1096-AD-1032 **E B Saff*** (edward.b.saff@vanderbilt.edu), Center for Constructive Approximation, Department of Mathematics, Vanderbilt University, Nashville, TN 37240. *Discretizing Manifolds with Minimal Energy.*

The problem of finding configurations of points that are optimally-distributed on a set appears in a number of guises including best-packing problems, coding theory, geometrical modeling, statistical sampling, radial basis approximation and golf-ball design (i.e., where to put the dimples). This talk will focus on classical and recent results concerning geometrical properties of N-point configurations $\{x_i\}_{i=1}^N$ on a compact metric set A (with metric m) that minimize a *weighted Riesz s-energy* functional of the form

$$\sum_{i \neq j} \frac{w(x_i, x_j)}{m(x_i, x_j)^s},$$

for a given 'weight' function w on $A \times A$ and a parameter $s > 0$. By an appropriate choice of w, one can generate a quasi-uniform sequence of configurations that also has (as $N \to \infty$) a prescribed positive continuous limit distribution with respect to Hausdorff measure (surface area on 2-dimensional compact manifolds). (Received September 12, 2013)