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Giaever, Nb3Sn, and Josephson

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The late 1950s and 1960s were times of remarkable progress in both the understanding and utilization of superconductivity. The majority of today's applications can be traced to key scientific advances made during a period of less than a decade, and the majority of those advances were made in the industrial research laboratories of the United States. As examples, in this talk I will mention the measurement of the specific heat and the critical current of Nb3Sn in high magnetic fields, the discovery by Giaever of tunneling between metal films and his direct observation of the superconducting energy gap, the understanding of strong coupling superconductors, leading to the development of tunneling spectroscopy of the electron-phonon pairing interaction, and the prediction by Josephson of pair tunneling.