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- Hosuk H. Jung, Michael H. Shelby, Charles E. Newman, and Robert A. Stein
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- Robert A. Stein, James E. Anderson, and Timothy J. Wallington
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- Reed Hanson, Scott Curran, Robert Wagner, and Rolf Reitz
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- Dusan Polovina, David McKenna, Jennifer Wheeler, Jeff Sterniak, Oliver Miersch–Wiemers, Alan Mond, and Hakan Yilmaz
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