Krieger-Nelson Prize
Prix Krieger-Nelson

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Configurations in sets big and small

When does a given set contain a copy of your favourite pattern (for example, specially arranged points on a line or a spiral, or the vertices of a polyhedron)? Does the answer depend on how thin the set is in some quantifiable sense? Problems involving identification of prescribed configurations under varying interpretations of size have been vigorously pursued both in the discrete and continuous setting, often with spectacular results that run contrary to intuition. Yet many deceptively simple questions remain open. I will survey the literature in this area, emphasizing some of the landmark results that focus on different aspects of the problem.