public outlook on nuclear technology may be vastly different

School lectures	26.4%
Public Opinion (news/ social media)	44.1%
Parents and friends	17.6%
Other	35.3%

Question 8: If you oppose the use of nuclear energy could you explain why?

Comments: Only those who responded negatively were asked to respond to question 6. Most opposition came from either a preference to natural medicines and remedies, the supposed danger to communities and the environment and human error.

Question 9: Would you find yourself prepared to renounce some of the high tech goods in order to protect the environment (i.e. car/phone)?

Comments: These answers raise many red flags. Comparing the answers to the story about sanctuary cities in the US, most people who were in support immigrants living freely in their

cities assuming that it would be of no cost to themselves. When immigrants did move to their location, the overall standard of living decreased. it can be assumed that people did not properly internalize the question and only placed yes as a way of feeling good.

Yes	67.9%
No	32.1%

Question 10: In your opinion what us the technology for energy production in the future?

Comments: Despite the inefficiency, solar is the primary answer. Upon discussion with people they did not seem to be aware of the concept of baseline load, or what to do for electricity on cloudy days with lack of wind. Further discussions of this question will be discussed in the next question.

Nuclear	23.5%
Solar	52.9%
Wind	29.4%
Hydro	32.3%
Other	11.8%
Unsure	11.8%

Question 11: Why do you think solar and wind energy only account for a small fraction of energy production?

Comments: Question 11 was left open ended. The general consensus consisted of either the cost/productivity of the technologies or that or the idea of lobbyist in government influencing policies.

Weather	5.9
Efficiency	12.5
Monopolies, lobbyists and government	16.9
People and lack of knowledge	11.8
Cost of production and how cheap other energies can be	41.1
unsure	11.8

Conclusion

Brief result analysis pointed out that most people have a generally positive outlook on nuclear power and technologies they feel that their opinions are not completely valid due to a lack of general knowledge of concepts.

Student aged demographics show a neutral positive view also stemming from neutral public influences and a lack of education. The idea that nuclear power is a “green energy source” is debatable. The American Nuclear Society is currently pushing new student towards nuclear related classes and engagement and have just recently been given the green light by the Department of Education.

As students are uninterested in the subject matter, a need for more advertising and internet memes should be more heavily imposed. One idea could be the complete upheaval of the word “safety”. When you hear the word safety being used roughly in 1 in 10 words most people start to have an idea that a concept is not really safe. A parody of the concept could work well with the current generation.

In some way the hope is still alive that public opinion may still exist as something that can be changed for a goal of mass producing nuclear power plants and solving energy and ultimately global warming.

References

Trontl, K. (2004). 2003/04 public opinion survey Nuclear energy - the present and the future. In Debrezin, N. (Ed.). Proceedings of the 5th International Conference: Nuclear Option in Countries with Small and Medium Electricity Grids, (p. 996). Croatia