approved (J. Sculli, M. Tannenbaum, T. White). This is one prong of Leon's two-prong follow-up of the Brookhaven dimuon experiment discussed above. The Fermilab prong stressed the highest luminosity with the highest-energy accelerator. The CERN ISR prong (CERN-Columbia-Rockefeller collaboration in I1[2]) stressed the highest collision energy, using a two-arm dielectron non-magnetic spectrometer — another of Leon's experiments that missed the J/ψ, but discovered lead-glass darkening [4] and the copious production of high-p_t neutral pions, the first evidence for a power-law-vs.-p_t distribution, and indirectly for jets.

The goal of the E70/E288 CF (subsequently joined by S, for Stony Brook) collaboration at Fermilab was to do a complete survey of all leptons produced using the highest-intensity extracted proton beam from the new Fermilab Main Ring 300 GeV (eventually upgraded to 400 GeV) accelerator. The experiment would be performed in the Fermilab Proton Center hall, which was designed explicitly for the P70 single- and di-lepton experiments.

The first stage of the experiment would study how to do a single-arm electron-spectrometer experiment well. This would be followed by single muons, dielectrons, and dimuons. The electron spectrometer consisted of 1) a target box, with a small aperture whose position could be set at angles between 50 mrad and 100 mrad, 2) a sweeping magnet to sweep out all low-momentum particles and to bend the interesting electrons (along with charged hadrons) into the 3) detectors, which were placed outside the neutral-beam envelope (the boiling sea of photons and neutrons which would have swamped any detector). The detector consisted of scintillator-hodoscope arrays to measure the electron positions and bend angle (from which the momentum could be deduced), backed up by a lead-glass array to measure the electron energy and to differentiate between electrons and hadrons.

By 1973, we started taking data with the single-arm electron spectrometer. Within six months, there were indications that direct electrons (*i.e.*, those not coming from photon conversions or Dalitz decays of the neutral pion) were observed, at a rate a few times 10^{-4} that of hadrons of equal p_t. We were thus diverted from the di-lepton phase to study these direct electrons in detail, taking data at various angles.

While we were on the direct-electron "kick," the November revolution happened. Sam Ting, in redoing Leon's Brookhaven dimuon experiment using dielectrons and the newly-available multiwire proportional chambers for much better mass resolution, discovered the J, with preliminary indications in the late summer of 1974. Unfortunately, he did not publish until the SLAC Mark I experiment found the ψ (the same particle) at the electron-positron storage ring SPEAR in early November. Hence the double simultaneous publication in PRL [5], and eventually the double Nobel Prize.

The J/ψ particle was actually expected, at least by much of the theoretical-

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[2] ISR interaction region 1