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Keywords: [oxidative stress](#) [cell signaling](#)

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This group of investigators seeks to understand the signal transduction pathways regulating key proteins and genes involved in the physiological and pathophysiological control of metabolism and related intracellular processes. These activities include studies of membrane receptors and transporters for key hormones and neurotransmitters, intracellular GTP binding proteins, second messengers, protein kinases and phosphoprotein phosphatases, as well as proteins involved in the release of hormones and neurotransmitters. Several investigators also study the oxidative stress that often results from aberrant signaling in many cells and tissues, especially in the context of diabetes-related complications. Central to this research area is the concept that hyperglycemia generates oxidant stress, likely via glucose-induced superoxide generation by mitochondria. Excess superoxide escapes the mitochondria and has widespread effects of many pathways that contribute to both micro-and macro-vascular

complications of diabetes.

- [Blind, Raymond »](#)
- [Brash, Alan »»](#)
- [Breyer, Richard »](#)
- [Chazin, Walter »](#)
- [Colbran, Roger J. »](#)
- [Collins, Sheila »](#)
- [Currie, Kevin P.M. »](#)
- [Davies, Sean »](#)
- [Galli, Aurelio »](#)
- [Gurevich, Vsevolod V. »](#)
- [Haase, Volker H. »](#)
- [Hamm, Heidi E. »](#)
- [Harrison, David G. »](#)
- [Kenworthy, Anne K. »](#)
- [May, James »](#)
- [Meiler, Jens »](#)
- [Oates, John »](#)
- [Patel, Maulik »](#)
- [Roberts, L. Jackson »»](#)
- [Voziyan, Paul »»](#)
- [Wadzinski, Brian »](#)
- [Weaver, C. David »](#)

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