Beckham Martin was born in December of 1900 in Bowling Green, Kentucky, USA. After serving in World War I as an artillery spotter, he earned his bachelor's degree from Oakland City College (now University) and his master's degree from Indiana University, both in mathematics. He then held various teaching positions at high schools and colleges. He earned his Ph.D. in Theoretical Physics from Purdue University in 1951 after which he joined the research staff of the Owens Illinois Glass Company in Toledo, Ohio. At the closure of the research center in 1962, he taught at the University Of Dayton until he retired in 1966. He died in 1986 in Toledo, Ohio, USA.

His lifelong passion was developing what he considered to be a new geometry. Over the years he had many names for it but he finally settled on "Mutation Geometry". He had said that he conceived the fundamental ideas for his geometry sometime in the early 1930s.

Other than giving a talk before the Mathematical Association of America in 1959, he never published any of the details of his work.

Some of the features and practical applications of Mutation Geometry are:

A new geometry based on one proposition (OMEGA) and one postulate (ALPHA)

New algorithms for solving linear algebra problems

- **Matrix inversion**
- **Systems of equations**
- **Triangulation/diagonalization of matrices**
- **Calculating eigenvalues and eigenvectors**
  - **Eigenvectors can be computed independently of eigenvalues**

New algorithms for solving operations research problems

- **Linear Programming (method number 1)**
  - **No slack or artificial variables needed or used**
  - **Multiple replacement algorithm - all variables are updated each iteration**
  - **Simultaneous multivariate parametric analysis on n-1 variables**
  - **Constraint matrix sparsity is preserved**
  - **Degenerate constraint systems handled in a deterministic manner without perturbation of the constraint system**
  - **Free variables (unrestricted in sign) easily accommodated without increasing the size of the problem**
  - **The size of the constraint matrix and the number of remaining calculations shrinks as the solution proceeds toward the optimum solution**

- **Linear Programming (method number 2)**
  - **Hull transversal method (not related to the Karmarkar algorithm)**

Linear Programming (method number 3)

Does not use the concept of "convex hull"

Uses the concept of "symbolic substitution" of the objective function into the constraint system

Quadratic programming

Traveling Salesman problem

New algorithms for solving geometry problems

Characterization of the conics without rotation or translation of axis