

# Chapter 1

## Brief background

### *Establishment of the School of Metallurgical Engineering*

The initial foundation for the development of a curriculum in the field of Metallurgy at Purdue University was laid by Professor John Leighton Bray (1890-1952), who joined the School of Chemical Engineering in 1923 as the second faculty member. The first faculty member and Head of the School was Harry Creighton Peffer (1873-1934). The School of Chemical Engineering was founded in June 1911, and John Bray served as its second head from 1935 to 1947. He was trained at MIT with a B.S. degree in Metallurgical Engineering in 1912 and a Ph.D. in 1930.



John L. Bray  
Founder of Metallurgy  
Program.

The School of Chemical Engineering introduced<sup>1</sup> an “option” in Metallurgy to undergraduates in 1927. A separate B.S. degree program in Metallurgical Engineering was proposed in 1936. In September 1938 the name of the School was changed to the School of Chemical and Metallurgical Engineering,<sup>2,3</sup> and a separate plan of study for the B.S.Met.E. degree was adopted. Bray offered the first graduate course, Ch.E. 108 (Advanced Metallurgy), as early as 1924. Bray was reputed to be an excellent teacher and a researcher in the field of Extractive Metallurgy. He wrote several books in the areas of ore dressing, metallurgical principles and production metallurgy. Two of his books, *Nonferrous Production Metallurgy* and *Ferrous Production Metallurgy*, published in 1941 and 1948, respectively, served as classic textbooks in the field.

The early development of the metallurgical engineering curriculum in the School of Chemical and Metallurgical Engineering has been duly recorded by John Bray himself in his 1951 book entitled *History of the School of Chemical and Metallurgical Engineering*<sup>1</sup>. The first



The Chemical and Metallurgical Engineering building (CMET),  
October 1939.

class of B.S.Met.E. graduated in 1941. By 1940 the School was housed in the Chemical and Metallurgical Engineering building (CMET), built anew across the Purdue Mall facing the School of Mechanical Engineering. Andrey A. Potter (Dean 1920-53) served as Dean of the Schools of Engineering, now called the

College of Engineering. Potter also had served as Acting President of the University during 1945-46. Randolph Norris Shreve became Head of the School of Chemical and Metallurgical Engineering in 1947, succeeding John Bray.

By 1951 the School of Chemical and Metallurgical Engineering had been divided by Shreve (Head 1947-51), into three divisions, Chemical Engineering, Metallurgical Engineering and Engineering Geology, as described by Nicholas A. Peppas in his book entitled *History of the School of Chemical Engineering of Purdue University*<sup>4</sup>. The Metallurgical Engineering division consisted of five professors, John L. Bray (B.S.Met.E. 1912, Ph.D. 1930, both from M.I.T.), who served as head of the division, George M. Enos (B.S. 1921 South Dakota School of Mines, M.S. Met.E. 1922 Carnegie Institute of Technology, Ph.D. 1925 Univ. of Cincinnati), Dillon Evers (B.S.Ch.E. 1931, M.S.Ch.E. 1932, Ph.D. Metallurgy 1936, all from the University of Iowa), Thomas J. Hughel (B.S.Met.E. 1942, Ph.D. 1951, both from Purdue University), and John T. McCormack (B.S. 1923 Univ. of Chicago, M.S. 1948, Ph.D. 1950, both from Purdue University). Edward Walter Comings succeeded Shreve as the new Head of the School in 1951. In 1953 George A. Hawkins (B.S.M.E. 1930, M.S.M.E. 1932, Ph.D. 1935, all from Purdue University) became Dean of the Schools of Engineering and served in that position until 1966.

In 1946 Frederick L. Hovde (B.S.Ch.E. 1929 University of Minnesota, B.A. and M.A. Chemistry 1932 Oxford University) had been hired as the youngest (37 years old) President of Purdue University. With his special appreciation of the academic needs in the field of Chemical and Metallurgical engineering, President Hovde was instrumental in attracting Reinhardt

Schuhmann, Jr., an Associate Professor of Metallurgy at the Massachusetts Institute of Technology, to come to Purdue as Professor of Metallurgical Engineering in 1954. R. Schuhmann, Jr. was quite well known in the area of mineral dressing through his book, *Textbook of Ore Dressing*, published in 1940.<sup>5</sup> He had also served during 1945-47 as Associate Director of the M.I.T Raw Materials Project, Manhattan District dealing with the uranium extraction from the uranium ores. He had distinguished himself in the field of education by introducing concepts of unit processes in metallurgy through his classic textbook, *Metallurgical Engineering-Vol. I*<sup>6</sup>, published in 1952. With his move to Purdue he brought with him his high academic prestige and professional expertise in the field of extractive metallurgy, thermodynamics, and high temperature processes. R. Schuhmann Jr. (B.S.Met.E. 1933 Missouri School of Mines, M.S. Met.E. 1935 Montana School of Mines, Sc.D. 1938 M.I.T) became Chairman of the Division of the Metallurgical Engineering in 1954.

Several additional faculty members also were hired between 1951 and 1958 who contributed to the growth of the Division of the Metallurgical Engineering and its future academic programs for several years, as indicated in parentheses after their names. They were: Paul W. Case ( 1932-69, B.S.T. & I.E. 1940, M.S. Ed. 1945, both from Purdue University), Paul B. Eaton, (1952-82, B.S.M.E. 1948 Univ. of Notre Dame, M.S. I.E. 1951 Purdue University), Clarence T. Marek (1937-72, B.S.M.E. 1942, M.S.M.E. 1944, both from Purdue University), Albert G. Guy (1952-60, B.S. 1938 University of Chicago, M.S. 1941 Ohio State University, D.Sc. 1944 Carnegie Institute of Technology), Norman A. Parlee (1953-62, B.S. 1935, M.S. 1937, both from Dalhousie University, Ph.D. 1939 McGill University), Richard E. Grace (1954-2000, B.S.Met.E. 1951 Purdue University, Ph.D. 1954 Carnegie Institute of Technology), Pekka Rautala (1955-60, Dipl. Eng. 1946 Finland Institute of Technology, Sc.D. 1951 MIT), and Peter G. Winchell (1958-81, A.B. 1948 University of Chicago, B.S. 1953, Ph.D. 1958, both from MIT). Among these faculty members P.W. Case and C.T. Marek were already at Purdue on the General Engineering faculty. Case had joined Purdue in 1932 and had worked as Assistant Professor of Manufacturing Processing since 1948. Marek had started his academic career in 1937 as an instructor and was now an Associate Professor.

With the approval of the Board of Trustees on May 1, 1959, the School of Chemical and Metallurgical Engineering was divided into two separate schools in the summer of 1959. The establishment of the School of Metallurgical Engineering as a separate entity on July 1, 1959

and the appointment of Professor R. Schuhmann, Jr. as its first head are duly recorded on page 2 of the Board of Trustees Minutes<sup>7</sup> dated May 1, 1959, as shown below.

#### IV. ESTABLISHMENT OF SCHOOL OF METALLURGICAL ENGINEERING AS A SEPARATE ENTITY OF THE UNIVERSITY.

President Hovde requested approval of establishment of the School of Metallurgical Engineering as a separate and distinct entity of the University. He noted that enrollment in this division of the present School of Chemical and Metallurgical Engineering is large enough and the field important enough with its new materials, new problems, etc., to justify division into two separate schools, each with its own head, staff, and academic and fiscal operations. In connection with its request, President Hovde also recommended appointment of Professor R. Schuhmann, Jr., as Head of the School of the Metallurgical Engineering, and noted that search is still under way for successor to Professor E. W. Comings (whose resignation is effective June 30, 1959) as Head of the School of Chemical Engineering.

After discussion and upon proper motion duly seconded and unanimously carried, the Board approved and confirmed separation of the present School of Chemical and Metallurgical Engineering into two units – the School of Chemical Engineering and the School of Metallurgical Engineering, with Professor R. Schuhmann, Jr., as Head of the School Metallurgical Engineering, effective July 1, 1959.

Edward W. Comings, Head of Chemical Engineering, left Purdue to take the position of Dean at the University of Delaware and was replaced by Brage Golding as the new Head. *The newly formed School of Metallurgical Engineering officially started a new chapter as an independent school on July 1, 1959 with Professor Reinhardt Schuhmann, Jr. as the founding head.* The main faculty of the School consisted of five Professors (Schuhmann, Jr., Rautala, Guy, Parlee, Marek), two Associate Professors (Case, Grace), and two Assistant Professors (Eaton, Winchell). Some of the main undergraduate and dual-level courses taught by the faculty were: Schuhmann, Jr., METE 360 (Metallurgical Thermodynamics); Rautala, METE 353 (Introduction to Structure and Diffraction); Guy, METE 303 (Physical Metallurgy and Corrosion); Parlee,

METE 522 ( Advanced Ferrous Metallurgy); Marek, METE 536 (Solidification of Castings); Case, METE 534 (Production Welding); Eaton, METE 350 (Engineering Metallurgy); Grace, METE 565 (Introduction to Metallurgical Kinetics); Winchell, METE 548 (Physical Metallurgy).

The main office of the School (Rm 108, CMET bldg.) was supervised by a very able and special lady, Helen C. Wilson Giese, who became the administrative assistant to Professor R. Schuhmann, Jr. She had very high credentials, as she had joined the Purdue clerical staff in 1931 and since 1935 had served as secretary or administrative assistant to three former heads of Chemical and Metallurgical Engineering – J. L. Bray, R. N. Shreve and E.W. Comings. Helen was aided in the Met.E. office by her able assistant, Joan Lord.



Andrey Potter          Helen Giese          Norris Shreve

## References

1. John Bray, *History of the School of Chemical and Metallurgical Engineering*, September 1951.
2. J. L. Bray's letter to A.A. Potter (Dean of Engineering), dated September 10, 1937.
3. A.A. Potter's letter to the President and the Executive Committee of Purdue University, Executive Committee Document No. 37-4, dated September 15, 1937.
4. Nicholas A. Peppas, *History of the School of Chemical Engineering of Purdue University*, 1986.
5. R.H. Richards, C.E. Locke, R. Schuhmann, Jr., *Textbook of Ore Dressing*, McGraw-Hill Book Co., 1940.
6. R. Schuhmann, Jr., *Metallurgical Engineering-Vol.1*, Addison-Wesley Press, 1952.
7. Board of Trustees Minutes, dated May 1, 1959, e-archives, Purdue University Library.