



**For a
career
that is**

***Rewarding
Challenging
Exciting***



**Nuclear science
and technology
is in your future**



***This field is
new and evolving,
widely applicable,
and simply
powerful.***

Mary Lou Dunzik Gougar
Nuclear Engineer
Argonne National Laboratory – West
Idaho Falls, ID



**American Nuclear Society
www.ans.org**

**555 N. Kensington Ave. • LaGrange Park, IL 60526
(708) 352-6611**



Nuclear science and technology offers

Unlimited Possibilities!

“Nuclear science is virtually an untapped field. We are only really beginning to learn how powerful this energy really is and its myriad of applications.”

Matthew Lindsay
Nuclear Engineering Student
Purdue University
West Lafayette, IN

Learn more about why other young people are choosing the nuclear field! Go to www.ans.org/pi/

These are exciting times for professionals in the nuclear science and technology field. New discoveries allow researchers and technicians to save lives, improve the environment, and venture into space.

You can be a part of the future by choosing a career in this unique field. Salaries are excellent and there are unlimited opportunities to advance. Set your sights on a career that will be both professionally and personally rewarding.



*Where do you want
to go with your degree?*



**The sky's
the limit!**

**Nuclear science and
technology is a
broad, diverse field with
unlimited potential.**

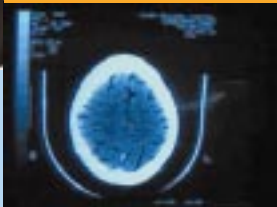
**The choice
is yours!**



**While this brochure outlines
possible careers in the major
fields of nuclear science, other
nuclear-related choices include:**

- Archaeology and paleontology
- Crime investigation
- Science education
- Policy making
- Art appraisal
and authentication





Medical Science

Discoveries based on nuclear science have dramatically improved both longevity and quality of life.

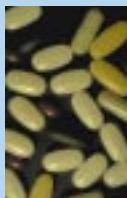
Nuclear medicine benefits over 35,000 patients daily in the U.S. in our hospitals and medical clinics.

Physicians rely on x-rays to diagnose tumors without the need of invasive surgery. Radiation is being used to treat leukemia and other types of cancer.

More than half of all medical equipment used in hospitals is sterilized with radiation. Radioisotopes are used in the development of more than 80 percent of all new drugs. Radiation techniques have played a key role in twelve of the last fifteen Nobel Prizes awarded for medicine and physiology.

Sample Career Choices in Nuclear Medicine and Biology

- Health physicists assure safe application of radiation
- Physicians use nuclear medicine to diagnose and treat diseases
- Nuclear medicine technologists run tests in hospitals
- X-ray technicians work with patients in hospitals





“So much of our understanding about nature, ourselves, and how things work is related to the use of radioactive atoms. Many of the items that we work with every day have been improved or exist because of radiation. I chose the nuclear field due to the advantage of using nuclear fuel over many other applications for large scale production of electricity.”

Candace Davison
Senior Reactor Operator and
Research & Education Specialist
Radiation Science and Engineering Center
University Park, PA



Energy

With electricity consumption constantly rising, more countries around the world are viewing nuclear energy as a viable option for reducing the number of fossil fuel-burning electrical plants, which emit large amounts of the greenhouse gas, carbon dioxide. Nuclear energy is seen as a valuable, clean and efficient alternative to pollution-producing sources of energy relied on heavily today.

Nuclear energy also powers satellites and ships, and provides electrical needs for some space laboratories.

Sample Career Choices in Nuclear Energy

- ➔ Reactor operators run the controls at a power plant to produce electricity
- ➔ Engineers design power plants and supervise operations
- ➔ Nuclear scientists explore ways to improve safety and efficiency
- ➔ Technologists locate underground natural resources





Environment

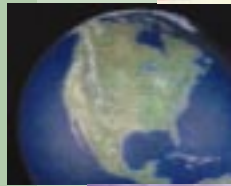
As the world's population grows, the need for food and other perishable resources is increasing rapidly. Radiation helps us develop plants that produce higher yields, raise healthier animals, eliminate pests without chemicals, and enhance food safety.

In recent years, more than 1,500 new crop varieties have been developed in 40 countries around the globe. Scientists used radiation technology to help them develop 90 percent of those new varieties. In Italy, over half the pasta is made from a wheat variety developed by using radiation techniques. In Africa, sterile insect technique (SIT) was used to control the Tsetse fly that transmits disease in cattle and sleeping sickness in humans. In another country, a new cotton variety resulted in crops nearly twice the size of previous crops.



Sample Career Choices in Environmental Research and Nuclear Technology

- Gamma facilities operators use radiation to destroy microorganisms like salmonella or E. coli
- Biologists conduct experiments to develop new varieties of crops
- Research assistants help scientists and food engineers collect and analyze data
- Technologists measure to make the most of limited water supplies



“The most exciting aspect of this field is the renewed quest to make significant improvements in the technologies of nuclear energy. All successful industries rely on this kind of exciting advance in their technology and nuclear energy is to be counted among them.”

Paul Wilson
 Assistant Professor, Engineering Physics
 University of Wisconsin – Madison
 Madison, WI



Preparing for a Career in Nuclear Science and Technology

Considering a career in nuclear science or technology? Take steps to prepare yourself during your high school and college years.

Strong backgrounds in science and math are required for engineers and scientists. To enter the field as a scientist or engineer, you will need at least a four-year bachelor's degree, and some positions require a master's degree or doctorate.

Technologists and technicians also need at least some math and science education. Entry level positions generally require at least two years of college. In addition, professionals in all these jobs benefit from communication and business skills. It is important to be able to explain your ideas, research, and projects to managers or to those in other fields.

Scholarships Are Available

Scholarships are available from the American Nuclear Society, the U.S. Department of Energy, and other sources. Go to www.ans.org/pi/ for more information.

Learn more!

Go to www.ans.org/pi/ for

- Success stories of young professionals
- Colleges & universities that offer nuclear-related degrees
- Job descriptions and salary ranges
- Scholarship information

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