## The Clerk's Black History Series Debra DeBerry Clerk of Superior Court DeKalb County Elbert Frank Cox



(December 5, 1895 – November 28, 1969) "First Black Man to earn a Ph.D. in Mathematics"

**Elbert Frank Cox** was born on December 5, 1895, in Evansville, Indiana. His father, Johnson D. Cox, was very focused on education, having studied at both Evansville College and Indiana University. He was the principal and teacher at the Third Avenue School. His mother, Eugenia, managed the home. Although the neighborhood was racially diverse, the schools were not.

Throughout school, Elbert thrived in mathematics and physics, He was also a very talented violinist, which earned himself a music scholarship after high school. The

music scholarship would have allowed Elbert to travel to Europe to study at the Prague Conservatory of Music, but his true love was mathematics. Elbert entered Indiana University, receiving a Bachelor of Arts in Mathematics on June 13, 1917. He scored an "A" in every mathematics examination he took.





Yant, Kam, Robert, Co. Dyna, Openson, Kalanton, Weine, Inter-Instrum Row-Aller, Solinsten, Kellan, Weinheim, Kalanton, Weine, Inter-Instrum Row-Aller, Solinsten, Kellan, Elbert was appointed as a mathematics teacher at Alves Street School in Henderson, Kentucky, but early in 1918 he resigned and enlisted in the army. Although WWI was nearing the end, Elbert was sent to France, where he served until 1919. Upon his return to the United States, he earned an appointment to Shaw University in Raleigh, North Carolina. He later became chair of the Department of Natural Sciences.

In December 1921, Elbert applied for a graduate scholarship at Cornell University; one of only seven universities offering a PhD program in mathematics. Although there were some skeptics, he received the scholarship and entered the program in 1922. In 1924, Elbert was awarded an Erastus Fellowship of \$400 per year. Universities in England and Germany refused to consider his doctoral thesis but Imperial University in Sandai, Japan, accepted it.

In 1925, Elbert F. Cox was awarded his doctorate for his thesis "Polynomial solutions of difference equations", making him the first black man to achieve this level of education in mathematics. Elbert was one of only 28 PhDs bestowed in 1925. The fact that he achieved this level of education, during the Jim Crow era, made the accomplishment all the more impressive. His mentor, Lloyd Garrison Williams, an

internationally respected Canadian Mathematician, knew the significance of this achievement and wanted Elbert to have the same national and international recognition.

In September of 1925, Elbert took a position at West Virginia State College, a poorly funded college for black students. Two years later, he married Beulah P. Kaufman, the daughter of a former slave, who was an elementary school teacher. They had three children - James, Eugene, and Elbert. In the year after his marriage, Elbert was appointed associate professor of mathematics at Howard University in Washington, D.C. The University, founded in 1867, provided advanced studies for black students, but was open to students of any race, color, or creed.

During WW II, Elbert contributed to the war effort by teaching engineering science and war management from 1942 to 1944. He also headed a specialist army training program from 1943 to 1945. He was promoted to full professor at Howard University in 1947 and served twice as head of mathematics before it combined with physics in 1957. Shortly after, the mathematics and physics departments were merged and Elbert chaired the resulting combined department until 1961. Elbert retired in 1966, having supervised more master's theses than any other member of Howard's faculty.

Elbert Frank Cox died on November 28, 1969, in Washington, DC. He was 73 years old. In 1975, the Howard University Mathematics Department established the Elbert F. Cox Scholarship Fund to encourage young black undergraduates to pursue graduate level mathematic studies.

$$\begin{split} & \nabla \left( \widehat{a}_{1}^{(1)} \sum_{k}^{k} \int_{0}^{1} \int_{0}^{\infty} \int_{0}^{\infty} f_{k} \nabla_{k} \left[ e^{-k} \right] (z_{1} \psi_{1} \psi_{2}, \dots, \psi_{p-1}) \quad (13) \end{split} \\ To arrive also at this relation by solving the grades (6) for the <math>\nabla_{1}^{(1)} \left( \widehat{a}_{1}^{(1)} \right) \quad (6) \text{ and } (12) \text{ are, so to speak, response (1.5) the dist of either (6) or (12) all the <math>\nabla_{1}^{(1)} \left( \widehat{a}_{1}^{(2)} \right) \\ \text{ can be determined.} \end{split}$$

U<sub>0</sub><sup>(n)</sup>(x)=1 ; U<sub>1</sub><sup>(n)</sup>(x)=x-\frac{a}{a+b}\sum\_{j=1}^{n}w\_{a}

 $\mathbb{U}_{2}^{(n)}(x) \ast x^{2} \ast \frac{\partial a}{a \ast b} \frac{x}{1} \ast _{a} x \ast 2(\frac{a}{a \ast b})^{2} \widetilde{\chi}^{*} \ast _{a} \ast _{2} \ast \left[ 2(\frac{a}{a \ast b})^{2} \frac{-a}{a \ast b} \right]_{1}^{2} \ast _{a}^{2}$ 

 $\mathbb{U}_{3}^{(n)}(\mathbf{x}) = \mathbf{x}^{3} - \frac{3}{28} \frac{1}{2} \mathbf{w}_{e} \mathbf{x}^{2} + 6(\frac{a+b}{8})^{2} \sum_{i} \mathbf{w}_{ei} \mathbf{x}_{ei} \mathbf{x}_{ei} \left[ 6(\frac{a+b}{8})^{2} - 3(\frac{a+b}{8}) \right]$ 

"We don't see things the way they are, we them the way we are." - Elbert F. Cox