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Caroline Turnage-Butterbaugh* (ctb@math.duke.edu). *On r -gaps between zeros of the Riemann zeta-function.* Preliminary report.

Denote by $0 < \gamma_1 \leq \gamma_2 \leq \dots$ the imaginary part of the zeros of the Riemann zeta-function on the critical line. Selberg showed that for all positive integers r there exists an absolute constant c such that $\limsup_{n \rightarrow \infty} (\gamma_{n+r} - \gamma_n) \frac{\log \gamma_n}{2\pi r} > 1 + c/\sqrt{r}$ and $\liminf_{n \rightarrow \infty} (\gamma_{n+r} - \gamma_n) / \frac{\log \gamma_n}{2\pi r} < 1 - c/\sqrt{r}$. We continue the investigation into qualitative descriptions of r -gaps between zeros of the Riemann zeta-function in this preliminary report, which is joint work with Brian Conrey. (Received September 19, 2016)