

**Program:** Nikola Tesla

**Speaker:** Richard B. Gunderman, MD, PhD, MPH. Chancellor's Professor of Radiology, Pediatrics, Medical Education, Philosophy, Liberal Arts, Philanthropy, and Medical Humanities and Health Studies at Indiana University.

**Introduced by:** Bill Dick **Attendance:** 128

**Guests:** Deb Page, Dr. Carolyn Nordstrom, Guy Wooster, G. Mitchell Steckler, Benny Ko, Isabella Noe, Steve Brown, Todd Stockwell, Jason Rasp

**Scribe:** Gerry Kurlander

**Editor:** Ed Nitka

Nikola Tesla was born in 1856 in Croatia of Serbian parents. Dr. Gunderman began his lecture showing Tesla in Bryant Park, New York City, feeding pigeons. He was an unusually gifted man who did not form relationships easily, and he did not like to be touched physically by other individuals. Tesla's father was an Orthodox priest. His mother was a very bright and creative lady who developed many tools for kitchen use. It was to his mother that he attributed his creative abilities. His wireless patents contributed to developments in radio, television, neon signs and fluorescent light bulbs. Although he never completed his schooling, he became very proficient in electrical engineering, mechanical engineering, and physics and indeed he was also a futurist. In 1881 he moved to Budapest, Hungary to work for the Budapest Telephone Exchange where he made many improvements in the operation. He had other jobs in Europe where his brilliance was observed by an Edison manager who brought him to the United States in 1884. He did not stay long with at Edison, going into business for himself. He patented an arc lighting system and an improved DC generator.

Tesla had ideas for developing alternating current motors. He went into business with these motors in mind but this was not economically successful. He found himself penniless working as a ditchdigger for two dollars a day. He later developed an induction motor that ran on alternating current. This was of interest to the Westinghouse Company where he worked for a time. They finally rejected this alternating current motor and adopted a DC traction motor instead. Later, of course, they did accept his alternating current. During this period the classic battle between Edison's direct current and Tesla's alternating current was going on.

In 1893 Westinghouse Electric asked Tesla to participate in 1893 World's Columbian Exposition in Chicago. It was there that alternating current was used to light the exhibition and part of the southside of Chicago. This was the key event in the history of alternating current power demonstrating to the American public that AC power could be made safe, reliable and efficient. It was also shown that AC power could be generated using the energy of waterfalls. Tesla noticed that the invisible energy could expose film, perhaps demonstrating x-rays before Wilhelm Roentgen. In addition, he envisioned this electricity to be useful in the treatment of disease.

In 1898 he demonstrated a radio controlled toy boat at an exhibition in Madison Square Garden. This seemed to be truly magic to the audience. In Colorado Springs he mentioned the possibility of wireless communication. He also demonstrated the possibility of artificial lighting without bulbs while fudging and using a double exposed the film. His imagination for the uses of electricity was boundless. He considered transmission through the air across the Atlantic or even through the earth. He sold some of his ideas to J.P. Morgan. This did not end well for Tesla. In the end he was penniless. With all his creativity resulting in many patents which proved extremely important in the lives of all human beings, he did not receive a Nobel Prize but on the other hand neither did Edison.

He died in 1943 in his hotel room. His ashes were later sent for final burial in Belgrade. It might be noted that in his busy, creative life, he did find time to have a relationship with two beauties of the age, Clara Dodge and Sarah Bernhardt, who evidently pursued him!.

The tesla is a unit of magnetic flux density in the SI system of units. Magnetic Resonance Image units are characterized in teslas.



Richard B. Gunderman