COMBINATORIAL PRINCIPLES, INDUCTION, AND BOUNDING

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I will discuss some results and open questions concerning second-order principles that live near the bottom of the first-order part of the reverse-mathematical universe, i.e. the level of $I\Sigma_1^0$, $B\Sigma_2^0$, and $I\Sigma_2^0$. This will include joint work with Lange and Shore, and more recent joint work with Davis, Hirst, Pardo, Pauly, and Yokoyama. The latter also contains a Weihrauch analysis of some principles equivalent to $I\Sigma_1^0$ and $I\Sigma_2^0$ over RCA_0.