22. J. J. Kohn and L. Nirenberg, *Non-coercive boundary value problems*, Comm. Pure Appl. Math. **18** (1965), 443–492.

23. ——, *A pseudoconvex domain not admitting a holomorphic support function*, Math. Ann. **201** (1973), 265–268.

24. I. Lieb, *Die Cauchy-Riemannschen Differentialgleichungen auf streng pseudo-konvexen Gebieten*, Math. Ann. **190** (1970), 6–44.

25. I. Lieb and R. M. Range, *Integral representations and estimates in the theory of the $\bar\partial$-Neumann problem*, Ann. of Math. (2) **123** (1986), 265–301.

26. E. Ramirez, *Ein Divisionsproblem und Randintegraldarstellungen in der komplexen Analysis*, Math. Ann. **184** (1970), 172–187.

27. R. Remmert, *Funktionentheorie*. I, Grundwissen Mathematik no. 5, Springer-Verlag, Berlin-Heidelberg-New York, 1984.

28. S. Webster, *Biholomorphic mappings and the Bergman kernel of the diagonal*, Invent. Math. **51** (1979), 155–169.

KLAS DIEDERICH
BERGISCHE UNIVERSITÄT

BULLETIN (New Series) OF THE
AMERICAN MATHEMATICAL SOCIETY
Volume 20, Number 1, January 1989

0273-0979/89 $1.00 + $.25 per page

Lectures on Bochner-Riesz means, by Katherine Michelle Davis and Yang-Chun Chang. London Mathematical Society Lecture Notes, Vol. 114, Cambridge University Press, Cambridge, New York, Melbourne, 1987, ix + 150 pp., $22.95. ISBN 0-521-31277-9

"The theory of functions of several real variables": sounds old-fashioned, doesn't it? But look in your copy of Hewitt and Stromberg [2] or Royden [3]. You'll find plenty of analysis on the real line, and plenty of analysis on abstract topological spaces and measure spaces, and not much in between. This gap is partly a reflection of the temper of the times; but in the early 1960s when these books were written, beyond the level of calculus there really *wasn't* much in between, at least not much that was ready to be transplanted from research journals to books.

In the intervening quarter-century the situation has changed enormously, and analysis on $\mathbf{R}^n$ is now a thriving subject. Among the main lines of development are the following:

(1) Banach spaces of functions and generalized functions defined in terms of various growth or smoothness conditions: L^p spaces, Hardy spaces, Sobolev spaces and their relatives, BMO, and so forth. Closely intertwined with this are the theory of differentiability and the study of approximation of arbitrary functions by suitable types of smooth functions, such as trigonometric polynomials or harmonic functions.

(2) Singular integral operators, oscillatory integral operators, and operators defined by convolutions or Fourier multipliers, and their continuity properties with respect to the Banach spaces mentioned above. These classes of operators include pseudodifferential operators and their generalizations, as well as the Fourier transform.