Form No. 10-300 (Rev. 10-74)

Theme: Americans at Work
Subtheme: Science and Invention

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

NATIONAL REGISTER OF HISTORIC PLACES INVENTORY -- NOMINATION FORM

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SEE INSTRUCTIONS IN *HOW TO COMPLETE NATIONAL REGISTER FORMS*
TYPE ALL ENTRIES -- COMPLETE APPLICABLE SECTIONS

1 NAME

HISTORIC
JOSEPH ERLANGER HOUSE

AND/OR COMMON
5127 Waterman Boulevard

2 LOCATION

STREET & NUMBER
5127 Waterman Boulevard — __NOT FOR PUBLICATION

CITY, TOWN
St. Louis — __ VICINITY OF — CONGRESSIONAL DISTRICT

STATE	CODE	COUNTY	CODE
Missouri	29	St. Louis	510

3 CLASSIFICATION

CATEGORY	OWNERSHIP	STATUS	PRESENT USE	
__DISTRICT	__PUBLIC	X OCCUPIED	__AGRICULTURE	__MUSEUM
X BUILDING(S)	X PRIVATE	__UNOCCUPIED	__COMMERCIAL	__PARK
__STRUCTURE	__BOTH	__WORK IN PROGRESS	__EDUCATIONAL	X PRIVATE RESIDENCE
__SITE	**PUBLIC ACQUISITION**	**ACCESSIBLE**	__ENTERTAINMENT	__RELIGIOUS
__OBJECT	__IN PROCESS	__YES: RESTRICTED	__GOVERNMENT	__SCIENTIFIC
	__BEING CONSIDERED	__YES: UNRESTRICTED	__INDUSTRIAL	__TRANSPORTATION
		X NO	__MILITARY	__OTHER:

4 OWNER OF PROPERTY

NAME
Francis Garcia

STREET & NUMBER
5143 Waterman Boulevard

CITY, TOWN — STATE
St. Louis — __ VICINITY OF — Missouri

5 LOCATION OF LEGAL DESCRIPTION

COURTHOUSE, REGISTRY OF DEEDS, ETC
Office of Recorder of Deeds, St. Louis City Hall

STREET & NUMBER
12th and Market Streets

CITY, TOWN — STATE
St. Louis — Missouri

6 REPRESENTATION IN EXISTING SURVEYS

TITLE
None

DATE
__FEDERAL __STATE __COUNTY __LOCAL

DEPOSITORY FOR SURVEY RECORDS

CITY, TOWN — STATE

(1)

7 DESCRIPTION

CONDITION		CHECK ONE	CHECK ONE
__EXCELLENT	__DETERIORATED	__UNALTERED	X ORIGINAL SITE
X GOOD	__RUINS	X ALTERED (interior)	__MOVED DATE_____
__FAIR	__UNEXPOSED		

DESCRIBE THE PRESENT AND ORIGINAL (IF KNOWN) PHYSICAL APPEARANCE

The Joseph Erlanger House is located at 5127 Waterman Boulevard in St. Louis, Missouri. The building is a detached two and one half story brick residence. The architect and builder are unknown. According to the present owner the building was constructed in approximately 1903. The house is not noted in any survey of St. Louis architecture and does not appear to be of architectural importance. Features of the house are a hip roof with dormer windows on three sides, two side chimneys, and a two bay front elevation. There is a three sided projecting bay on the second story of the front elevation over the porch and a three sided bay with chimney on the east first and second stories. A columned porch extends across the front. With the exception of the addition of a fire escape on the east elevation the exterior of the house has undergone no alterations since the Erlanger period. The original side hall floor plan featured a living room, dining room, and kitchen on the first floor, bedrooms and one bathroom on the second floor, and small bedrooms on the one half third story, Between 1965 and the present the interior has been significantly altered to accomodate its present function as a rest home.

Joseph Erlanger moved to St. Louis in 1910. He lived at 4542 Forest Park Boulevard until 1913. From 1913 to 1917 the Erlangers lived at 4248 West Pine Boulevard. In 1917 Dr. Erlanger purchased 5127 Waterman Boulevard in what at the time was the fashionable middle and upper middle class Forest Park area of St. Louis. The house is the home in which Erlanger and his wife Amiee raised their family. Unlike many residents of the area Erlanger did not move to the suburbs. 5127 Waterman Boulevard remained his home until his death in 1965. He lived 48 years at the same address during the most productive period of his life.

8 SIGNIFICANCE

PERIOD	AREAS OF SIGNIFICANCE -- CHECK AND JUSTIFY BELOW				
__PREHISTORIC	__ARCHEOLOGY-PREHISTORIC	__COMMUNITY PLANNING	__LANDSCAPE ARCHITECTURE	__RELIGION	
__1400-1499	__ARCHEOLOGY-HISTORIC	__CONSERVATION	__LAW	X SCIENCE	
__1500-1599	__AGRICULTURE	__ECONOMICS	__LITERATURE	__SCULPTURE	
__1600-1699	__ARCHITECTURE	__EDUCATION	__MILITARY	__SOCIAL/HUMANITARIAN	
__1700-1799	__ART	__ENGINEERING	__MUSIC	__THEATER	
__1800-1899	__COMMERCE	__EXPLORATION/SETTLEMENT	__PHILOSOPHY	__TRANSPORTATION	
X 1900-	__COMMUNICATIONS	__INDUSTRY	__POLITICS/GOVERNMENT	__OTHER (SPECIFY)	
		__INVENTION			

SPECIFIC DATES 1917-1965 BUILDER/ARCHITECT unknown

STATEMENT OF SIGNIFICANCE

In the first decades of the 20th century American medicine came of age. Whereas throughout the 19th century American researchers and practicing physicians relied on European discoveries for new impulses, in the 20th century American investigators joined their European colleagues on an equal footing. A major factor in the qualitative improvement of American medicine came from Johns Hopkins University. There William Welch, William Osler, Simon Flexnor, and others restructured the teaching of medicine along German lines. Instead of going to Europe American medical students could receive a quality education at home. Soon Johns Hopkins graduates were making major contributions to medicine. Among the first Johns Hopkins graduates who attained international recognition was a doctor and physiologist named Joseph Erlanger. When in 1944 Erlanger received the Nobel Prize in medicine and physiology, he documented America's credentials as a leader in world medicine. "Joseph Erlanger," his National Academy of Sciences biographer writes, "will be best remembered for the epoch-making introduction into neurophysiology of the cathode ray oscilloscope and the exploration of the electrical activity of nerve fibers. But Joseph Erlanger was also one of the great founders of American physiology in the first quarter of the 20th century."[1]

Life

Joseph Erlanger was born January 5, 1876, in San Francisco, California. His father was a German immigrant. Erlanger attended local public schools and while still at the San Francisco Boys High School developed an interest in science. In 1891 after only two years of high school he was admitted to the University of California. Erlanger had already decided to become a physician and he studied the pre-medical program in the School of Chemistry. In 1895 he graduated. Erlanger had been an outstanding student and, because of his outstanding academic record, he was easily accepted to the new Johns Hopkins Medical School.

Johns Hopkins had a decisive influence on Erlanger's subsequent career. At the university Erlanger had the opportunity to study under some of the men who formed the elite of the American medical profession. When in 1899 he received his MD degree, the full influence of the university's emphasis

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[1] Hollowell Davis, "Joseph Erlanger," National Academy of Sciences Biographical Memoirs, 41, (New York, 1970), p. 111.

(2)

9 MAJOR BIBLIOGRAPHICAL REFERENCES

Asimov, Isaac. Biographical Encyclopedia of Science and Technology (New York, 1972).

Davis, Hollowell. "Joseph Erlanger," National Academy of Sciences Biological Memoirs, 41, (New York, 1970).

Singer, Charles J. and E. Ashworth Underwood. A Short History of Medicine, (New York, 1962).

10 GEOGRAPHICAL DATA

ACREAGE OF NOMINATED PROPERTY less than one acre

UTM REFERENCES

	ZONE	EASTING	NORTHING
A	15	737790	4,218,1120
B			
C			
D			

VERBAL BOUNDARY DESCRIPTION

LIST ALL STATES AND COUNTIES FOR PROPERTIES OVERLAPPING STATE OR COUNTY BOUNDARIES

STATE	CODE	COUNTY	CODE
STATE	CODE	COUNTY	CODE

11 FORM PREPARED BY

NAME / TITLE

James Sheire, Historian

ORGANIZATION — DATE

Historic Sites Survey, National Park Service — July 8, 1976

STREET & NUMBER — TELEPHONE

1100 L Street, N.W. — 202-523-5464

CITY OR TOWN — STATE

Washington, D.C. 20240

12 STATE HISTORIC PRESERVATION OFFICER CERTIFICATION

THE EVALUATED SIGNIFICANCE OF THIS PROPERTY WITHIN THE STATE IS:

NATIONAL X STATE ____ LOCAL ____

As the designated State Historic Preservation Officer for the National Historic Preservation Act of 1966 (Public Law 89-665), I hereby nominate this property for inclusion in the National Register and certify that it has been evaluated according to the criteria and procedures set forth by the National Park Service.

FEDERAL REPRESENTATIVE SIGNATURE

TITLE — DATE

FOR NPS USE ONLY

I HEREBY CERTIFY THAT THIS PROPERTY IS INCLUDED IN THE NATIONAL REGISTER

DATE

DIRECTOR, OFFICE OF ARCHEOLOGY AND HISTORIC PRESERVATION

ATTEST: DATE

KEEPER OF THE NATIONAL REGISTER

on medical research became apparent. Instead of going home to San Francisco or elsewhere in the United States to open a private practice, which thanks to his Johns Hopkins degree would probably have been lucrative, Erlanger turned to research. From 1899 to 1906 he remained at Johns Hopkins. After interning under William Osler he served as an assistant instructor in physiology under the direction of William H. Howell, one of the country's best physiologists. It was Howell who influenced Erlanger to become a physiologist and from 1903 to 1906 he taught the subject at Johns Hopkins while also conducting research.

In 1906 the University of Wisconsin recruited him to its faculty by offering him a full professor and leadership in the creation of the departments of physiology and physical chemistry. Erlanger's stay in Wisconsin lasted only four years. In 1910 he accepted an offer to be professor and head of the department of physiology in the school of medicine at Washington University at St. Louis. It was at Washington University that Erlanger collaborated with Herbert S. Gasser on the work for which they were awarded the Nobel Prize. St. Louis remained Erlanger's home for the rest of his life. In 1946 he became Emeritus Professor of Physiology. Although he was then 72 years old, Erlanger continued to work many years after retirement. Death came in St. Louis on December 5, 1965.

Joseph Erlanger was the recipient of numerous awards and honors of which the 1944 Nobel Prize was the most prestigious. He held honorary degrees from seven universities among them Johns Hopkins, California, Pennsylvania, and the Free University of Brussels. Among the many scientific organizations that elected him to membership were the National Academy of Sciences, the American Philosophical Society, and the American Association for the Advancement of Science. Erlanger was a leading member of the American Physiological Society and served as the group's president from 1926 to 1929. Within the American Physiological Society Erlanger was a founder of the axonologists, an elite group interested in neurophysiology. At his death in 1965 the country's leading newspapers carried his obituary. All agreed that Joseph Erlanger had been one of America's most distinguished physiologists.

Work

When a scientist is awarded the Nobel Prize for a specific discovery, his name remains for the rest of his life associated with a particular discovery. Although Joseph Erlanger made other contributions to physiology

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he is best remembered for the work for which he and his colleague Herbert S. Gasser were awarded the 1944 Nobel Prize in medicine and physiology. Erlanger is remembered for his work in neurophysiology. Specifically his fame rests in his discovery in the early 1920's of the different velocities of conduction in nerve fibers of different diameters. Physiologists had long suspected that electrical charges in nerves arose at the surface membrane, but they had not measured the charges. Erlanger and Gasser succeeded in accurately measuring the electrical charges by means of the use of a cathode ray ocillograph which amplified the detected current. (When Western Electric refused to sell the team a cathode ray, apparently fearing that company would be giving valuable technology away, Erlanger and Gasser built their own). Erlanger's measurement of the electrical charge of nerves made a major contribution to the understanding of the electrical nature of the human nervous system.

Erlanger's work in neurophysiology was the result of a long interest in physiology which began during his student years at Johns Hopkins when he studied with William H. Howell. At Johns Hopkins and then at the University of Wisconsin Erlanger was primarily interested in the physiology of the heart. He invented a graphic method for measuring blood pressure and studied the nature of conduction in the heart. Out of this work came his much admired 1912 Harvey lecture, "The Localization of Impulse Initiation and Conduction in the Heart." After WW I Erlanger turned his full attention to the nature of nerve conduction in general. This work led to the discovery for which he was awarded the Nobel Prize. In 1936 Erlanger and Glasser summarized their work on the electrical nature of nerve impulses in their now classic "Electrical Signs of Nervous Activity." The work remains to this day a standard in the bibliography of neurophysiology.

Nerves and the nervous system remained Erlanger's research interest for the rest of his life. He succeeded in identifying distinctions among nerve fibers according to their diameter and conduction and this work led to the fundamentals of modern neurophysiology. He then investigated the relationship of the different classes of nerves to their basic sensory and motor functions. He helped prove that electrical impulses in mylineated nerve fibers associated with both functions takes place in jumps, i.e. there is no constant electrical conduction in the nerves but rather there is a burst of electrical activity in response to stimuli (e.g. heat stimulates the nerve which sets off the electrical conduction which results in the sensation and carries the sensation to the brain).

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Today neurophysiology has advanced far beyond Erlanger's fundamental research and has entered the realm of the fantastically complex biochemistry of the electrical nature of the human nervous system. Although Erlanger's work may today seem primitive, his great achievement in neurophysiology came, in the words of a biographer, ". . . not so much in particular discoveries as in blazing the trail and showing the way."[2]

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[2]Ibid, p. 126.