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Julian F Fleron* (jfleron@westfield.ma.edu), **Volker Ecke**, **Christine von Renesse** and **Philip K Hotchkiss**. *Radon-Kaczmarz Puzzles: CAT Scans Meet Sudoku.*

In this talk we introduce a family of Sudoku-like puzzles which we call Radon-Kaczmarz puzzles. Solution strategies for these puzzles are directly related to the mathematics behind CAT scans and other forms of medical imaging. We describe these connections and state interesting open questions about this family of puzzles. We describe comprehensive classroom materials on these, and related, puzzles that we have developed and share our students' reactions to this material. In closing we will provide surprising connections between mathematical solution strategies for puzzles such as this, compelling history, and the development of sophisticated medical imaging. (Received September 20, 2011)