

3. Space and Locations (1875-1952)

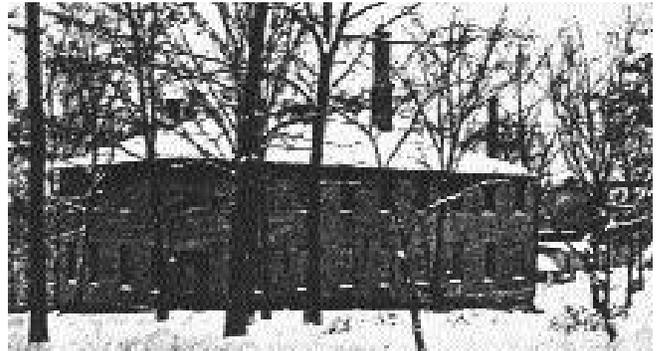
All Locations (1875-1994)

We will describe the space used by physics throughout the decades of the history of the university. There doubtless are some errors on exact dates and other details in the earlier years especially, but the information is essentially correct.

For example, some references give information as to the year a building was funded and others give the year it was constructed. We instead have chosen to show the date that the building or space was actually occupied, using the best information available.

There is no clear information about the housing of physics from 1872 to 1875. It is known that all of the early work of the new school was done in the temporary wooden structures before Old Main was ready for use in 1875.

Physics has been housed mainly in five major structures during the years 1875 to 1995.

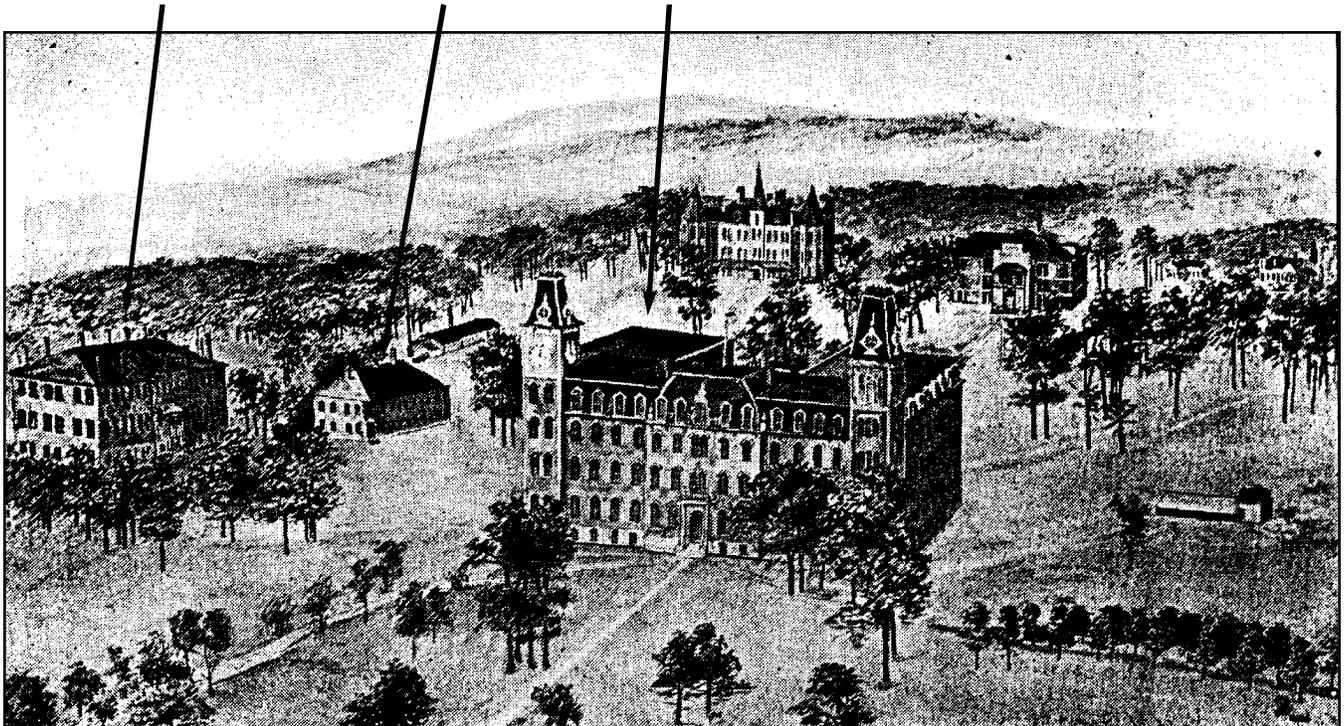


Physics was taught in Science Hall, ca 1893 to 1904. Building was used principally by chemistry. Was condemned and torn down.

Interestingly enough, three of these five major structures are shown in the beautiful campus plan published in the 1903-04 University Catalog (shown below).

These three structures where physics spent considerable time are Old Main (1875-93 and 1936-52), the brick Science Hall, shared with chemistry (1893-1904), and Engineering Hall (1904-1918).

These three structures shown in the 1903-04 campus plan where physics spent considerable time are Old Main (1875-93 and 1936-52), the brick Science Hall, shared with chemistry (1893-1904), and Engineering Hall (1904-1918).



1936-52), the brick Science Hall, shared with chemistry (1893-1904), and Engineering Hall (1904-1918). These three buildings were placed in use in 1875, 1893, and 1904-05 respectively.

Also of interest is the fact that physics actually occupied space for two distinct periods in Old Main. The first period of eighteen years was from 1875 to 1893 and the second period of sixteen years was from 1936 to 1952. It was during



Physics Hall, a two-story frame building, was used by physics from 1918 to 1936.

this second period in Old Main that the author joined the physics faculty (1942).

Thus physics was taught for a total of approximately fifty-nine years in these three buildings or for a total of almost one half of the life of the university!

The other two principal structures where physics has been housed are a two-story frame building of fairly simple design, Physics Hall, used exclusively by physics from 1918 to 1936 and the present building on Dickson Street occupied in 1952 and remodeled and enlarged in 1993-94.

While we are trying to view the "big picture," physics has already been in the present Dickson Street building forty-three years, or approximately one third of the life of the University. The remodeling and expansion of this building completed in 1994 will take us well into the twenty first century.

Thus the housing history of physics falls into six rather distinct time periods involving these five principal structures. Each of these six periods will be discussed more completely in

chronological order.

Period I: Physics in Old Main (1875-1893)

As already stated, Old Main was the principal home for physics for two distinctly different periods. The first period of physics occupancy in Old Main from 1875 to 1893 will be described as accurately as possible from information which has been handed down.

Old Main was completed in 1875 and came in for a wonderful description in the 1877 catalog but no details were given there about the housing details. The name University Hall and Old Main have been used interchangeably throughout the years. The building was officially named Old Main at its rededication in September of 1991.

William J. Waggener (See pages 2-3) of the first graduating class in 1876 states that "there was no regular apparatus for physics until the fifth year (ca 1875)."

The courses and housing details of the several departments in Old Main, including physics, were finally carefully defined in the 1889 catalog. "The main front of the building is divided into offices, recitation rooms, and laboratories. The offices of the President and the Commandant, and the rooms of the Preparatory and Musical departments are on the first floor, the Departments of Mathematics, Engineering and Physics, Ancient and Modern Language, and Pedagogics, have convenient rooms on the second floor, while the Departments of Agriculture & Chemistry and Biology and Geology are accommodated on the third floor. Above, on the fourth floor, are the commodious and well-furnished halls of the Literary societies." (1889 catalog)

Exactly the same description of the space assignments in Old Main are given in the 1891 catalog except that engineering is also using some of the space with geology on the third floor.

The laboratories in Old Main came in for a detailed description in the 1892 catalog. "In the laboratories of the University opportunities are afforded for practical instruction in chemistry, mineralogy, physics, botany, zoology, entomology, horticulture and civil, mechanical and

electrical engineering." (1892 catalog, p. 25)

"The Chemical Laboratories are well supplied with apparatus and have accommodations for twenty students in qualitative analysis and quantitative analysis, and twenty-two students in general chemistry. The appliances are of the latest design, gas and water at every desk, and all requisites for chemical work.

"The new physical laboratory will accommodate twenty-eight students. It is fitted with a small dynamo and a fair supply of general apparatus for work in practical physics."

Even though the University was small and much of the teaching must have been similar to high school or academy work, at least at first, one can hardly imagine having all of the laboratories, including the physical sciences and the biological sciences and engineering and agriculture, all in Old Main! Some agricultural work and mechanical arts work did move out to their own quarters fairly early.

Period II: Physics in Science Hall (1893-1904)

Chemistry and Physics—Two-Story Brick

Then physics moved into the two-story brick structure listed as Science Hall and used by chemistry and physics. Physics was in Science Hall from 1893 to 1904 and chemistry apparently occupied the building one more year until the chemistry building north of Old Main was completed.

"The legislature of 1889 had directed that the basement of Old Main be fitted up for the shops and appropriated \$7,000 for machinery and tools. The insurance company had already objected to keeping the shops in the main building and the people occupying the rooms above complained of the noise and fumes from the shops. Because of this the old armory had been fitted up to receive the forges and such things as caused danger from fire. The legislature of 1893 gave \$2,000 for a chemical laboratory."

Thus a two-story brick building, 50x60ft., was built for chemistry and physics in 1893 on the south side of the campus. Not only is this building included in the beautiful campus sketch displayed in the 1903-04 catalog, but an actual photograph is available from the catalog of 1902-03. A careful floor plan of the building was displayed

in the 1894 catalog.

This Science Hall is not only shown in photographs and in the 1903-04 campus drawing, but it is described in detail in several of the catalogs of that period. We will quote first from the 1897 catalog.

SCIENCE HALL—"This building, designed especially for the departments of Chemistry and Physics, is a substantial two-story brick building, 50 by 60 feet. On the first floor are the lecture rooms of the two departments, the physical laboratory and storerooms, and also the private laboratory of the professor in charge. On the second floor are the chemical laboratories, including a laboratory for general chemistry, a laboratory for qualitative analysis, and a laboratory devoted to quantitative analysis; also a storeroom for chemical supplies, a weighing room, and a hallway. The building is supplied with gas, water, and steam heat, and with modern appliances for technical work. It will accommodate about 100 students."

The 1901-02 catalog also describes the metallurgical laboratory in the building! There apparently was some further improvement and expansion and later catalogs said that the building would accommodate 150 to 200 students and its dimensions are now given as 50x90 feet!

The Science Hall is again described in the 1905-06 catalog but all of its space has been assigned to chemistry. It would appear that physics probably went into the new Engineering Hall in 1904 as it was indeed being taught by electrical engineering at that time.

A separate building was built for chemistry just north of Old Main in 1905. It is still serving the University in 1995, having housed law and psychology and geography and several other activities since 1935 when chemistry went into other new space south of Vol Walker Hall.

The Science Hall suddenly disappears from the University scene about 1905. "The first floor of Science Hall, with the exception of one lecture room, was devoted to physics. This building was condemned and taken down. The next general assembly is expected to appropriate money for a new physical laboratory." (1907-08 catalog)

Period III: Physics in Engineering Hall (1904-1918)

Physical Laboratory (1907-1909)

Physics was totally housed in engineering from 1904 to 1918 except for the use from 1907 to 1909 of a short lived small frame building built as a physical laboratory.

It was pointed out earlier that all of the laboratories, including the engineering laboratories, had been in Old Main at the earlier times. The chemistry and physics departments departed from Old Main in 1893 and chemistry was to move into its own building north of Old Main in 1905.

It was also noted above that there had been a strong desire to remove the shops etc. from Old Main as far back as 1889! Mechanical shops had been built in the 1880's and finally Engineering Hall was funded in 1903 and 1905. Engineering was to use Engineering Hall until 1927 (1927-28 catalog, p. 27) when a new engineering building was placed in operation on the southeast edge of the campus.

Physics was being taught in the electrical engineering department but space, especially for laboratory work, was difficult to find. The next catalog quotation from 1907-08 quickly summarizes the physics condition which was to continue for about a decade.

"The department has had to move about from time to time and occupy quarters as were available. In 1907 an earnest appeal was made to the legislature for a building, but without avail. The board then appropriated a small sum for a frame building as a temporary structure and the apparatus was moved into it. Much of this was old and of little practical use, though it was estimated to be worth \$5,000. In 1908 \$1,700 was expended for new apparatus, but one night in October, 1909, all of this, together with the building, went up in smoke without a dollar of insurance. The board then generously appropriated \$2,000 for new apparatus to tide over until the legislature can be induced to provide for the department."

The 1908-1909 catalog actually lists this "physics building" for the physics laboratories, a wooden frame building forty by fifty feet! Some of the recitation work was conducted in a small room in Engineering Hall. Again it is interesting to read the description of this short lived build-

ing as it appeared in the 1908-09 catalog.

PHYSICS BUILDING-"This structure is forty by fifty feet, devoted exclusively to laboratory work in Physics. The assembly room, and a smaller room in Engineering Hall are used for recitations. The laboratory is divided into two large rooms, containing at the center a space of ten by ten feet as the general store room. Solid oak tables on piers independent of the floor fulfill the conditions of required steadiness, as do also the galvanometer posts similarly built. Numerous cases contain a good supply of apparatus."

The exact location of the above physical laboratory is shown in some of scale drawings of the period to be almost exactly 60 feet south of the southeast corner of Engineering Hall. This would put it about where the west entrance of Bell Engineering is located now. The fire which destroyed the laboratory building was deemed to be of such importance that it is described in an entry in the 1909-1910 catalog!

Physics was not the only department to suffer from inadequate fire protection. Fire destroyed the shops in April of 1885 (Ref. 2, p. 74). In June of that year a plan was developed for a water system on campus to have access to the newly established Fayetteville water system. Fire again destroyed the mechanical engineering facility in the fall of 1902 (Ref. 3, p. 264).

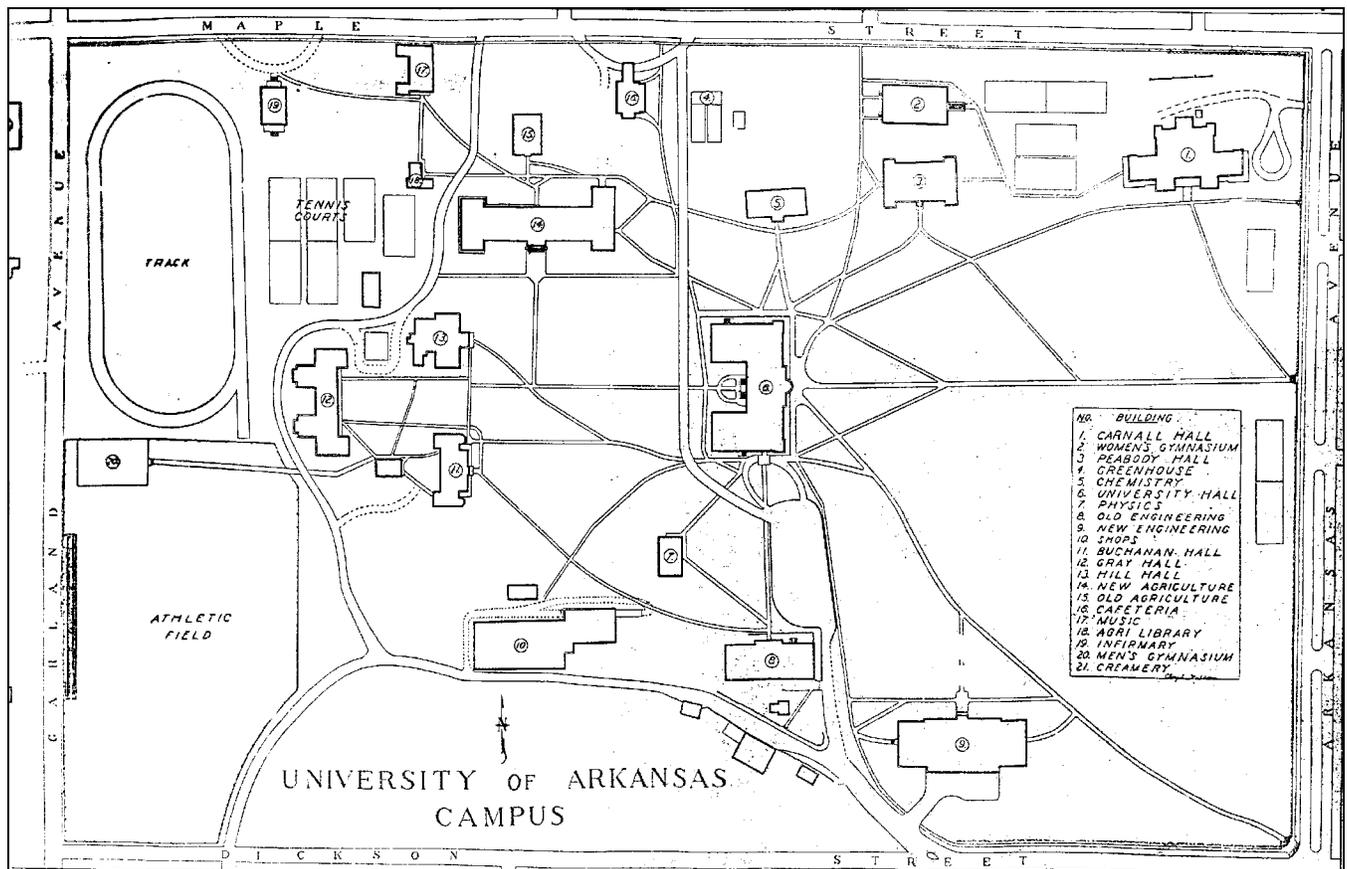
PHYSICS BUILDING-"The frame building formerly used as a physical laboratory was destroyed by fire in the fall of 1909. Temporary quarters have been provided for the department in Engineering Hall. The next legislature will be asked for an appropriation for a building and suitable equipment."

The above statement is repeated in the 1910-11 catalog. It always seemed that it was difficult to get money appropriated that would put the University on top!

The destruction of the equipment compelled the discontinuance of Physics courses for the balance of the 1909 fall term.

Thus the "physical laboratory" was to be in Engineering Hall for several years up until physics went into its own large frame building in 1918.

"Engineering Hall, erected in 1904, lies a short distance south of Old Main. The first story



Campus map from 1934-35 catalog. The “two-story” frame building used by physics is southwest of Old Main (#7).

is built of native sand stone, and the upper two stories are of brick trimmed with limestone. The building contains the offices, recitation rooms, drawing rooms, and testing laboratories of physics, and civil, electrical, and mechanical engineering departments.

“The physical laboratory is located on the first floor.. It is equipped with modern instruments in quantity sufficient for the laboratory work of the courses in physics.” (1916-17 catalog, p. 22)

This coupling of physics and engineering had several positive results. One was that the advanced course in electricity and magnetism was developed substantially under the electrical engineering auspices. Another was the fact that electrical engineering in fact initiated the development of physics into a separate department in 1907. Also of interest is the fact that Professor Giles E. Ripley of physics and Professor William B. Stelzner of electrical engineering did some early work together on radio and Professor William N. Gladson, also of electrical

engineering, worked on x-rays and is reported to have operated the first machine in Arkansas.

Period IV: Physics in Two-Story Frame Building “Physics Hall” (1918-1936)

Finally in 1918 a frame building was built for the Physics Department at the south end of the campus drive. Thus during a period of eighteen years, from 1918 until 1936, physics did indeed have its own quarters for the first time, in the form of a somewhat primitive (Ref. 3, p. 159) two-story frame building. Note the rather formal name Physics Hall applied to the simple “two-story” frame building used by physics.

The department did continue to acquire equipment for teaching elementary and intermediate courses. The 1929 and 1930 inventories include mechanical and electrical devices and some optical and sound equipment and a lantern slide projector. The photography course also had some equipment.

An aerial view of the campus printed in the 1933 Razorback shows this two-story frame



Lecture hall in frame building, Physics Hall, ca 1930. Shown are Tesla coil and galvanometer.

physics building barely discernible among the trees just northwest of the early Engineering Hall (1904) and north east of the heating plant and shops. The campus map displayed in the 1934-35 catalog clearly shows the physics building southwest of Old Main about half way between Old Main and the steam plant and engineering shops, sometimes referred to as Mechanic Hall.

George L. Harvey (B.S. 1938, M.A. 1940) writing in June, 1995, has a few choice words to say about the early buildings at the University of Arkansas.

"When I arrived at the University in 1935, the Engineering School had a fairly new building and the Chemistry Department had just moved into a new building. The Agriculture building was new or was soon finished, and there was a new library building. What about the Physics Department? It was housed in an old two story frame building, perhaps a shed, . . . It was a disgrace to the campus. The following year the Department was given some room in the basement and first floor of Old Main. It was somewhat renovated and seemed pretty nice after what we had become used to. Dr. Wesley Roberds designed the dark room which could be entered through a light tunnel without opening any doors.

"Dr. Lloyd Ham designed a sound proof room which sat in the middle of the advanced laboratory. Someone found a meter (Editors note: - actually two meters) about two feet in diameter which was mounted on the wall of the lecture

room and I built a switch board for it which made it possible to read currents and voltages over a wide range of values. The department had a small shop in the basement and I spent one summer there building equipment for first year laboratory experiments; also Dr. Roberds and I built a score board for the newly finished football stadium. The numbers were formed by neon tubes and the clock fired a shot gun shell with the pellets removed at the end of each half. The scores etc. were controlled at a board in the announcer's booth. . ."

This frame building has a very brief description in the 1927-28 catalog. "This is a two-story frame building containing ten rooms for lectures and laboratory work in physics." (1927-28 Catalog, p. 27) It is estimated from the photograph and from scale drawing of the period to have measured approximately 40x60 feet.

The following is a part of a memo in the departmental files dated 4/27/36. This paragraph gives some background information on the origin of the 1918 frame building. "The present physics quarters were designed originally as a one-story structure to be used by Professor Stelzner (EE Professor) and Dean Ripley for teaching radio and allied work. This was at a time when such work was very important in the war service. While in the process of construction in the fall of 1918 the plans were suddenly altered to provide a building of two stories with attic space. Soon after the signing of the Armistice in November 1918, the Physics Department was moved to its present quarters." April 27, 1936 memo. The writer of the above memo is unknown but it sounds very much like Dr. L. B. Ham, the second head of physics. More is quoted later on page 25.

A 1921 report of the United States Commissioner of Education, requested by the Arkansas General Assembly, was candid and not very complimentary about the University of Arkansas at that time. Among other things it criticized and it made several comments about the buildings; "cheaply constructed, mostly devoid of toilet, fire hazards as there is no central heating plant, new chemistry and physics building needed, dairy building and physics building cold in winter etc. etc.!" It has taken years to overcome that image and there is still

work to be done!

This same physics building comes in for a much more up-beat description in the 1919-1920 catalog (p. 25). "Physics Hall, built in 1917, is located southwest of Old Main. It is a two-story building containing ten rooms well arranged for lecture and laboratory work in physics. On the first floor are two laboratory rooms, a large lecture room, a storage room, and an office room. The second floor includes a large lecture room, a laboratory room, a photometric room, a workshop room, and a library. The building is equipped with gas, water, and electric light and is steam heated. The lecture room tables are wired for both alternating and direct currents, piped for water, gas, high pressure steam, high pressure air, and vacuum work. Concrete piers are provided for all delicate work in the laboratories and for the delicate balances. The equipment of apparatus is fairly complete and is of exceptional quality and of sufficient variety and duplication to permit the instruction of large sections in the laboratories."

The 1921 Commissioner's report said that the physics building was "cold". The 1919-20 catalog describes a steam heating system! Where is the truth? It is probably about half-way between these two extreme statements.

While we are presenting paradoxes, there is the following strange note in Professor Harrison Hale's 1948 History of the University of Arkansas. "The war (W.W.I) brought several



Band Building, ca 1963, as it is being razed. Reported to have been Physics Hall originally and moved south several feet to the edge of the hill at the south end of old Campus Drive.

temporary frame buildings: the Physics Building (now moved and used by the University Band), YMCA Hut, numerous barracks . . ."

Then in contrast and to create a puzzle the *Arkansas Alumnus* in the spring of 1936 reported on the new physics space. "NEW QUARTERS for the department of physics will be completed in the south wing of "Old Main" sometime around the middle of May. The physicists will occupy rooms in the basement and on the first floor of the wing. Much new equipment is being installed, including the latest electrical devices. It is expected that the old frame building which formerly housed the physics department will be torn down by Com-mencement Week." (*Arkansas Alumnus*, Spring 1936, p. 4)

The *Arkansas Alumnus* statement indicates merely that the physics building is to be torn down, not moved bodily to another location as stated by Professor Hale!

The statement that the physics building was moved those 25 or 30 yards south and established on the edge of the hill there seemed preposterous. Then in an independent telephone conversation on June 19, 1993, and with no prompting along that line, retired mathematics teacher George Holcomb volunteered the same information about the building having been moved! He should know! He was a student at the University from 1931 to 1935 and dated and married Professor Ripley's daughter. Conferences with several students of the period and letters further add credence to the hypothesis even if no final proof has been found. These former students included George Harvey, Richard Greer, Herbert Hatfield, Howard Head, George Holcomb, Paul Jameson, L. R. Kirby, Robert Leflar, Leighton Rudolph, and Franklin R. Wintker.

The "band building" did stand east of the Chi Omega theater on the side of the hill about where the north entrance of the Science Engineering Auditorium is located. It was razed in 1963 to make room for the construction of SEAUD.

One point that suggests that the frame building used by physics and the band building might have been essentially the same building is the fact that both measure exactly 40x60 feet on scale drawings of the period.



Physics faculty in Old Main physics recitation room, ca 1950. Front row: Albert Sauer, H. M. Schwartz, L. B. Ham, Williard Bennett. Back row: George D. Lingelbach. Paul C. Sharrah, Jean Camus.



Old Main

While the band building is of similar exterior wood appearance, it is certainly not identical to the physics building. It has fewer windows, for example.

Possibly the Spring 1936 Arkansas Alumnus was essentially correct. The physics building could have been partially disassembled and moved to the location of the band building there on the side of the hill and rebuilt. The outside lumber certainly looks the same and if there had been considerable rebuilding, that could account for the smaller number of windows.

But as a final point, Professor Harrison Hale,

respected head of chemistry, and author of the 1948 History of the University of Arkansas, was very much a part of the University when the physics building was supposed to have been moved. He was a member of the faculty from 1918 to 1945 and the then new chemistry building (1935) just south of Vol Walker Hall was the home of the chemistry department in 1936. This old frame building used by physics would have been fairly close to the southeast corner of the 1935 chemistry building and

was probably an eyesore by then! It is hard to see how Professor Hale could have been wrong!

Be this as it may, the frame building described above was used by physics from 1918 to 1936, when the department moved into Old Main again!

Period V: Physics in Old Main

“Second Time Around” (1936-1952)

Thus for a second time physics is to find itself housed in University Hall, by now being more familiarly called Old Main. For the sixteen year period from 1936 to 1952 physics was fairly comfortably and adequately provided for in Old Main, at least as a teaching department.

In 1936 the Department of Physics was moved into the basement and first floor space vacated by the University Library when it moved to Vol Walker Hall, the New Carnegie Library. This new space provided approximately 11000 square feet of floor space for physics and this was further expanded to include approximately 2000 more square feet in the north end of the basement of Old Main in 1949. This Old Main space was occupied by Physics from 1936 to 1952 and by Botany and Bacteriology from 1952 to 1964.

Let us hear the description of the physics space in Old Main from someone who was there



One of three elementary physics laboratories , main floor of Old Main, ca 1950, shown with George D. Lingelbach, supervisor and a student assistant. Note Young's modulus apparatus equipment on the walls.



Paul C. Sharrah makes a point, ca 1951. Ancient lantern slide used to display polarized light phenomena using Polaroid attachment.

by quoting more lines from the April 27, 1936 memo from the Department files introduced on page 23.

"In all probability the Physics Department will be moved to its new quarters (Old Main) about May 16. The work will not be completed by that time but sufficiently progressed so that the remainder of the year's work may be completed in the new quarters. . . The total new space for the Physics Department will be around eleven thousand square feet. The difference in space is much greater than what it looks to be on the



Dr. L. B. Ham and a student are shown conducting an advanced physics laboratory experiment in electrical measurements, with standard mutual

surface because of the much greater efficiency to which the new space may be used.

". . . The general plan of the new quarters consist in having all the advanced work in the southwest (basement floor) wing of the old library quarters, having a total space of about four thousand five hundred square feet. The elementary work will be housed on the first floor wing above and has a total capacity of about four thousand six hundred square feet. It is believed that the concrete floors of the basement coupled with the heavy wall of the building structure will provide vibrationless quarters for the more delicate work of the advanced laboratories.

"The elementary quarters on the first floor have one lecture room, two laboratories, a small recitation room, an apparatus room each for the laboratories and the lecture, and a general store room with elevator going to the basement. The equipment for the elementary lecture table will be modern in every respect including three independent dead lines and several 110 volt lines. The elementary lecture room is located in the southwest corner of the wing to take advantage of the sun light for certain demonstrations in light. The additional store rooms in the new elementary section of

the Physics Department will take care of elementary apparatus which now has to be housed in the main laboratory or placed anywhere that a room may be found. With the two elementary laboratories we can accommodate larger laboratory sections or have a first semester and a second semester laboratory class operating at the same time. A show case is located in the corridor of the elementary quarters. This will be used to display certain apparatus and self-operating demonstrations.

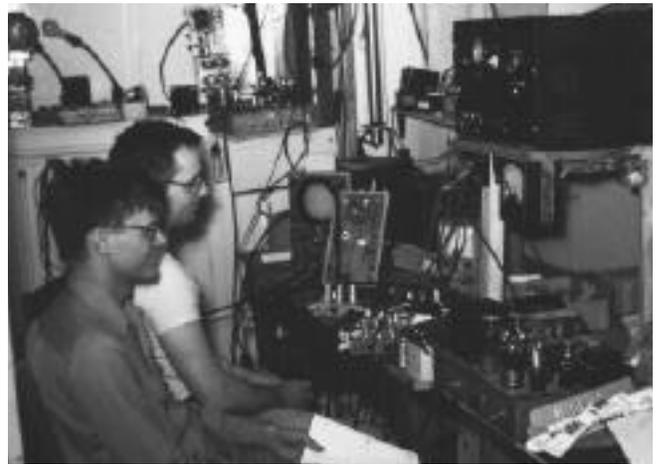
"In the advanced laboratories there are separate accommodations for electricity, optics and heat, mechanics, x-rays, photography, and sound. The photographic dark room accommodates not only students doing photographic work but is ample for concave grating work. The sound room is sound proof and reverbrationless. It is purposely placed in the center of the wing so that sound from the outside striking the building will not penetrate the room which itself is made of sound proofing material inside and outside. Because of the number of instructors at present on the staff the rooms of the



Littrow spectrograph, one of three research instruments purchased by the University in 1950. Jean Camus came to the physics department from the University of Paris and had training in spectrography. Photograph ca 1951.

advanced laboratories are made easily intercommunicating. The modern electrical features are a specialty in these laboratories.

"All sources of electricity originate in the generator room. In this room there are found a distribution panel which provides for various kinds of electrical service to the different rooms



Students C. Cameron Allen, Jr. and Albert D. Sanders in atomic physics laboratory and electronics laboratory, north end of basement of Old Main, ca 1951.

such as battery service and motor-generator service. Three direct current generators give us a range of voltages from zero up to about 600 volts. We have also one high frequency generator. The switch board will have also an auto-transformer which will allow us to obtain alternating voltage from 0 up to 110 volts. These various electrical services are distributed to the laboratories over sixteen dead lines (i. e. share service lines). There are six of these independent dead lines going into the elementary laboratories and ten to the advanced laboratories. A further convenience of the generator room is that our storage batteries will all be housed at the end of this room and will be connected with the switch board. We will therefore be able to get battery service to any room without carrying storage batteries by hand around the laborato-



Lloyd B. Ham in physics main office, south of west entrance to Old Main, ca 1949. Formerly main office of University Library.



Paul C. Sharrah in new physics office at north end of basement of Old Main, ca 1951. The Philips X-ray Diffraction unit was in adjacent laboratory.



Physics lecture room, Old Main, southwest corner, ca 1950. Speaker was for movie projector.



Philips X-ray Diffraction facility was established in 1950 in laboratory next to Sharrah's office. Graduate assistants Bill Good (left) and B. S. Garrett (right) operated the facility. (Photographs ca 1951)



ries. The batteries will be charged with a new six ampere charging unit. They may be charged also by means of motor generator units.

"The shop, advanced lecture room, one office and library will be located in the first three rooms on the east side of the corridor entering Old Main from the south. Paul Sharrah and Robert Morse and Jean Camus and Roger Antoine and H. M. Schwartz used this office space at different times. The advanced lecture room will be equipped the same as the elementary lecture room except for wall galvanometers. The location of the shop prevents the noise it makes from penetrating the elementary or advanced laboratories. The other Physics Department office is found on the first floor where the old

library office was located." From corrected first draft copy in Departmental files dated April 27, 1936 and printed as Appendix A in a Space Needs report to the physics faculty prepared by Dr. D. O. Pederson in 1982 and a copy stored in the Special Collections Division of the University Library.

Even as late as 1992 some misinformed person was going around the State telling people that the first floor of Old Main was still a dirt floor in the 1940's! Not so! The excellent advanced physics laboratory and other facilities described above, and the journalism department and part of the business office were in the basement. The fine old clock, now on display on the top floor of Old Main, was also there in the base-

ment hallway.

There was one major problem in the advanced laboratories. The steam lines for the heating ran through trenches passing along the basement hallway and into the advanced laboratory rooms. The lines were covered by metal grills and the heat in the hallways and especially the laboratories was often too much! That hamster that hid among those pipes didn't stay there very long.

An additional large physics lecture hall and an office and laboratory were added in the north end of the basement of Old Main when Journalism moved to Hill Hall in 1949 (Ref. 3, p. 220). This office was used by Sharrah and he and Schwartz initiated some interesting cosmic ray research there.

The new laboratory was used for a year as a modern physics laboratory and then became the location of the new Philips x-ray diffraction unit. Willard Bennett lectured in the new lecture room when he was not out of town. When he was out of town Sharrah frequently filled in for him. The son of the dean of engineering was in this class and became very disgusted with things!

The Physics Library housed the department's little collection of books and the magazine subscriptions. These including the *Physical Review*, the *Journal of the American Association of Physics Teachers*, the *Journal of the American Acoustical Society*, the *Reviews of Modern Physics*, and the *Review of Scientific Instruments*.



Physics library books (left) and journals (right) in Old Main, ca 1949. These were in the office in the basement southeast corner used by Schwartz and earlier by Sharrah. There were a few physics books in the Main Library in Vol Walker Hall. Fortunately, Sharrah was placed on the General Library Committee about that time.

The Old Main space contained a stock room for demonstration equipment and it was well developed and organized. L. B. Ham and Wesley M. Roberds had taken considerable interest in developing demonstrations. Dr. L. B. Ham was in regular attendance at the University of Iowa Physics Colloquium and brought back many ideas for teaching devices. Sharrah got excited about demonstrations and won first prize in 1955 at the Iowa Physics Colloquium for a demonstration electromagnetic pump he and Lingelbach had built. It had been described in a late nineteenth century article in the *Physical Review* and was being used to pump liquid metals in nuclear reactors.

It seems that Prof. Roberds made much use of the physics shop to build interesting devices. It is he who designed and built the first remotely controlled score board for the football stadium. A student, usually from engineering, was employed to fabricate demonstration devices.

Paul C. Sharrah had replaced Roberds, when he resigned to go into industry, and he became responsible for the demonstrations and Dr. Ham continued to direct the laboratory work.

The Physics Department could boast that it had two of the largest pieces of demonstration equipment around. One was a 72-foot Foucault pendulum extending from the top of the building down between the beautiful wooden stairway railings all the way to the basement. The other consisted of two 6-foot diameter concave reflectors used to focus sounds transmitted the full length of the basement hallway. These may still be housed in the Physical Plant junk pile.

It was rather convenient and interesting to be housed in Old Main in the 1940s! For one thing, almost all of the departments in the College of Arts and Sciences were in the same building. Only chemistry, geology, mathematics, and the department of psychology and philosophy were in other buildings. The museum was in Old Main and the art department was there until about 1948. The registrar's office, the business office, the graduate school office, and the typing and mimeograph service were all there. We had the advantages of a small college!

Period VI: Physics on Dickson Street (1952-present)

Finally during the period of growth starting in 1952, the department has been in its own building on Dickson street on the south side of the campus.

When the department moved here this was a rather quiet side of the campus. Some thought that physics was now too far removed from the center of the campus! The temporary W.W.II buildings used by the IST were on the west beyond a large parking lot where the heating plant is located now. All that was really visible across the street, was a large parking lot on the edge of the beautiful hill covered with grass, the ORDARK building and the engineering building. The old engineering, then ROTC, up in the brow of the hill could be seen. Also still visible was the frame building used by the band for practice, and reported previously (page 23) to have been used by physics before it was moved and presumably remodeled in 1936.

This Dickson Street building and its use and the 1992-94 remodeling and expansion are dis-

cussed more fully in Chapters 5 and 12.

Other Campus Space

Of course there were the other colleges: Business Administration in the Classroom Building (now Ozark Hall), Education in Peabody Hall, Engineering and Agriculture and Home Economics in their respective buildings. Law moved into what was the old Chemistry Building, just north of Old Main in 1935 and remained there until Waterman Hall was opened in 1953. The old Chemistry Building was used by psychology for several years and for a time in the 1980s it was used by the Academic Development Office and by the Fulbright College advising office.