1086-47-1712   **Jim Agler*** (`jagler@ucsd.edu`). *Nevanlinna Representations in Several Variables.*
In 1922, in a classic paper that solved the problem of the determinacy of solutions to the Stieltjes moment problem, Nevanlinna established the following characterization of the Cauchy Transforms of finite positive Borel measures on the real line.

Nevanlinna's Representation. Let $\Pi = \{z \in \mathbb{C} \mid \operatorname{Im} z > 0\}$ and let h be a complex valued function defined on Π. There exists a finite positive Borel measure μ that is supported in $\mathbb{R}$ and such that

$$h(z) = \int \frac{1}{t-z} \, d\mu$$

for all $z \in \Pi$ if and only if h is analytic on Π, $\operatorname{Im} h(z) > 0$ for all $z \in \Pi$, and

$$\liminf_{y \to \infty} y|h(iy)| < \infty.$$

We shall describe how this theorem and other closely related theorems can be generalized to several variables using operator-theoretic methods. The results are drawn from a number of papers written jointly with Ryan Tully-Doyle, John McCarthy and Nicholas Young. (Received September 24, 2012)