# CCSU
## DEPARTMENT OF MATHEMATICAL SCIENCES
# COLLOQUIUM

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4:30 – 5:30 PM
Maria Sanford, Room 101

# CARDINALITIES OF TOPOLOGICAL SPACES WITH REGULAR $G_\delta$-DIAGONALS


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**Abstract:** A space $X$ has a *regular $G_\delta$-diagonal* if there exists a countable family $\mathcal{U}$ of open neighborhoods of its diagonal $\Delta_X = \{(x,x): x \in X\}$ in the space $X \times X$ such that $\Delta_X = \cap \{\overline{U}: U \in \mathcal{U}\}$. If a space $X$ has a regular $G_\delta$-diagonal then there are notable restrictions on its cardinal characteristics. For example, if $X$ is a space with a regular $G_\delta$-diagonal that satisfies the countable chain condition then its cardinality does not exceed the cardinality of the real numbers.

In this talk we will present some recent results about the cardinality of spaces with regular $G_\delta$-diagonals which generalize or improve some results of Bell, Ginsburg and Woods (1978), Bella and Cammaroto (1988), and Buzyakova (2006).



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