at the
November Revolution (1974)
Stan Brodsky at the November Revolution (1974)
BS (1960) PhD (1964) U Minnesota (Don Yennie)
Postdoc Columbia U (T.D Lee)
Staff SLAC 1966
Professor SLAC/Stanford 1976

Alexander Humboldt Award 1987
JJ Sakurai Prize 2007
Pomeranchuk Prize 2015
Watkins Physics Award 2017

Emiritus Faculty Academic Council SLAC
BIO

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Emiritus Faculty
SLAC

Academic Council
OUTLINE (1970's)

I. The decade that the Stan Brodsky research juggernaut was launched

(as of Jan 5, 2023) Stan's career (1964-2020)
701 Publications
20 papers with ≥500 citations

II. The middle of this decade (Nov. 1974) featured the SLAC seminar at which the standard model was born

Sam Ting $qq \rightarrow J$
Burt Richter $e^+e^- \rightarrow \psi$
Timelike Momentum in QED
Stanley J. Brodsky
Samuel C.C. Ting
Phys. Rev. 145 (1966) 1018-1022

...a simple method of computing the differential cross section (without involving large cancellations of gauge-variant quantities) is discussed.

1970 J. D. Bjorken

1971 Kinoshiba, Terazawa

1973 G. Farrar

1975 G. Farrar

1976 R. Blankenbecler, D. Sivers

1979 G. P. Lepage

1980 G. P. Lepage

1980 P. Hoyer, C. Peterson, N. Sahai

1980 S. Drell

Total of 90 publications (1970-1980)
Stan Brodsky
(A very collaborative genius)
G. de Fermiand (75)
G. P. Lepage (37)
I. F. Gunion (39)
Confronts the 1974 Revolution
personal observations 1973-1975
Stan Brodsky
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Confronts
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personal observations 1973-1975
BNL - Ting group - precision e+e- pairs in pp

SLAC - DIS scaling - SPEAR funded as a detector taking data Panofsky-Richter-Schwitters

Frascoti ADONE measuring R

CERN ISR - large p_T - neutral currents

ANL Neutral currents & polarized beams in ZGS

NAL Neutral & charged currents

Berkeley split laser beams testing Bell's inequalities Freedman & Clauser

SEA bypass luminosity a problem
Pre-revolutionary Experimental Landscape 1974

BNL - Ting group - precision $e^+e^-$ pairs in $pp$ particles

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CEA bypass luminosity a problem
The bootstrap paradigm faces challenges - 2 pomeron cut quarks come in 3-colors/3 disguises.

- Current quarks: Gell-Mann, Coleman, Adler
- Constituent quarks: Zweig, Dalitz, Lipkin
- Quark partons: Bjorben, Feynman

- Non-Abelian gauge theories (Yang-Mills)
- Higgs mechanism: ’t Hooft, Veltman
- SU(3) beta function: Gross, Wilczek, Politzer

(Search for Charm (preprint): Gagliardi, Lee, Rosner)

Rev. Mod. Phys. 47 (1975)
Pre-revolutionary theory landscape

The bootstrap paradigm faces challenges - 2 pomeron cut quarks come in 3-colors / 3 disguises

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Rev. Mod Phys 47 (1975)
The building blocks of the standard model were available in 1973. November 1974 is when the entire community started to put them in place.
The SLAC theory group collectively decided to forgo publications in favor of "informal" workshop notes and extensive communication outreach (phone...).
Notes from the SLAC Theory Workshop: Interference Effects
Angular Distributions, Widths, Radiative Corrections
J.D. Bjorken  SJ Bradsky  R. Budney  P. Cvitanovic  R. Giles  J.D. Jackson

SLAC Workshop Notes on Narrow States in Hadronic & Photonic Expts.
RJ Blankenbecker  JT Goldman  TL Neff  CT Sachrajda  D. Sivers  J. Townsend

Survey of Theoretical Speculations on the Nature of \( \Psi(3105) \) & \( \Psi(3695) \)
I. Bars  MS Chanowitz  SD Drell  RD Peccei  X.Y. Fan  SY Ting  S. Yabuki

Psychology
H. Harari

The Spectrum of Charmonium  PRL (1975)
E. Eichten  K. Gottfried  T. Kinoshita  K. Lane  T.-M. Yang (Cornell)
November Revolution (1974)

- Statistical Model \( e^+e^- \rightarrow h_0 \) (508)
  1970  J. D. Bjorken

- Q\& Mechanism \ldots
  1971  Kinoshita, Terazawa

- Scaling Laws I
  1973  G. Farrar

- Scaling Laws II
  1975  G. Farrar

- Large Transverse \ldots
  1976  R. Blankenbecler, D. Simmons

- Exclusive QCD I
  1979  G. P. Lepage

- Exclusive QCD II
  1979  G. P. Lepage

- Exclusive QCD III
  1980  G. P. Lepage

- Intrinsic Charm
  1980  P. Hoyer, C. Peterson, N. Sahai

- Anomalous Magnetic \ldots
  1980  S. Drell

- 19 Papers with Dick Blankenbecler & Jack Gunion on the foundations & phenomenology of the Constituent Interchange model (CIM)

- Combining "twist" expansion with Mandelstam analyticity in inclusive & exclusive hard scattering processes

Total of 90 publications (1970-1980)
Perturbative QCD and the assembly of the Standard Model.
Scaling Laws II
1975 G. Farrar

Large Transverse ...
1976 R Blankenbecker, D. Swans

Exclusive QCD I
1979 G. P. Lepage

Exclusive QCD II
1979 G. P. Lepage

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Intrinsic Charm ...
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