**Charles Penrose Williams A.M., Ph.D. 1st Director 1871-77**

Born Oct 16, 1838 Paoli, Chester County, Pennsylvania

Son of John Williams and Elizabeth (Vogdes) Williams

Died August 24, 1897

Received public school education in Philadelphia – graduated from Central High School in

 Philadelphia as an honor student of the highest ability 1853

Graduated from Polytechnic College of Pennsylvania 1855

1857-59 taught at the Wyers Academy (West Chester Academy)

1859-63 Active Engineer in Michigan – editor of Mining Gazette

1862 wrote report describing the nature of the Copper Range of Lake Superior

1868-1870 Professor of Analytical Chemistry at the Polytechnic College

1870-71 Professor of Chemistry at Delaware State College & State Chemist of Delaware

Director MSM 1871

23 Nov 1871 MSM formally opened

1873 UM conferred upon him a Ph.D. degree

Expert in the field of metallurgy of zinc which led to his selection as director of MSM because of zinc deposits in Missouri

Dec 12, 1866 married to Miss Annie Carter Sharples – had 3 children Elizabeth (1867), John Edgar (1869), and Helen Wistar (1878). Mrs. Williams highly educated, refined, cultured, had practical good sense, and social charm. Great addition to Rolla

While at MSM he was not only director, registrar, financial aid officer, but also Professor and Chair of Analytical Chemistry and Metallurgy. After 1871, records kept by members of the faculty. A separate registrar’s office would not be established until 1923, followed by a financial aid office in 1958.

1872 – conducted all work of the School in drawing, geology, mineralogy, English, and subjects other than mathematics with the help of an assistant.

1873 Major fields of teaching were chemistry, metallurgy, mineralogy, and geology

1875 MSM operated State Geological Survey and Williams was named State Geologist as well as Professor of Geology

Wrote many reports in which he made analyses of typical Missouri ores – iron, lead, zinc, gold and various others

Wrote the first technical paper from MSM “On the Solubility of Some Forms of Phosphate of Lime” Oct. 16, 1871

Resigned June 1877 – remained as acting State Geologist until Feb 1878

1878-1897 – professional work, Pennsylvania Salt Co.

**Faculty:**

1871-72 – President Read of UM was Professor of Civil Polity and Political Economy – retired 1876

Director Williams – Professor of General and Analytical Chemistry and Metallurgy 1871-

Nelson Allen – (student chosen from UMC) Assistant Professor of Mathematics and Secretary to the Faculty 1871-74

Willaim Cooch – Assistant in Chemistry, English, and Assaying 1871-73

Col. J.W. Abert – School’s first professor of Civil Engineering, Applied Mathematics, and of Engineering Drawing – charge of military instruction 1872-77 – graduate of Princeton and West Point accompanied General Freemont on his expedition of 1845 – cartographer – fought in the Seminole, Mexican and Civil Wars

Maj George D. Emerson – Professor of Civil and Mine Engineering1873-1887 – degree from Cincinnati Law College served in the Union army as a military engineer

Capt. R. W. Douthat – Professor of English Branches 1873-1884 – called himself “Doctor” but didn’t have a college degree – adept at languages –Confederate veteran of Battle of Gettysburg – started a “Girls Course in the Arts” and also founded the short-lived Western Musical Conservatory

Van Court Yantis – Professor of Pure Mathematics 1874-78

William Ellis Glenn – Lecturer on Anatomy, Physiology and Hygiene1872-75 – Rolla physician – became a member of the Board of Curators in 1875 continued to lecture at the school without salary.

William Couch, 1871-73 Elementary chemistry and English

**Advertisement – This advertisement, modified from time to time so as to include other courses, as architecture and mechanical engineering, as well as civil and mining engineering, ran in this form throughout the Williams administration.**

Missouri School of Mines – department of the State University – three year course of study – comprehends thorough practical instruction in Engineering, Mechanics, Geology, Mineralogy, General and Analytical Chemistry, Assaying and Physics. Field practice in Geology, Mineralogy, and in the use of instruments, and laboratory work form prominent features of the instruction. Students of the full course, on satisfactory examination, will be entitled to the degree of Mining Engineer; though certificates of proficiency will be issued, on satisfactory evidence, to those pursuing studies in any of the branches of instruction. Suitable rooms in the new public school house in Rolla, have been provided, until the completion of the School of Mines building.

Curators lease half for Rolla building on recommendation of Director Williams 1875 – bought Rolla Building for $25,000. Director Williams, faculty and townspeople buy and donate large part of tract whereon Jackling Field was located (Aug 1875)

School of Mines was under the nine men who constitute the Board of Curators of the University. The School had its own individual Treasurer and an Executive Committee, established by State Law **(\*Laws of Missouri 1872, pp. 166-167),** for the School’s individual and special oversight. This committee was made up of three of the nine members of the Board of Curators, to whom are committed special administrative duties relating only to the School of Mines.**(such as employing and removing Directors and faculty members, planning buildings and equipment and so on). Robert P. Faulkner – 1st Treasurer of School of Miners, served until 1872 – then Judge Alexander Demuth until 1878 – then Cyrus H. Frost**

**Morrill Act of 1862 – “This bill proposes to establish at least one college in every state upon a sure and perpetual foundation, accessible to all, but especially to the sons of toil where all the needful science for the practical avocations of life shall be taught, where neither the higher graces of classical studies, nor that military drill our country now so greatly appreciates will be entirely ignored.” Representative Justin Morrill June 6, 1862**

**Act to Enlarge the University of State of Missouri Jan 14, 1869 – establishing a department of agriculture and mechanic arts (Rep James Rollins Boone Cty) Feb 24, 1870 – Act to establish the School of Mines provided it be located in the mineral district of southeast Missouri. Phelps and Iron Counties vied for the location – bid from Phelps County was $130,545 - $75,000 in county bonds and $38,545 in land – 130 acre tract known as Fort Wyman Hill. - building committee formed – Director Williams was hired August 1871 – Challenges for him included respect for technical studies – no school tradition, grading system or other precedents upon which to build, no college buildings or laboratories. Williams negotiated to rent part of the new Rolla Public School building to use until the campus building would be finished. MSM opened Nov 23, 1871. In 1875 the campus location was changed to its present site from Fort Wyman Hill.**

1871-72 enrollment of first semester 28 – 8 first year or regular students, three specials, and seventeen enrolled in the preparatory department.

1872-73 enrollment 75 – 17 regular, 25 special non-technical, 33 preparatory

1873-74 enrollment 107 – 24 regular, 29 special non-technical, 54 preparatory

1874-75 enrollment 101 -18 regular, 11 special, 54 special non-technical, 18 preparatory

1875-76 enrollment 71 – 21 regular, 11 special, 20 special non-technical, 19 preparatory

1876-77 enrollment 64 – 20 regular, 9 special, 22 special non-technical, 13 preparatory

Most women students were in the preparatory course – had classes with men but had to use different stairways and a room was set aside on the third floor “exclusively for the ladies” Communication between the sexes in the building or on the grounds surrounding it was not allowed. Students were governed by strict regulations impose by the Board of Curators – expected to attend church services once a week were not allowed to submit petitions or criticize the university.

**Drop in enrollment in 1875 due to Panic of 1873, failure of legislature to appropriate maintenance funds-no confidence school would not close, and making Director Williams State Geologist – he didn’t have time for school duties(recruiting).**

**Preparatory Curriculum** – had to be 16 yrs of age and complete examination in the ordinary branches of an English education. If this course was completed student was admitted to the regular college course without examination.

 Algebra to Quadratic Equations

Arithmetic – Metrical System

Rhetoric and Composition

Natural History – Botany (Structural and Systematic)

Elementary Chemistry – Elementary Physics

Physical and Industrial Geography – Lectures

**Regular Course Curriculum –** had to be at least 17 yrs of age and completed examination of subjects of the preparatory year.

First Year

Algebra – finished

Geometry

Trigonometry – begun

Mensuration

Surveying and Field Practice

General Chemistry and Chemical Philosophy

Physics

Mineralogy – Descriptive and Determinative

Crystallography

Outlines of Zoology

Analytical Chemistry

Blowpipe and Humid Qualitative Analysis

Drawing – Mechanical and Free Hand

Second Year

Trigonometry – finished

Analytical Geometry

Calculus

Surveying – Field Practice, Projections, Shades, Shadqws

Descriptive Geometry – begun

Machinery and Motors

Chemistry- General and Industrial

Metallurgy

Physics

Analytical Chemistry – Qualitative and Quantitative Humid Analysis

Geology – Physiographical, Dynamical, Historical Lithology, Phenomena of Veins and Mineral Deposits

Drawing – Free Hand and Mechanical

Third Year

Calculus

Analytical Mechanics

Applied Mechanics

Field Practice and Engineering Topography

Metallurgy and Assaying – Wet and Dry Methods

Analytical Chemistry – Quantitative and Analysis

Machinery and Motors

Mining – Methods of Explorations and Exploitation, Extraction, Crushing and Concentration, Mining Regions

Drawing – Maps, Plans and Sections of Mines

Towards the close of the third year, a course of lectures will be delivered by the President of the University on Mining Law. Throughout the course, evening public lectures on Human Physiology and Domestic Hygiene, and on special scientific studies, will be delivered.

French and German are optional studies

In accordance with the requirements of the “Agricultural Land Grant Act” provisions are made for instruction in military tactics.

**Special students were admitted to any department without entrance examination, but they were not entitled to a degree – were issued certificates of proficiency upon the satisfactory completion of any course which they might elect.**

Catalog report June 1872 listed the degree of Mining Engineering (M.E.) to be conferred upon candidates who successfully completed the three years’ work.

Annual Fee for MSM students: $20 in 1877

Tuition: forty dollars per year, payable half-yearly in advance.

**Advertisement in Rolla Herald Dec 26, 1872 – A School of Applied Science, for thorough, practical training in Civil, Mining and Mechanical Engineering, Architecture, Chemistry etc. The collegiate year is divided into two terms with no intermediate vacation. The summer semester of this institution will begin Feb 13, 1873,**

First Class of graduates (3) in June 1874 ; J,H. Gill degree in Civil Engineering, G. A. Duncan degree in Civil Engineering, J.W. Pack degree in Mine Engineering. A General Engineering (Bachelor of Philosophy Ph.B.) degree was also available – included studies in mathematics, English, drawing, physics, mechanical engineering, chemistry, geology, metallurgy, civil engineering, and modern languages. Met as alumnus in 1882

First Commencement 18 June 1874 – auditorium – 2nd floor room on the east side of the Rolla Building – 350 seats – First Commencement Ball – Creusbaur’s Hall (supper from the Crandall House) dancing

Student Affairs 1871-77

 Baseball – picnics to Meramec Springs – exhibitions or literary entertainments (Irving Society, the Shakespearean Reading Class, & the Emersonian Club(book reviews) – also joined townspeople in the Library Association – Fire Brigade – military training 1873-1877 discontinued in 1877 (no military training until fall of 1917) (Company G – 1st military org 1873 – 1st uniforms were Civil War blue jackets and gray pants