

Curriculum Vitae

Carlos E. M. Wagner

July, 2007

1 Current Position

Head of the Theory Group,
High Energy Physics Division,
Argonne National Laboratory.

Professor,
Enrico Fermi Institute,
University of Chicago.

2 Biographical Data

Name: Carlos E. M. Wagner

Sex: Male

Marital Status: Married

Citizenship: Argentine and German

Permanent Residence: U.S.A. (Green Card).

Address:

High Energy Physics Division,
Argonne National Laboratory,
9700 South Cass Ave, Argonne, IL 60439-4803;

Enrico Fermi Institute,
University of Chicago,
5640 Ellis, Chicago, IL 60637.

Tel: (630) 252 - 3759 (Argonne)

(773) 702 - 0767 (Univ. of Chicago)

Fax: (630) 252 - 5047

E-mail: cwagner@hep.anl.gov,

cwagner@theory.uchicago.edu

3 Education

Licenciatura en Fisica (Diploma in Physics): **Dec. 1985**, Instituto Balseiro, Universidad Nacional de Cuyo, S. C. de Bariloche, Argentina.

Graduate Studies (High Energy Physics): **Feb. 1986 - Sep. 1987**, Centro Atomico Bariloche, S.C. de Bariloche, Argentina and **Oct. 1987 - July 1989**, DESY, Hamburg, Fed. Rep. Germany.

Ph. D. (High Energy Physics): **July 1989**, University of Hamburg, Hamburg, Fed. Rep. of Germany.

Language Skill: English, French, German and Spanish.

4 Awards

1982 - 1985: Undergraduate Scholarship - Centro Atomico Bariloche, Argentina.

1986 - 1987: Graduate Scholarship - Consejo Nacional de Investigacion, Argentina.

1987 - 1989: Graduate Scholarship - DESY, Hamburg, Fed. Rep. of Germany.

1993 - 1995 John Stewart Bell Fellowship - CERN, Geneva, Switzerland.

1995 - 1996 European Community Fellowship - CERN, Geneva, Switzerland.

5 Research Activities

Jan. 1986 - Sept. 1987: Research Assistant in Particle Theory, advisor Prof. Luis Masperi, at the Centro Atomico Bariloche, S.C. de Bariloche, Argentina.

Oct. 1987 - July 1989: Research Assistant in Particle Theory, advisor Prof. Istvan Montvay, at the DESY Theory Group, Fed. Rep. of Germany.

Sep. 1989 - Aug. 1991: Postdoctoral Research Associate at the Physics Department, Purdue University, West Lafayette IN, U. S. A. (J1 Visa).

Sep. 1991 - Sep. 1993: Postdoctoral Research Associate at the Max Planck Institut für Physik - Werner Heisenberg Institut, München, Fed. Rep. of Germany.

Oct. 1993 - Mar. 1996: Postdoctoral Research Associate at CERN, Geneva, Switzerland.

Mar. 1996 - May 1999: Staff Member at CERN, Geneva, Switzerland.

May 1999 - Present: Physicist at Argonne National Laboratory, Argonne, IL, U.S.A.

May 1999 - March 2005: Part-time Associate Professor of Physics at the Enrico Fermi Institute, University of Chicago, Chicago, IL, U.S.A.

March 2005 - Present: Professor of Physics at the Enrico Fermi Institute, University of Chicago, Chicago, IL, U.S.A.

August 2006 - Present: Senior Member, Kavli Institute for Cosmological Physics, University of Chicago, Chicago, IL, U.S.A.

6 Teaching Activities

Fall 1981- Spring 1982: Teaching Assistantship at Instituto Tecnológico Buenos Aires, Buenos Aires, Argentina.

Fall 1986 - Fall 1987: Lecturer for courses on Quantum Mechanics and Electrodynamics at University of Comahue, Bariloche, Argentina.

October 1993: Lecturer at the Karlsruhe Autumn School, Sand, Fed. Rep. of Germany, for a course on Introduction to Supersymmetry

Mar. 1996 Lecturer on the International School on Fundamental Physics, Gandia, Spain, for a course on Supersymmetric Phenomenology.

June 1998 Lecturer at the Advanced School on Cosmology and Particle Physics, Peñíscola, Spain, for lectures on Baryogenesis and Phase Transitions.

August 1998 Lecturer at the CERN Summer School, CERN, Switzerland, for lectures on Physics Beyond the Standard Model (to take place on August 7,10 and 11).

January–March 2000 Lecturer at the University of Chicago, for a graduate course on Supersymmetry.

January–March 2001 Lecturer at the University of Chicago, for a graduate course on Supersymmetry.

March–May 2002 Lecturer at the University of Chicago, for a graduate course on Advanced Classical Electrodynamics.

June 2002 Lecturer at TASI 2002, for a course on the Introduction to Supersymmetry.

April 2003–June 2003 Lecturer at the University of Chicago, for a graduate course on Advanced Classical Electrodynamics.

April 2004–June 2004 Lecturer at the University of Chicago, for a graduate course on Introduction to Cosmology.

July 2004 Lecturer at the VI Giambiagi School on Particle Physics at the University of Buenos Aires, Buenos Aires, on Introduction to Supersymmetry.

March 2005–June 2005 Lecturer at the University of Chicago, for a graduate course on Advanced Classical Electrodynamics.

July 2005 Lecturer at the Les Houches School on Particle Physics, Les Houches, France, on Introduction to Supersymmetry.

March 2006–June 2006 Lecturer at the University of Chicago, for a graduate course on Advanced Quantum Field Theory.

September 2006–December 2006 Lecturer at the University of Chicago, for a graduate course on Supersymmetry

October 2006 Lecturer at the PASI 2006 School in Puerto Vallarta, Mexico, on Introduction to Supersymmetry.

February 2007 Lecturer at the CERN Latinamerican School on Particle Physics, in Renaca, Chile, on Beyond the Standard Model Physics

7 Supervision of Graduate Students

Advisor of **David E. Morrissey**, a graduate student at the University of Chicago and an Argonne National Laboratory graduate student fellow.

Graduation date: August 2005.

Present position: University of Michigan, Ann Arbor.

Advisor of **Arjun Menon**, a graduate student at the University of Chicago.

Graduation date: June 2007.

Position after September, 2007: University of Michigan, Ann Arbor.

Advisor of Anibal Medina, a graduate student at the University of Chicago and an Argonne National Laboratory graduate student fellow.

Expected graduation date: August 2008.

Advisor of Nausheen Shah, a graduate student at the University of Chicago.

Expected graduation date: August 2008.

Co-Advisor, with Sean Carroll, of **Jing Shu**, a graduate student at the University of Chicago.

Expected graduation date: August 2008.

8 Participation in Schools and Workshops

July 1986 - 3rd Argentine Symposium of Particles and Field Theory, Centro Atomico Bariloche, S.C. de Bariloche, Argentina.

Aug. 1986 - French Latin-American Colloquium of Theoretical Physics, Buenos Aires, Argentina.

Oct. 1986 - Argentine Physical Society Meeting, La Cumbre, Cordoba, Argentina.

Feb. 1987 - Jorge Andres Swieca Summer School of Particles and Field Theory, Sao Paulo, Brazil.

July. 1987 - Latin-American School of Physics, La Plata, Argentina.

Oct. 1987 - DESY Theory Workshop, DESY, Hamburg, Fed. Rep. of Germany.

Oct. 1988 - DESY Theory Workshop, DESY, Hamburg, Fed. Rep. of Germany.

Oct. 1990 - "Beyond the Standard Model II", University of Oklahoma, U.S.A.

March 1991 - PASCOS 91, Northeastern Univ., Boston MA, U.S.A.

July 1991 - Aspen Summer Programm, Aspen CO, U.S.A.

Aug. 1991 - Santa Fe Workshop, "Physics of the Standard Model and Beyond", Santa Fe NM, U.S.A.

Aug. 1991 - The Vancouver Meeting: Particles and Fields'91, Vancouver, B.C., Canada.

Jan 1992 - V Argentine Symposium of Particles and Field Theory, Centro Atomico Bariloche, S.C. de Bariloche, Argentina.

July 1992 - Aspen Summer Program: "Workshop on Neutrino Physics", Aspen CO, U.S.A.

Sep.-Oct. 1992 - INFN ELOISATRON Project 23rd Workshop: "Properties of SUSY Particles", Erice, Italy.

March 1993 - Rencontres de Moriond on "Electroweak Interactions and Unified Theories", Les Arcs, France.

May 1993 - XVI Kazimierz Meeting on Particle Physics: "New Physics with New Experiments", Kazimierz, Poland.

July 1993 - Institut d'Ete de Physique des Particules, Orsay and Saclay, France.

July 1993 - International Europhysics Conference on High Energy Physics, Marseille, France.

February 1994 - Workshop on Yukawa Couplings and the Origin of Mass, University of Florida, Gainesville, U.S.A.

May 1994 - SUSY 94 Workshop, Ann Arbor, MI, U.S.A.

August 1994 - Aspen Summer Program: "Workshop on Supersymmetry from the TeV to the Planck scale", Aspen CO, U.S.A.

November-December 1994 - LEP2 Workshop, "Higgs Working Group", CERN, Geneva,

Switzerland.

February 1995 - 3rd Meeting of the LEP2 Higgs Working Group, Munich, Germany.

March 1995 -XXXth Rencontres de Moriond on “Electroweak Interactions and Unified Theories”, Les Arcs, France.

April 1995 - European Community Network Meeting on Electroweak Interactions, Warsaw, Poland.

May 1995 - 4th Meeting of the Higgs Working Group of the LEP2 Workshop, CERN, Geneva, Switzerland **and** SUSY-95: International Workshop on Supersymmetry and Unification of Fundamental Interactions, Palaiseau, France.

June 1995 - 5th Meeting of the Higgs Working Group of the LEP2 Workshop, **and** - 2nd General Meeting of the LEP2 Workshop, CERN, Geneva, Switzerland.

July 1995 - 6th Meeting of the Higgs Working Group of the LEP2 Workshop, Orsay, France

July–Aug. 1995 International Europhysics Conference on High Energy Physics, Brussels, Belgium.

Sept. 1995 Summer Institute on “Signals of Unified Theories”, Laboratori Nazionali del Gran Sasso, Italy **and** - 7th Meeting of the Higgs Working Group of the LEP2 Workshop, CERN, Geneva, Switzerland.

Sept. 1995 5th Meeting of the New Particles Working Group of the LEP2 Workshop, CERN, Geneva.

Nov. 1995 6th Meeting of the New Particles Working Group of the LEP2 Workshop, CERN, Geneva.

May 1996 SUSY 96, College Park, Maryland, U.S.A.

July 1996 Workshop on Supersymmetry Phenomenology, Aspen, Colorado, U.S.A.

October 1996 LHC Workshop, CERN, Geneva, Switzerland

March 1997 Phenomenology Workshop, Madison, Wisconsin, U.S.A.

April 1997 Third Warsaw Conference “Physics from the Planck scale to the weak scale”, Warsaw, Poland

May 1997 International Conference on Supersymmetry, SUSY97, Philadelphia, Pennsylvania, U.S.A.

August 1997 Aspen Workshop, “New Physics at LEP and the Tevatron”, Aspen, Colorado, U.S.A.

November 1997 Workshop on Physics at muon colliders, Fermilab, Batavia, U.S.A.

November 1997 Triangle Meeting on Particle Physics, Viena, Austria.

March 1998 First Organizational Meeting of the Higgs Working Group for the SUSY/HIGGS Tevatron Run II Workshop, Fermilab, Batavia, IL, U.S.A.

May 1998 First General Meeting of the SUSY/HIGGS Tevatron Run II Workshop, Fermi-

lab, Batavia, IL, U.S.A.

May 1998 First European Meeting “From the Weak Scale to the Planck Scale”, Kazimierz, Poland.

June 1998 Meeting of the LEP Higgs Working Group, CERN, Geneva, Switzerland.

July 1998 SUSY 98, Oxford Univ., Oxford, England.

October 1998 DESY Theory Workshop, DESY, Hamburg, Germany.

November 1998 Final General Meeting of the SUSY/HIGGS Tevatron Run II Workshop, Fermilab, Batavia, IL, U.S.A.

March 1999. IFT Workshop on Higgs and Supersymmetry: Search and Discovery, Gainesville, Florida, U.S.A.

March 1999 Recontres de Moriond, Electroweak Session, Les Arcs, France.

March 1999 Meeting on Supersymmetry Phenomenology, Lyon, France.

April 1999 *Second European Meeting* From the Planck Scale to the Electroweak Scale, Bad Honnef, Germany.

June 1999 SUSY99, Fermilab, Batavia, IL. U.S.A.

July 1999 Workshop on Phenomenology of Supersymmetry and Superbranes, Aspen, CO, U.S.A.

October 1999 Workshop on New Theoretical Developments for Higgs Searches at LEP, CERN, Geneva, Switzerland.

December 1999 Pascos Conference, Lake Tahoe, CA, U.S.A.

January 2000 Aspen Winter Conference, Aspen, CO, U.S.A.

March 2000 Recontres de Moriond, QCD session, Les Arcs, France.

May 2000 Theory Institute on Supersymmetry and Higgs Physics, Argonne National Laboratory, Argonne, IL, U.S.A.

July 2000 SUSY 2000, CERN, Geneva, Switzerland

August 2000 DPF Meeting, Columbus, OH, U.S.A.

August 2000 Escuela de Fisica de Particulas y Campos, Metepec, Mexico.

August 2000 Aspen Workshop on New Physics at the Weak Scale and Beyond, Aspen, CO, U.S.A.

September 2000 RadCor Conference, Carmel, CA, U.S.A.

February 2001 Workshop on Physics in Extra Dimensions, Warsaw, Poland, February 14–17, 2001.

March 2001 Workshop on Physics at Photon Colliders, Fermilab, Batavia, IL, March 14–17, 2001.

March 2001 Higgs and Supersymmetry, Orsay, France, March 19–23, 2001.

April 2001 Workshop on Cosmology in Supersymmetry and String Theory, Heidelberg,

Germany, April 4–7, 2001.

May 2001 Pheno 2001 Conference, Madison, Wisconsin, U.S.A.

May 2001 Workshop on Recent Developments on Higgs Physics, Fermilab, IL, U.S.A.

June 2001 Theory Institute on Supersymmetry and Extra Dimensions, Argonne National Laboratory, June 18–30, 2001.

January 2002 Workshop on Physics at Linear Colliders, Chicago, January 2002.

January 2002 WIN02 Conference, Christchurch, New Zealand, January 21–27, 2002.

February 2002 Aspen Winter Conference, Aspen, CO, February 3–9, 2002.

May 2002 Miniworkshop on Physics at the Tevatron, Fermilab, May 16, 2002.

TASI 2002 TASI Lecture Series, Boulder, CO, June 4–10, 2002.

June 2002 SUSY 2002 Conference, DESY, Hamburg, June 17–23, 2002.

July 2002 Aspen Summer Conference, Aspen, CO, July 15–August 8, 2002.

September 2002 Theory Institute on Higgs Physics, Supersymmetry and Extra Dimensions, Argonne National Laboratory, September 9–13, 2002.

September 2002 Cosmo02 Conference, Chicago, IL, September 18–22, 2002.

October 2002 Neutrino Physics Workshop, Fermilab, Batavia, IL, October 17–20, 2002.

December 2002 Workshop on physics at the LHC and at linear colliders, Fermilab, Batavia, IL, December 12–13, 2002.

January 2003 Aspen Winter Conference, Aspen, CO, January 19–25, 2003.

March 2003 LDRD Symposium, Argonne National Laboratory, March 14, 2003.

March 2003 Conference on the 20 years of Supergravity, March 17–20, 2003.

April 2003 Theory Meeting, Argonne National Laboratory, April 14, 2003.

June 2003 Supersymmetry 2003, Tucson, Arizona, June 5–9, 2003.

June 2003 Workshop on Baryogenesis, Michigan, Ann Arbor, June 10–27, 2003.

July 2003 Aspen Summer Conference, Aspen, CO, July 5–20, 2003.

August 2003 Lepton Photon Conference, Fermilab, Batavia, IL, August 11–16, 2003.

October 2003 Workshop on Brane Dynamics, Argonne National Laboratory, October 12–17, 2003.

February 2004 Aspen Winter Conference, Aspen, CO, February 1–7 2004.

March 2004 EFI Mini-Symposium on Tevatron Physics, Chicago, IL, March 5, 2004

March 2004 Moriond Winter Conference, La Thuile, Italy, March 21–28, 2004

May 2004 APS April 2004 Meeting, Denver, CO, May 1–4, 2004

May 2004 Argonne Theory Workshop on Higgs, Supersymmetry and Extra Dimensions, Argonne National Laboratory, May 24–28, 2004

June 2004 International Workshop on Supersymmetry 2004, Tsukuba, Japan, June 17–23, 2004.

July 2004 Fifth Latinamerican Symposium on High Energy Physics, Lima, Peru, July 12–16, 2004.

July 2004 VI Giambiagi School on Particle Physics, University of Buenos Aires, Buenos Aires, July 2004.

August 2004 SLAC Summer Institute, SLAC, CA, August 2004.

August 2004 Pascos 2004 Conference, Northeastern University, Boston, August 16-22, 2004.

November 2004 Workshop on Z' physics, Northwestern University, Evanston, IL, November 16, 2004.

December 2004 Miami 2004 Conference on Particle Physics, Key Biscane and Coral Gables, Florida, December 15–19, 2004.

February 2005 Aspen Winter Conference, Aspen, CO, February 13–19, 2005.

March 2005 Linear Collider Workshop, Stanford, March 18–22, 2005.

March 2005 Workshop on Non-Standard Higgs Bosons and CP-Violation, SLAC, March 24–25, 2005.

April 2005 Top Quark Symposium, Michigan, Ann Arbor, April 6–8, 2005.

May 2005 Argonne Theory Institute on Supersymmetry, Higgs Physics and Extra Dimensions, Argonne, IL, May 9–13, 2005.

June 2005 Kaon 2005 Conference, Northwestern University, Evanston, IL, June 13–17, 2005.

July 2005 Pre-SUSY2005 Meeting and SUSY2005 Conference, Durham, England, July 10–July 22, 2005.

August 2005 Aspen Workshop on Particle Physics, Aspen, CO, August 8–27, 2005.

August 2005 Snowmass ILC Workshop, Snowmass, CO, August 14–27, 2005.

September 2005 Bardeen Symposium, Fermilab, Batavia, IL, September 23–24, 2005.

October 2005 International Conference on Flavor Physics, National Central University, Taiwan, October 4–10, 2005.

October 2005 TeV4LHC Workshop, Fermilab, Batavia, IL, October 20–22, 2005.

March 2006 Monte Carlo Tools for Beyond the Standard Model Physics, Fermilab, March 20–21, 2006.

May 2006 CIPANP 2006, Rio Mar Beach, Puerto Rico, May 31–June 3, 2006.

June 2006 SUSY 06, 14th International Conference on Supersymmetry, Irvine, California, June 12–17, 2006.

July 2006 Santa Fe Workshop on “Particle Theory and the LHC”, July 23–29, 2006.

August 2006 Aspen Workshop on “Particle Theory in Anticipation of the LHC “, Aspen, CO, August 1–28, 2006.

September 2006 Pascos 2006, Columbus, OH, September 10–15, 2006.

October 2006 PASI 2006 School on Cosmology and Particle Physics, Puerto Vallarta, Mexico, October 23–November 1, 2006.

January 2007 Aspen Winter Conference, Aspen, CO, January 8–12, 2007.

January 2007 Gordy Kane Fest, Univ. of Michigan, Ann Arbor, January 19, 2007.

February 2007 CERN School on Particle Physics, Renaca, Chile, February 26–March 1, 2002

March 2007 Moriond Conference, Electroweak Session, La Thuile, Italy, March 12–16, 2007.

April 2007 Workshop on the “Early Phase of the LHC and the ILC”, Fermilab, April 12–14, 2007

May 2007 Workshop on the “Hunt for Dark Matter”, Fermilab, May 10–12, 2007

June 2007 Argonne/University of Chicago Joint Collier Institute, Argonne, IL, June 4–5, 2007.

June 2007 Planck 2007 Conference, Warsaw, Poland, June 9–13, 2007

June 2007 ICTP School on Particle Physics, Trieste, Italy, June 20, 2007

June 2007 Beyond the Standard Model at the Dawn of the LHC era, Budapest, Hungary, June 25–29, 2007.

July 2007 Workshop on the LHC Cosmology Interplay, CERN, Switzerland, July 1–21, 2007.

9 Invited Talks

“Phenomenology of Low Energy Supergravity”:

3rd Argentine Symposium of Particles and Field Theory, Centro Atomico Bariloche, S.C. de Bariloche, Argentina, Aug. 1986.

“Effective Action Computation in Two Dimensional Gauge Theories”:

La Plata University, Argentina, Mar. 1987.

“Non Perturbative Aspects of Chiral Fermion Models”:

Purdue University, West Lafayette IN, U.S.A., October 1989.

“The Phase Structure of QED_3 with Fermion Self Couplings”

FERMILAB, Batavia IL, U.S.A., September 1990.

“Scaling Properties of QED_3 with Fermion Self Couplings”

in “Beyond the Standard Model II”, Norman OK, U.S.A., October 1990.

“The Minimal Supersymmetric Standard Model with Dynamical Electroweak

Symmetry Breaking”

Montreal Univ., Montreal, Quebec, Canada, Feb. 1991 and

Univ. of Michigan, Ann Arbor MI, U.S.A., Feb. 1991.

Univ. of Pittsburgh, Pittsburgh PA, U.S.A., April 1991.

“The Top Condensate Model and Supersymmetry”

Santa Fe Workshop, “Physics of the Standard Model and Beyond”, Santa Fe NM, U.S.A., Aug. 1991

“Dynamical Electroweak Symmetry Breaking, Supersymmetry and the Top Quark Mass”

The Vancouver Meeting: Particles and Fields’91, Vancouver, B.C., Canada, Aug. 1991

“The Standard Model with Dynamical Electroweak Symmetry Breaking”

Contribution to a Series of Seminars held at the Max-Planck-Institut für Physik, Munich, Germany, Nov. 1991, and

V Argentine Symposium of Particles and Field Theory, Centro Atomico Bariloche, S.C. de Bariloche, Argentina, Jan 1992.

“Top Condensate Models and Supersymmetric Phenomenology”

Physics Department, Technischen Universität München, Theoretische Physik, Garching, Germany, Nov. 1991, and

Erice Workshop, “Properties of Supersymmetric Particles”, Erice, Italy, Oct.-Nov. 1992.

“On the Finite Temperature Effective Potential in Scalar QED with N Flavors”

Brookhaven National Laboratory (BNL), Upton NY, U.S.A., August 1992.

“Phenomenological Implications of Light Gluinos”

XVI Kazimierz Meeting on Particle Physics: “New Physics with New Experiments”, Kasimierz, Poland, May 1993.

“Radiative Electroweak Symmetry Breaking and Coupling Unification”

Institut d’Ete de Physique des Particules, Orsay and Saclay, France, July 1993.

“On the Infrared Fixed Point for the Top Quark Mass”

CERN, Switzerland, November 1993.

“Electroweak Symmetry Breaking and the Top Quark Mass in Minimal Supersymmetric SO(10) Unification”

IFT Workshop on Yukawa Couplings and the Origin of Mass, University of Florida, Gainesville, February 1994.

“Phenomenological Constraints on Bottom - Top Yukawa Coupling Unification”

Univ. Autonoma de Barcelona, March 1994.

“Phenomenological Implications of the Infrared Fixed Point of the Top Quark Mass”

CERN, Switzerland, March 1994.

SUSY 94 Workshop, Ann Arbor, Michigan, May 1994.

“The Infrared Fixed Point Solution for the Top Quark Mass and its Experimental Signatures ”

Aspen Workshop on Supersymmetry from the TeV to the Planck Scale, Aspen CO, U.S.A., August 1994.

“Supersymmetry: From Theory to Experiment”, Williams and Mary University, Williamsburgh VA, U.S.A., September 1994.

“Phenomenological Implications of Minimal SO(10) Unification ”

Ohio State University, Columbus OH, U.S.A., November 1994.

“On the Higgs Mass in the MSSM and Yukawa Coupling Unification”

3rd Meeting of the Higgs Working Group of the LEP2 Workshop, Munich, Germany, March 1995.

“LEP2 Higgs Searches and Large Values of $\tan\beta$ in the MSSM”

XXXth Rencontres de Moriond on “Electroweak Interactions and Unified Theories”, Les Arcs, France, March 1995.

“LEP2 Physics and Minimal Supersymmetric SO(10) Unification”

European Community Network Meeting on Electroweak Interactions, Warsaw, Poland, April 1995.

“Physics at LEP and Yukawa Coupling Unification”

SUSY-95: International Workshop on Supersymmetry and Unification of Fundamental Interactions, Palaiseau, France, June 1995.

“Properties of the MSSM Higgs Mass Spectrum at Large Values of $\tan\beta$ ”

6th Meeting of the Higgs Working Group of the LEP2 Workshop, Orsay, France, July 1995.

“Effective Potential Methods and the Higgs Spectrum”

7th Meeting of the Higgs Working Group of the LEP2 Workshop, CERN, September 1995.

“Precision Measurements, SUSY Spectrum and Yukawa Coupling Unification

5th Meeting of the New Particles Working Group of the LEP2 Workshop, CERN, Geneva, September 1995.

“Light Higgsino Detection at LEP1.5”

6th Meeting of the New Particles Working Group of the LEP2 Workshop, CERN, Geneva, November 1995.

“Phenomenology of Low Energy Supersymmetry”

Ecole Polytechnique, Paris, France, January 1996.

“On the Electroweak Phase Transition”

SUSY96, College Park, Maryland, U.S.A., May 1996.

“Introduction to Supersymmetric Phenomenology”

CERN, Geneva, October 1996.

“Higgs and Supersymmetric Particle Searches at LEP2”, and

“Light Stop and the Electroweak Phase Transition”

Nordita, Copenhagen, November 1996.

“Electroweak Baryogenesis and Higgs Physics”

University of Chicago, Chicago, U.S.A., February 1997,

Third Warsaw Workshop “Physics from the Planck Scale to the Weak Scale”, Warsaw, Poland, April 1997,

Fermi National Laboratory, Batavia IL, U.S.A., May 1997.

“Grand Unification and Supersymmetry”

International Conference on Supersymmetry, SUSY97, Philadelphia, Pennsylvania, U.S.A., May 1997.

“Electroweak Baryogenesis and Higgs and Stop Searches at LEP and the Tevatron”

DESY Zeuthen, Berlin, Germany, June 1997;

Argonne National Laboratory, Chicago, U.S.A., September 1997.

Triangle Meeting of Particle Physics, Viena, Austria, November 1997.

University of California, Davis, CA, U.S.A., February 1998.

“R-Parity Violation and the high Q^2 HERA Events”

Workshop on New Physics at LEP and the Tevatron, Aspen, Colorado, U.S.A., August 1997.

“Phenomenology of Supersymmetry”

Workshop on Physics at muon Colliders, Fermilab, Batavia, U.S.A., November 1997.

“Phenomenological Aspects of Supersymmetric Theories” University of Munich, Munich, Germany, February 1998.

“Fermion Masses and Minimal SO(10) Unification”

University of California, Davis, CA, U.S.A., February 1998.

“Introduction to Supersymmetry Phenomenology

Northern Illinois University, IL, USA, March 1998.

“Supersymmetry, the Top Quark and the Higgs Mass”

Fermilab, Batavia, IL, March 1998.

Argonne National Laboratory, Batavia, IL, March 1998.

Rutgers University, NJ, U.S.A., April 1998.

“Summary of the SUGRA Working Group Activities”

First General Meeting of the SUSY/HIGGS Tevatron Run II Workshop, Fermilab, Batavia, IL, U.S.A., May 1998.

“Higgs and Supersymmetric Particle Physics in the Large $\tan\beta$ regime

First European Meeting from the Weak scale to the Planck scale, Kazimierz, Poland, May 1998.

“On Higgs Searches at LEP2

Meeting of the LEP2 Higgs Working Group, CERN, Geneva, Switzerland, June 1998.

“Electroweak Baryogenesis and Supersymmetry”

Institute for Particle Physics, Stony Brook University, NY, U.S.A., February 1998.

SUSY 98 Conference, Oxford, England, July 1998.

Physics Department, University of Buenos Aires, Buenos Aires, Argentina, July 1998.

DESY Theory Workshop, DESY, Hamburg, Fed. Rep. of Germany, October 1998.

“Supersymmetry Phenomenology at the Tevatron Collider” Fermilab, Batavia, IL, November 1998.

“Higgs Phenomenology and CP-Violation in the MSSM

IFT Workshop on Higgs and Supersymmetry: Search and Discovery, Gainesville, Florida, March 1999.

Recontres de Moriond, Electroweak Session, Les Arcs, France, March 1999.

Meeting on Supersymmetry Phenomenology, Lyon, France, March 1999.

Second European Meeting From the Planck Scale to the Electroweak Scale, Bad Honnef, Germany, April 1999.

“The complementarity of LEP, the Tevatron and the LHC in the search for a light MSSM Higgs Boson”

SUSY99, Fermilab, Batavia, IL, U.S.A., June 1999.

“Phenomenology of Theories with Large Extra Dimensions”

CERN, Geneva, June 1999

Argonne National Laboratory, Argonne, IL, U.S.A., July 1999.

“On Higgs Searches at LEP and the Tevatron”

Workshop on Phenomenology of Supersymmetry and Superbranes, Aspen, CO, U.S.A., July 1999.

“Diagrammatic vs. RG computation of the lightest CP-even Higgs mass”

Univ. of Wisconsin, Madison, Oct. 1999.

Workshop on New Theoretical Developments for Higgs searches at LEP, Oct. 1999

“New progress on Electroweak Baryogenesis”

Pascos Conference, Lake Tahoe, December 1999.

“New Theoretical Developments on Higgs Physics”

Aspen Winter Physics Conference, Aspen, CO, U.S.A., January 2000.

“Higgs Physics, Supersymmetry and CP Violation”

Recontres de Moriond, QCD Session, Les Arcs, France, March 2000.

“Phenomenology of Supersymmetry.”

Univ. of Chicago, Chicago, IL, U.S.A., April 2000.

“New Theoretical Developments in the MSSM Higgs sector.”

Univ. of Illinois, Urbana, IL, U.S.A., April 2000.

“Electroweak Precision Measurement and a Light Sbottom in the MSSM ”

DPF Meeting, Columbus, OH, U.S.A., August 2000.

Aspen Workshop on Physics at the Weak Scale and Beyond, August 2000.

“Supersymmetry and Electroweak Baryogenesis”

Argonne National Laboratory, Argonne, IL, U.S.A., May 2000.

DPF Meeting, Columbus, OH, July 2000.

RadCor Conference, Carmel, CA, U.S.A., September 2000.

“Higgs Physics and Electroweak Baryogenesis”

Univ. of Alabama, Tuscaloosa, AL, November 2000.

“A Tale of Two Gravitons”

Workshop on Physics in Extra Dimensions, Warsaw, Poland, February 2001.

“Higgs Physics and CP Violation”

University of Chicago, February 2001.

“On the Anomalous Magnetic Moment of the Muon”

University of Chicago, March 2001.

“Supersymmetry at Photon Colliders”

Workshop on Physics at Photon Colliders, Fermilab, Batavia, March 2001.

“Electroweak Baryogenesis in the MSSM”

Higgs and Supersymmetry, Orsay, France, March 2001;

Workshop on Cosmology in Supesymmetry and String Theory, Heidelberg, Germany, April 2001.

“Higgs Physics and the Origin of the Baryon Asymmetry in the MSSM”

DESY, Hamburg, Germany, April 2001.

“Introduction to Supersymmetry”

University of Chicago, Chicago, IL, May 2001.

“New Physics at the Tevatron”

Pheno 2001 Conference, Madison, Wisconsin, May 2001.

“The muon Anomalous Magnetic Moment as a Probe of the Standard Model”

Physics Division Colloquium, Argonne National Lab, June 2001.

“Brane Effects on Extra Dimensional Scenarios”

Theory Institute, Argonne National Lab, June 2001.

“Probing Heavy Higgs Boson Models at TeV Linear Colliders”

Workshop on Physics at Linear Colliders, Chicago, January 2002.

“Beautiful Mirrors and Electroweak Precision Data”

Michigan State University, October 2001.

Workshop on Physics at Linear Colliders, Chicago, January 2002.

WIN02 Conference, Christchurch, New Zealand, January 2002.

Aspen Winter Conference, Aspen CO, Feb. 2002.

“Summary Talk, Electroweak Symmetry Breaking Group”

WIN02 Conference, Christchurch, New Zealand, January 2002.

“Beauty and the Beast: New Physics Solutions to Bottom Quark Problems”

EFI Seminar, Univ. of Chicago, April 2002.

“Electroweak Baryogenesis in the MSSM ”

Plenary talk, SUSY 2002 Conference, DESY, Hamburg, June 2002.

“Brane and Orbifolds are Opaque”

Aspen Summer Conference, Aspen, CO, August 2002.

“Precision Measurements, New Physics and Unification of Couplings”

Caltech, Pasadena, CA, December 2002.

“Supersymmetry, the Baryon Asymmetry and the Origin of Mass.” Physics Colloquium, University of Chicago, February 2003.

“Extra Dimensions ”

Talk at the LDRD Symposium, Argonne National Laboratory, March 2003.

“Electroweak Baryogenesis and Low Energy Supersymmetry”

Aspen Winter Conference, January 2003.

Plenary talk, Conference on twenty years of Supergravity, March 2003.

“Physics of Extra Dimensions”

Argonne National Laboratory Theory Meeting, April 2003.

“Supersymmetry and the Matter-Antimatter Asymmetry ”

Texas A&M Colloquium, College Station, Texas, May 2003.

“Precision Electroweak Data, Unification of Couplings and Collider Phenomenology ”

Supersymmetry 2003 Conference, Tucson, Arizona, June 2003.

“Electroweak Baryogenesis in the MSSM ”

Workshop on Baryogenesis, Ann Arbor, Michigan, June 2003.

“Beautiful Mirrors and Unification of Couplings ”

Aspen Summer Workshop, Aspen, CO, August 2003.

“On the Unification of Fundamental Particle Interactions ”

Texas A&M Colloquium, College Station, Texas, October 2003
“Precision Electroweak Measurements and Collider Phenomenology ”
 Univ. of Wisconsin, Madison, November 2003.
“Physics in Extra Dimensions ”
 Aspen Winter Conference, Aspen, CO, January 2004
“Supersymmetry and the Matter-Antimatter asymmetry ”
 Northwestern University, Evanston, IL, February 2004
“Supersymmetry, Dark Matter and Electroweak Baryogenesis ”
 University of Chicago, Chicago, IL, February 2004
 Colorado State University, Boulder, CO, March 2004
“New Physics at the Tevatron”
 EFI Mini-Symposium on Tevatron Physics, Chicago, IL, March 2004
“Cosmology and Phenomenology of a minimal extension of the MSSM”
 Moriond Winter Conference, La Thuile, March 2004
“Supersymmetry, Dark Matter and the Matter-Antimatter Asymmetry ”
 The Ohio State University, Columbus, OH, April 2004
 APS April 2004 Meeting, Denver, CO, May 2004
“Higgs Physics, Supersymmetry and CP Violation ”
 International Conference on Supersymmetry 2004, Tsukuba, Japan, June 2004.
“New Physics at Hadron and Lepton Colliders ”
 Fifth Latinamerican Symposium on High Energy Physics, Lima, Peru, July 2004.
“Lectures on Physics Beyond the Standard Model ”
 VI Giambiagi School on Particle Physics, University of Buenos Aires, Buenos Aires, July 2004.
“Baryogenesis and New Physics at the Weak Scale ”
 Slac Summer Institute, SLAC, August 2004.
 Pascos 2004, Northeastern University , August 2004.
 Fermi National Laboratory, September 2004.
“Supersymmetry, Baryogenesis, and New TeV Fermions ”
 University of Chicago, Chicago, IL, October 2004.
 2004 Miami Conference on Particle Physics, Key Biscane, FL, December 16, 2004.
“Gauge Bosons in Warped Extra Dimensions and Precision Measurements ”
 Workshop on Z' physics, Northwestern University, Evanston, IL, November 2004.
“New Results in Electroweak Baryogenesis ”
 Aspen Winter Conference, Aspen, CO, February 17, 2005.
“The Supersymmetric Origin of Matter ”

Linear Collider Workshop, Stanford, CA, March 20, 2005.
“Electroweak Baryogenesis in the (n)MSSM and CP-violation”
 CP and Non-Standard Higgs Workshop, SLAC, CA, March 25, 2005.
“New Physics at the Top ”
 Top Quark Symposium, Michigan, Ann Arbor, April 8, 2005.
“New Results in Electroweak Baryogenesis ”
 Univ. of Manchester, England, July 6, 2005
“Electroweak Precision Measurements and New Physics ”
 Pre-SUSY2005 Meeting, Durham, England, July 13, 2005.
“Lectures on Supersymmetry ”
 Lectures given at Fermilab, Batavia, Il, June 23 and June 30, 2005.
 Lectures given at the Les Houches Summer school, August 2–4, 2005.
“Determining the Charged Higgs Bosons properties at the ILC”
 Snowmass Workshop, Snowmass, CO, August 18, 2005.
“Higgs and B-physics at the Tevatron and the LHC”
 Lunch Seminar, HEP Division, October 18, 2005.
 Plenary Talk, TeV4LHC Workshop, Fermilab, October 20, 2005.
“Higgs Physics”
 Graduate Student Seminar, Univ. of Chicago, October 25, 2005.
“Low Energy Supersymmetry and Electroweak Baryogenesis”
 Plenary Talk, International Conference on Flavor Physics, National Central University, October 6, 2005.
 University of Minnesota, Minneapolis, November 10, 2005.
 University of Chicago, February 7, 2006.
“Dark Matter and New Physics Searches at Hadron and Lepton Colliders”
 KICP Seminar, LASR, Univ. of Chicago, February 10, 2006.
“Constraints on B and Higgs Physics in Minimal Supersymmetric Models”,
 Univ. of Florida, Mar. 10, 2006.
“Baryogenesis, Dark Matter and Low Energy Supersymmetry” ,
 CIPANP 2006, Westin Mar Rio Beach, Puerto Rico, May 31, 2006.
 SUSY06, Univ. of California, Irvine, June 15, 2006.
 Santa Fe Physics Workshop, Santa Fe, July 25, 2006.
“Electroweak Baryogenesis”,
 PASCOS 2006, Columbus, OH, September 10, 2006.
“Constraints on B and Higgs Physics in Minimal Supersymmetric Models”,
 Univ. of Chicago, Sept. 21, 2006.

Michigan State Univ., Oct. 17, 2006.

“Lectures on Supersymmetry”

Puerto Vallarta, Mexico, October 28–Nov. 1, 2006.

“Summary talk, Aspen Winter Conference”,

Aspen, CO, January 12, 2007.

“Interplay of B and Higgs Physics in Minimal Supersymmetric Models” ,

Joint Brookhaven–Stony Brook seminar, January 31, 2007.

“Lectures on Supersymmetry”

CERN School on Particle Physics, Renaca, Chile, February 26–March 2, 2007

“Electroweak Baryogenesis and Supersymmetry”

Moriond Conference, Electroweak Session, La Thuile, Italy, March 16, 2007

“Absence of Higgs Signatures at the LHC and the ILC”

Plenary talk, Workshop on the “Early Phase of the LHC and the ILC”, April 12, 2007.

“Electroweak Baryogenesis”

Plenary Talk, Workshop on the “Hunt for Dark Matter”, Fermilab, May 12, 2007

Radiative Electroweak Symmetry Breaking and Gauge Higgs Unification in Warped Extra Dimensions

Argonne/University of Chicago Joint Collier Institute, Argonne, IL, June 5, 2007.

“Interplay of B-Physics and Higgs Searches at Hadron Colliders”

Plenary Talk, Planck 2007 Conference, Warsaw, Poland, June 13, 2007

“Physics at the Weak Scale, Dark Matter and the Matter-Antimatter Asymmetry”

ICTP School on Particle Physics, Trieste, Italy, June 20, 2007

“New Developments in Electroweak Baryogenesis “

Beyond the Standard Model at the Dawn of the LHC era, Budapest, Hungary, June 27, 2007.

Supersymmetry, Dark Matter and the Matter-Antimatter Asymmetry Workshop on the LHC Cosmology Interplay, CERN, Switzerland, July 13, 2007.

10 Recent Community Activities

Convener, SUGRA Working Group, Workshop on Physics at the Tevatron Collider, Fermilab (1998–2000).

Organizer, Theory Institute on Supersymmetry and Higgs Physics, Argonne, May 2000.

Local Organizer, SUSY 2000, CERN, Geneva, July 2000.

Convener, Beyond the Standard Model Session, DPF Meeting, Columbus, Ohio, August 2000.

Convener, Beyond the Standard Model Group, Workshop on Physics at Gamma Colliders, Fermilab, March 2001.

Convener, Higgs Workshop on Recent Developments on Higgs Physics, Fermilab, May 2001.

Convener, Workshop on Higgs Physics at TeV Colliders, Les Houches, France, May 2001.

Organizer, Theory Institute on Supersymmetry and Extra Dimensions, Argonne, June 2001.

Convener, Electroweak Symmetry Breaking Session, WIN02 Conference, Chirstchurch, New Zealand, January 2002.

Organizer, Theory Institute on Supersymmetry, Higgs Physics and Extra Dimensions, held at Argonne, September 2002.

Member, SPS Committee at CERN, 1997–2000.

Member, LEP Higgs Working Group, 1997–2002.

Local Organizer, Cosmo02 Conference, held at Chicago, IL, September 2002.

Oganizer, Chicagoland Theory Seminar, held at Argonne National Laboratory, October 2002.

Search Committee, Joint Junior Facutly position Argonne-Univ. of Chicago, 2002–2003.

Organizer, Neutrino Workshop, Argonne Nat. Lab., May 11–May 17, 2003.

Organizer, Baryogenesis Workshop, Univ. of Michigan, Ann Arbor, June 9–June 27,2003.

Co-organizer, Workshop on Brane Dynamics, Argonne, IL, October 2003

Member, Strategic Planning Group, HEP Division, Argonne National Laboratory.

Member, HEP Director Review Committee, Argonne Nat. Lab., October–December 2003.

Co-organizer, TASI lectures on Physics, 2004.

Co-organizer, Workshop on Higgs, Supersymmetry and Extra Dimension, Argonne, IL, May 2004.

Organizer, Enrico Fermi Institute Mini-Symposium on Physics Challenges at the LHC, EFI, Univ. of Chicago, March 14, 2005.

Co-Organizer, Argonne Workshop on Higgs, Supersymmetry and Extra Dimensions, Argonne, IL, May 9–13, 2005.

Local Organizer, Kaon 2005 Conference, Northwestern University, IL, July 2005.

Co-Organizer, Les Houches Summer School, Les Houches, France, August 2005.

Scientific Advisory Board, Argonne Theory Institute, October 2004–

Member, International Advisory Committe for the dual Colima-Puebla Institute of High Energy Physics, Colima and Puebla, Mexico, January 2006.

Member, Argonne HEP Director Search Committee, February 2005–

Member, Steering Committee of the LHC Theory Initiative (LHC-TI), May 2005–,

Member, Colloquium Committee, Univ. of Chicago, August 2005–.

Head, Search Committee, for a position on Theoretical High Energy Physics at the Univ. of Chicago, Nov. 2005–

Member, Elementary Particle and Astrophysics NSF Review Panel, Arlington, VA, February 20–22, 2006.

Member, Lawrence Berkeley National Laboratory DOE Review Panel, Berkeley, CA, February 28–March 2, 2006.

Organizer, Argonne/University of Chicago Collider Workshop, Argonne, IL, May 8–12, 2006.

Organizer, Aspen Summer Workshop, Aspen, CO, August 2006.

Head, Search Committee, for a joint Argonne Nat. Lab.- Northwestern Univ. position on Theoretical High Energy Physics, Nov. 2006 –

Convener, WIN07 Conference, Calcutta, India, January 15–20, 2007.

Member, Search Committee, for a joint Fermilab–Univ. of Chicago position on Theoretical High Energy Physics, February 2007–

Member, Lawrence Berkeley National Laboratory DOE Review Panel, Berkeley, CA, March 20–22, 2007.

Leader, Astrophysics Initiative, Argonne, April 2007–

11 Recently Obtained External Funding Awards

U.C.–ANL Collaboration Grant, 1999.

“Physics Beyond the Standard Model and Experimental Tests”, obtained in collaboration with Ed Berger of Argonne and J. Rosner at the University of Chicago. 40,000 U\$ were received at Argonne and a similar amount at Chicago. These funds were used to support the appointment of D. Kaplan at the Theory Group between fall of the year 1999 and the fall of 2001.

Argonne Theory Institute, FY 2000 on Higgs and Supersymmetry Physics, Obtained in Collaboration with Ed Berger. Provided by Associate Laboratory Director F. Fradin, in the amount of 20,000 U\$ to organize a Workshop at the HEP Division, which took place in April–May, 2000.

Theory Institute FY 2001 on Physics at the Electroweak Scale, Obtained in Collaboration with Ed Berger. Provided by Associate Laboratory Director F.

Fradin, in the amount of 20,000 U\$ to organize a Workshop at the HEP Division, which took place in June of 2001.

Argonne Individual Investigator Laboratory Directed Research and Development Award, October 2001.

Obtained in Collaboration with Ed Berger. Awarded 57,000 U\$ to appoint a postdoc at the Argonne Theory Group, on the fields of Beyond the SM and Extra Dimensions.

Renewal proposal approved in October 2002.

Principal Investigator, University of Chicago DOE Grant, September 2006–.

Obtained in Collaboration with Profs. D. Kutasov, E. Martinec and J. Rosner from the Enrico Fermi Institute, University of Chicago.

Argonne National Laboratory Theory Institute, FY 2003 on Current Trends in Neutrino Physics,

20, 000 U\$\$ to organize a Workshop at the HEP Division, May 11-17, 2003.

Argonne National Laboratory Theory Institute, FY 2004 on Supersymmetry, Higgs Physics and Extra Dimensions

20, 000 U\$\$ to organize a Workshop at the HEP Division, May 24-28, 2004.

Argonne National Laboratory Theory Institute, FY 2005 on Supersymmetry, Higgs Physics and Extra Dimensions

20, 000 U\$\$ to organize a Workshop at the HEP Division, May 9–13, 2005.

Principal Investigator, University of Chicago–Argonne National Laboratory Collaborative Seed Grant, October 2005–

Co-Principal Investigator: Henry Frisch from University of Chicago. 100,000 U\$\$ Grant Awarded to organize a "Joint Institute on High Energy Collider Physics."

Renewed in October 2006.

Principal Investigator, University of Chicago–Argonne National Laboratory Joint Theory Institute, February 2007–

Co-Principal Investigators: Jeff Harvey, David Kutasov, Craig Roberts, Cosmas Zachos and Don Sinclair

108,000 U\$\$ awarded to hire a joint postdoc, a student and organize two workshops on non-

perturbative studies of gauge theories and brane dynamics.

12 Publications in Refereed Journals

1. “Low Energy Supergravity: R Parity Breaking and the Top Quark Mass”
M. Carena and C.E.M. Wagner
Phys. Lett. **B 186**, pp. 361-364 (1987).
2. “Neutralino Production in $e^+ e^-$ Annihilation”
M. Carena and C.E.M. Wagner
Phys. Lett. **B 195**, pp. 599-602 (1987).
3. “Limits on the Top Quark Mass within the Frame of the Minimal Superstring Inspired Model”
M. Carena and C.E.M. Wagner
Phys. Lett. **B 198**, pp. 205-208 (1987).
4. “Comment on New Model of B-Quark Interactions: A Superstring Alternative”
J. Russo and C.E.M. Wagner
Phys. Rev. Lett. **58**, pp. 1380 (1987).
5. “Non-Abelian Theory for Massive Vector Bosons and Canonical Quantization”
M. Carena, L. Masperi and C.E.M. Wagner
Phys. Rev. **D 37**, pp. 560-562 (1988).
6. “Canonical Quantization of Nonabelian Gauge Theories in Two Dimensions”
C. E. M. Wagner
Phys. Lett. **B 209**, pp. 300-306 (1988).
7. “Linked Cluster Expansion in the SU(2) Lattice Higgs Model at Strong Gauge Coupling”
C. E. M. Wagner
Nucl. Phys. **B 327**, pp. 485-514 (1989).

- 8.** “Asymptotic Fermions in Two Dimensional Chiral Gauge Theories”
C. E. M. Wagner
Phys. Lett. **B 222**, pp. 79-85 (1989).
- 9.** “Nonperturbative Aspects of the Lattice Regularized Standard Electroweak Theory”
C. E. M. Wagner
Report N^o DESY 89-083, July 1989, **Ph. D. Thesis.**
- 10.** “Induced Fermion Number in the O(3) Nonlinear Sigma Model.”
M. Carena, S. Chaudhuri and C.E.M. Wagner
Phys. Rev. **D 42**, pp. 2120-2126 (1990).
- 11.** “Parity Breakdown and Induced Fermion Number in the O(3) Nonlinear Sigma Model.”
M. Carena, S. Chaudhuri, T. ter Veldhuis and C.E.M. Wagner
Phys. Lett. **B 252**, pp. 101-107 (1990).
- 12.** “Theta Vacuum in the Chiral Schwinger Model.”
M. Carena and C.E.M. Wagner
Int. J. of Mod. Phys. **A 6**, pp. 243-261 (1991).
- 13.** “Superconductivity and Supersymmetric QED in Three Dimensions.”
M. Carena, T. E. Clark and C.E.M. Wagner
Int. J. of Mod. Phys. **A 6**, pp. 217-241 (1991).
- 14.** “The Phase Structure of QED₃ with Fermion Self-Coupling.”
M. Carena, T.E. Clark and C.E.M. Wagner
Nucl. Phys. **B 356**, pp. 117-153 (1991).
- 15.** “A dynamically generated Chern-Simons Term in QED₃ with Fermion Self-Coupling.”
M. Carena, T.E. Clark and C.E.M. Wagner
Phys. Lett. **B 259**, pp. 128-134 (1991).
- 16.** “Dynamical Symmetry Breakdown and the Top Quark Mass in the Minimal Supersymmetric Standard Model”
W. A. Bardeen, M. Carena, T.E. Clark, K. Sasaki and C.E.M. Wagner

Nucl. Phys. **B 369**, pp. 33-53 (1992).

17. “Bound State Mass in Quenched QED”

M. Carena and C. E. M. Wagner

Phys. Lett. **B 285**, pp. 277-284 (1992).

18. “Renormalization-Group Analysis of the Higgs Sector in the Minimal Supersymmetric Standard Model”

M. Carena, K. Sasaki and C.E.M. Wagner

Nucl. Phys. **B 381**, pp. 66-86 (1992).

19. “On the Unification of Couplings in the Minimal Supersymmetric Standard Model”

M. Carena, S. Pokorski and C. E. M. Wagner

Nucl. Phys. **B 406**, pp. 59-90 (1993).

20. “On the Finite Temperature Effective Potential in Scalar QED with N Flavors”

M. Carena and C. E. M. Wagner

Nucl. Phys. **B 407** pp. 606-634 (1993).

21. “Light Gluinos and Unification of Couplings”

M. Carena, L. Clavelli, D. Matalliotakis, H. P. Nilles and C. E. M. Wagner

Phys. Lett. **B 317** pp. 346-353 (1993).

22. “The τ Neutrino as a Majorana Particle”

M. Carena, B. Lampe and C. E. M. Wagner

Phys. Lett. **B317** pp. 112-118 (1993).

23. “Infrared Fixed Point Solution for the Top Quark Mass and the Unification of Couplings in the MSSM”

W. A. Bardeen, M. Carena, S. Pokorski and C. E. M. Wagner

Phys. Lett. **B 320** pp. 110-116 (1994).

24. “Radiative Electroweak Symmetry Breaking and the Infrared Fixed Point of the Top Quark Mass”

M. Carena, M. Olechowski, S. Pokorski and C. E. M. Wagner

Nucl. Phys. **B 419** pp. 213-239 (1994).

- 25.** “Electroweak Symmetry Breaking and Bottom-Top Yukawa Unification”
M. Carena, M. Olechowski, S. Pokorski and C. E. M. Wagner
Nucl. Phys. **B 426** pp. 269 - 300 (1994).
- 26.** “Higgs and Supersymmetric Particle Signals at the Infrared Fixed Point of the Top Quark Mass”
M. Carena and C.E.M. Wagner
Nucl. Phys. **B 452**, pp. 45 - 79 (1995).
- 27.** “Fermion Masses, Mixing Angles and Supersymmetric SO(10) Unification”
M. Carena, S. Dimopoulos, S. Raby and C.E.M. Wagner
Phys. Rev. **D 52**, 4133-4142 (1995).
- 28.** “Analytical Expressions for Radiatively Corrected Higgs Masses and Couplings in the MSSM”,
M. Carena, J.R. Espinosa, M. Quiros and C.E.M. Wagner,
Phys. Lett. **B 355**, pp. 209 - 221 (1995) .
- 29.** “Effective Potential Methods and the Higgs Spectrum in the MSSM ”
M. Carena, M. Quirós and C. Wagner
Nucl. Phys. **B 461**, pp. 407-436 (1996).
- 30.** “Light Higgsino Detection at LEP1.5”
S. Ambrosanio, B. Mele, M. Carena and C.E.M. Wagner
Phys. Lett. **B 373** pp. 107-116 (1996).
- 31.** “Four-Generation Low Energy Supersymmetry and the Top Quark Mass”
M. Carena, H. Haber and C.E.M. Wagner
Nucl. Phys. **B 472** pp. 55-78 (1996).
- 32.** “Opening the Window for Electroweak Baryogenesis”
M. Carena, M. Quirós and C.E.M. Wagner
Phys. Lett. **B 380** pp. 81-91 (1996).

- 33.** “Constraints on Supersymmetric Models from the Muon Anomalous Magnetic Moment”,
M. Carena, G.F. Giudice and C.E.M. Wagner
Phys. Lett. **B 390** pp. 234-242 (1997).
- 45.** “A Global χ^2 Analysis of Electroweak Data in SO(10) SUSY GUT”
T. Blazek, M. Carena, S. Raby and C.E.M. Wagner
Phys. Rev. **D 56** pp. 6919-6938 (1997).
- 34.** “Bottom-Up Approach and Supersymmetry Breaking”
M. Carena, P. Chankowski, M. Olechowski, S. Pokorski and C.E.M. Wagner
Nucl. Phys. **B 491** pp. 103-128 (1997).
- 35.** “Four Jet Signal at LEP2 and Supersymmetry”
M. Carena, G.F. Giudice, S. Lola and C.E.M. Wagner
Phys. Lett. **B 395** pp. 225-233 (1997).
- 36.** “Electroweak Baryogenesis and Low Energy Supersymmetry”
M. Carena, M. Quiros, A. Riotto, I. Vilja and C.E.M. Wagner
Nucl. Phys. **B 503** pp. 387-404 (1997).
- 37.** “Supersymmetry and Charged Current Events at HERA”
M. Carena, D. Choudhury, S. Raychaudhuri and C.E.M. Wagner
Phys. Lett. **B 414** pp. 92-103 (1997).
- 38.** “Electroweak Baryogenesis and Higgs and Stop Searches at LEP and the Tevatron”
M. Carena, M. Quiros and C.E.M. Wagner
Nucl. Phys. **B524** pp. 3-22 (1998).
- 39.** “Photon Signatures for Low-Energy Supersymmetry Breaking and Broken R-Parity”
M. Carena, S. Pokorski and C.E.M. Wagner
Phys. Lett. **B430** pp. 281-289 (1998).
- 40.** “On the Soft Supersymmetry Breaking Parameters in Gauge-Mediated Models”
C.E.M. Wagner
Nucl. Phys. **B528** pp. 3-20 (1998).

- 41.** “The Higgs Boson Mass as a Probe of the Minimal Supersymmetric Standard Model”
M. Carena, P. Chankowski, S. Pokorski and C.E.M. Wagner
Phys. Lett. **B441** pp. 205-214 (1998).
- 42.** “MSSM Higgs Boson Phenomenology at the Tevatron Collider “
M. Carena, S. Mrenna and C.E.M. Wagner
Phys. Rev. **D60**: 075010, 1999
- 43.** “Higgs Bosons in the Minimal Supersymmetric Standard Model with Explicit CP Violation”
A. Pilaftsis and C.E.M. Wagner
Nucl. Phys. **B553** (1999) 3.
- 44.** “Neutrino Masses, Mixing Angles and the Unification of Couplings in the MSSM”
M. Carena, J. Ellis, S. Lola and C.E.M. Wagner
Eur. Phys. J. **C12** (2000) 507.
- 45.** “The complementarity of LEP, the Tevatron and the LHC in the Search for a light MSSM Higgs Boson”
M. Carena, S. Mrenna and C.E.M. Wagner
Phys.Rev. **D62**:055008, 2000.
- 46.** “Cosmological Magnetic Fields from Gauge Mediated Supersymmetry Breaking Models”
A. Kandus, E.A. Calzetta, F.D. Mazzitelli and C.E.M. Wagner
Phys. Lett. **B 472** (2000) 287.
- 47.** “Effective Lagrangian for the $H^+\bar{t}b$ interaction in the MSSM and charged Higgs phenomenology”
M. Carena, D. Garcia, U. Nierste and C.E.M. Wagner
Nucl. Phys. **B577** (2000) 88
- 48.** “Reconciling the Two Loop Diagrammatic and Effective Potential Computations of the Lightest CP-even Higgs Boson Mass in the MSSM”
M. Carena, H.E. Haber, S. Heinemeyer, W. Hollik, C.E.M. Wagner and G. Weiglein

Nucl. Phys. **B580** (2000) 29.

49. “Renormalization Group Improved Effective Potential for the MSSM Higgs Sector with Explicit CP Violation ”

M. Carena, J. Ellis, A. Pilaftsis and C.E.M. Wagner

Nucl. Phys. **B586** (2000) 92.

50. “Do Electroweak Precision Data and Higgs Mass Constraints Rule Out a Scalar Bottom Quark with Mass of $O(5 \text{ GeV})$? ”

M. Carena, S. Heinemeyer, C.E.M. Wagner and G. Weiglein

Phys. Rev. Lett. 86 (2001) 4463.

51. “CP-Violating Higgs Bosons in the Light of LEP2 ”

M. Carena, J. Ellis, A. Pilaftsis and C.E.M. Wagner

Phys. Lett. **B495** (2000) 155.

52. “ $b \rightarrow s \gamma$ and Supersymmetry with Large $\tan \beta$ ”

M. Carena, D. Garcia, U. Nierste and C.E.M. Wagner

Phys. Lett. **B499** (2001) 141.

53. “Supersymmetric CP Violating Currents and Electroweak Baryogenesis ”

M. Carena, J.M. Moreno, M. Quiros, M. Seco and C.E.M. Wagner

Nucl. Phys. **B599** (2001) 158.

54. “Low Energy Supersymmetry and the Tevatron Bottom Quark Cross Section ”

E.L. Berger, B.W. Harris, D.E. Kaplan, Z. Sullivan, T.P.M. Tait and C.E.M. Wagner

Phys. Rev. Lett. 86 (2001) 4231.

55. “Brane Effects on Higher Dimensional Scenarios: A Tale of Two Gravitons ”

M. Carena, A. Delgado, J. Lykken, S. Pokorski, M. Quiros and C.E.M. Wagner

Nucl. Phys. B. **B609**:499-517,2001

56. “Beautiful Mirrors and Precision Electroweak Data ”

D. Choudhury, T.M.P. Tait and C.E.M. Wagner

Phys. Rev. **D65**:053002, 2002.

- 57.** “Higgs Pole Masses in the MSSM with Explicit CP-violation ”
M. Carena, J. Ellis, A. Pilaftsis and C.E.M. Wagner
Nucl. Phys. **B625** (2002) 345.
- 58.** “Probing heavy Higgs Boson Models with a TeV Linear Collider ”
D. Choudhury, T.M.P. Tait and C.E.M. Wagner
Phys Rev. **D65**:115007, 2002.
- 59.** “Suggestions for benchmark scenarios for MSSM Higgs searches at hadron colliders ”
M. Carena, S. Heinemeyer, C.E.M. Wagner, G. Weiglein
Eur. Phys. J. C **26**, 601 (2003)
- 60.** “The Snowmass points and slopes: Benchmarks for SUSY searches ”
B.C. Allanach, *et al.*
Eur. Phys. J. **C25**:113, 2002.
- 61.** “Higgs boson decay into hadronic jets ”
E. L. Berger, C. W. Chiang, J. Jiang, T. M. Tait and C. E. M. Wagner,
Phys. Rev. **D66**, 095001 (2002).
- 62.** “Top-squark searches at the Tevatron in models of low-energy supersymmetry breaking ”
M. Carena, D. Choudhury, R. A. Diaz, H. E. Logan and C. E. M. Wagner,
Phys. Rev. **D66**, 115010, 2002.
- 63.** “Branes and orbifolds are opaque ”
M. Carena, T. M. P. Tait and C. E. M. Wagner,
Acta Phys.Polonica **B33** (2002) 2325.
- 64.** “Improved results in supersymmetric electroweak baryogenesis ”
M. Carena, M. Quiros, M. Seco and C. E. M. Wagner,
Nucl. Phys. **B 650** (2003) 24.
- 65.** “Collider probes of the MSSM Higgs sector with explicit CP violation ”
M. Carena, J. Ellis, S. Mrenna, A. Pilaftsis and C.E.M. Wagner
Nucl. Phys. B **659**, 145 (2003)

- 66.** “Opaque branes in warped backgrounds ”
M. Carena, E. Ponton, T.M.P. Tait and C.E.M. Wagner
Phys. Rev. D **67**, 096006 (2003)
- 67.** “Precision electroweak data and unification of couplings in warped extra dimensions”
M. Carena, A. Delgado, E. Ponton, T. M. Tait and C. E. M. Wagner,
Phys. Rev. D **68**, 035010 (2003)
- 68.** “CPsuperH: A computational tool for Higgs phenomenology in the MSSM with explicit CP violation, ”
J. S. Lee, A. Pilaftsis, M. Carena, S. Y. Choi, M. Drees, J. R. Ellis and C. E. M. Wagner,
Comput. Phys. Commun. **156**, 283 (2004)
- 69.** “Beautiful mirrors, unification of couplings and collider phenomenology ”
D. E. Morrissey and C. E. M. Wagner,
Phys. Rev. **D69**:053001, 2004
- 70.** “Dark matter, light stops and electroweak baryogenesis ”
C. Balazs, M. Carena and C. E. M. Wagner,
Phys. Rev. **D70**:015007, 2004.
- 71.** “Electroweak baryogenesis and dark matter in the nMSSM ”
A. Menon, D. E. Morrissey and C. E. M. Wagner,
Phys. Rev. **D70**:035005, 2004.
- 72.** “Warped fermions and precision tests,”
M. Carena, A. Delgado, E. Ponton, T. M. P. Tait and C. E. M. Wagner,
Phys. Rev. D **71**, 015010 (2005)
- 73.** “Electroweak baryogenesis and new TeV fermions,”
M. Carena, A. Megevand, M. Quiros and C. E. M. Wagner,
Nucl. Phys. B **716**, 319 (2005)
- 74.** “The Supersymmetric Origin of Matter,”
M. Carena, C. Balazs, A. Menon, D. Morrissey and C.E.M. Wagner,
Phys. Rev. D **71**, 075002 (2005)

- 75.** “Proton Lifetime and Baryon Number Violating Signatures at the LHC in Gauge Extended Models”
D. Morrissey, T. Tait and C.E.M. Wagner,
Phys. Rev. D **72**, 095003 (2005)
- 76.** “MSSM Higgs boson searches at the Tevatron and the LHC: Impact of different benchmark scenarios”
M. Carena, S. Heinemeyer, C. E. M. Wagner and G. Weiglein,
Eur. Phys. J. C **45**, 797 (2006)
- 77.** “Constraints on B and Higgs physics in minimal low energy supersymmetric models”
M. Carena, A. Menon, R. Noriega-Papaqui, A. Szykman and C. E. M. Wagner,
Phys. Rev. **D74**:015009,2006
- 78.** “Light Kaluza-Klein states in Randall-Sundrum models with custodial SU(2)”
M. Carena, E. Ponton, J. Santiago and C. E. M. Wagner,
Nucl. Phys. B **759**, 202 (2006)
- 79.** “Gravitons and dark matter in universal extra dimensions”
N. R. Shah and C. E. M. Wagner,
Phys. Rev. D **74**, 104008 (2006)
- 80.** “Soft leptogenesis in warped extra dimensions”
A. D. Medina and C. E. M. Wagner,
JHEP **0612**, 037 (2006)
- 81.** “Baryogenesis from an earlier phase transition”
J. Shu, T. M. P. Tait and C. E. M. Wagner,
Phys. Rev. **D75**:063510, 2007
- 82.** “Electroweak constraints on warped models with custodial symmetry”
M. Carena, E. Ponton, J. Santiago and C. E. M. Wagner,
arXiv: [hep-ph/0701055], January 2007
Accepted for publication in Phys. Rev. **D**

83. “Challenges for MSSM Higgs Searches at Hadron Colliders”

M. Carena, A. Menon and C. E. M. Wagner

arXiv:0704.1143 [hep-ph], April 2007

Accepted for publication in Phys. Rev. **D**

84. “Phenomenology of the nMSSM: From Colliders to Cosmology”

M. Carena, A. Freitas, C. Balazs and C.E.M. Wagner

JHEP06 (2007) 066.

85. “Radiative Electroweak Symmetry Breaking and Gauge Higgs Unification in Warped Extra Dimensions”

A. Medina, N. Shah and C.E.M. Wagner

arXiv:0706.1281 [hep-ph], June 2007

Submitted to Phys. Rev. **D**.

12.1 Reviews and Proceeding Contributions

1. “Scaling Properties of QED₃ with Fermion Self-Couplings.”

C. E. M. Wagner

Proceedings of the Conference on High Energy Physics “Beyond the Standard Model II”, Norman OK, 1990, eds. K. Milton et al. (World Scientific, Singapore, **1991**) pp. 350-353.

2. “The Standard Model with Dynamical Electroweak Symmetry Breakdown”

C. E. M. Wagner

Proceedings of a Series of Seminars held at the Max-Planck-Institut für Physik: Lecture Notes in Physics - Phenomenological Aspects of Supersymmetry - Munich, FRG, 1991, eds. W. Hollik et al. (Springer-Verlag, Heidelberg, **1992**). pp. 280-301.

3. “Dynamical Electroweak Symmetry Breaking, Supersymmetry and the Top Quark Mass.”

C. E. M. Wagner

Proceedings of the Vancouver Meeting: “Particles and Fields’91”, Vol. 2, Vancouver, B. C. Canada, 1991, eds. D. Axen et al., (World Scientific, Singapore, **1992**) pp. 806-809.

4. “Unification of Couplings and the Dynamical Breakdown of the Electroweak Symmetry”

C. E. M. Wagner

Proceedings of “SUSY Particles”, Erice, Italy, September 28 -October 4, 1992; eds. L. Ci-farelli and V.A. Khoze, World Scientific **1993** pp. 469-483.

5. “The Infrared Fixed Point of the Top Quark Mass and Its Implications within the MSSM”

M. Carena and C.E.M. Wagner.

Proceedings of the “IFT Workshop on Yukawa Couplings and the Origin of mass”, pp. 60 - 84, University of Florida, Gainesville, February 11-13, 1994.

6. “Non Universal Soft Supersymmetry Breaking and Minimal SO(10) unification”

M. Carena and C.E.M. Wagner.

Proceedings of the “IFT Workshop on Yukawa Couplings and the Origin of mass”, pp. 85 - 105, University of Florida, Gainesville, February 11-13, 1994.

7. “Interim Report on the Physics Motivations for an Energy Upgrade of LEP2”

G. Altarelli et al.

Preprint **CERN-TH/95-151**, **CERN-PPE 95-78**, August 1995.

8. “Physics at LEP and Yukawa Coupling Unification ”

C.E.M. Wagner

Proceedings of SUSY-95, International Workshop on Supersymmetry and Unification of Fundamental Interactions, pp. 219-226; eds. I. Antoniadis and H. Videau, Palaiseau, France, May 1995.

9. “Higgs Physics at LEP2”

M. Carena, P. Zerwas and the Higgs Working Group, in Vol. 1 of *Physics at LEP2*, eds. G. Altarelli, T. Sjöstrand and F. Zwirner, pp. 351-463, Geneva (1996).

10. “Searches for New Physics”

G. Giudice et al., in Vol. 1 of *Physics at LEP2*, eds. G. Altarelli, T. Sjöstrand and F. Zwirner, pp. 463-525, Geneva (1996).

11. “A Global χ^2 Analysis of Electroweak Data (including fermion masses and mixing

angles) in SO(10) SUSY GUT”

T. Blazek, M. Carena, S. Raby and C.E.M. Wagner

Presented at the 4th International Conference on Supersymmetries in Physics (SUSY 96),
College Park, MD, May 1996.

Nucl. Phys. Proc. Suppl. **A52** pp. 133-140 (1997).

12. “Electroweak Baryogenesis and Higgs Physics”

M. Carena and C.E.M. Wagner

Preprint CERN-TH/97-74, [hep-ph/9704347], April 1997

in “Perspectives on Higgs Physics II”, ed. G.L. Kane, World Scientific, Singapore, pp. 320-
358 (1998).

13. “Supersymmetry and Electroweak Baryogenesis “

C.E.M. Wagner

Proceedings of the Conference “Quantum Effects in the Minimal Supersymmetric Standard
Model “, Barcelona, Spain, 1997, ed. J. Sola, World Scientific, Singapore, pp. 428–450
(1998).

14. “Suggestions for Improved Benchmark Scenarios for Higgs Searches at LEP2”

M. Carena, S. Heinemeyer, G. Weiglein and C.E.M. Wagner

Contribution to the Workshop on New Theoretical Developments for Higgs Physics, Geneva,
Switzerland, Oct. 1999.

Preprint hep-ph/9912223

15. “Report of the SUGRA Working Group for run II of the Tevatron”

V. Barger, C.E.M. Wagner and the SUGRA Working Group

To be published in the Proceedings of the Higgs and Supersymmetry Workshop on Physics
at Run II of the Tevatron Collider

Preprint hep-ph/0003154 , March 2000

16. “Report of the Tevatron Higgs Working Group ”

M. Carena, J. Conway, H. Haber and J. Hobbs

To be published in the Proceedings of the Higgs and Supersymmetry Workshop on Physics
at Run II of the Tevatron Collider

Preprint hep-ph/0010338, October 2000

- 17.** “Physics opportunities at mu+ mu- Higgs factories ”
C. Blochinger, M. Carena, J. Ellis, H. Fraas, F. Franke, D. Garcia, S. Heinemeyer, S. Kraml, G. Moortgat-Pick, W. Murray, F. von der Pahlen, A. Pilaftsis, C.E.M. Wagner, G. Weiglein
e-print archive: hep-ph/0202199
Report of the Higgs factory working group of the ECFA-CERN study on Neutrino Factory and Muon Storage Rings at CERN
- 18.** “The Higgs Working Group: Summary Report ”
D. Cavalli, A. Djouadi, K. Jakobs, A. Nikitenko, M. Spira, C.E.M. Wagner, W.M. Yao *et al.*
e-Print archive: hep-ph/0202233
To appear in the proceedings of Workshop on Physics at TeV Colliders, Les Houches, France, 21 May - 1 Jun 2001
- 19.** “White paper report on using nuclear reactors to search for a value of $\theta(13)$,”
K. Anderson *et al.*,
e-Print archive:hep-ex/0402041.
- 20.** “Physics interplay of the LHC and the ILC,” L. S. Group *et al.*,
e-Print archive:hep-ph/0410364.
Accepted for Publication in Phys. Reports C.
- 21.** “Impact of tau polarization on the study of the MSSM charged Higgs bosons in top quark decays at the ILC”
E. Boos, V. Bunichev, M. Carena and C. E. M. Wagner,
e-Print archive: hep-ph/0507100.
- 22.** “Neutralino Dark Matter And Electroweak Baryogenesis,”
C. Balazs, M. Carena, A. Menon, D. E. Morrissey and C. E. M. Wagner,
Proceedings of the 2005 International Linear Collider Physics and Detector Workshop and 2nd ILC Accelerator Workshop, Snowmass, Colorado, 14-27 Aug 2005.
- 23** “Overview of Electroweak Baryogenesis,”
C. Balazs, M. Carena, A. Menon, D. E. Morrissey and C. E. M. Wagner,
Proceedings of the 2005 International Linear Collider Physics and Detector Workshop and 2nd ILC Accelerator Workshop, Snowmass, Colorado, 14-27 Aug 2005.

24. “Toward high precision Higgs-boson measurements at the international linear e+ e- collider”

S. Heinemeyer *et al.*,
arXiv:hep-ph/0511332.

25. “Supersymmetry parameter analysis: SPA convention and project”

J. A. Aguilar-Saavedra *et al.*
arXiv:hep-ph/0511344.

26. “Les Houches ‘Physics at TeV colliders 2005’ Beyond the standard model working group: Summary report,”

B. C. Allanach *et al.*,
arXiv:hep-ph/0602198.

27. “Tevatron-for-LHC report: Higgs,”

U. Aglietti *et al.*,
arXiv:hep-ph/0612172.

28. J. Terning, C. E. M. Wagner and D. Zeppenfeld,

“Physics in D $\zeta=4$. Proceedings, Theoretical Advanced Study Institute in elementary particle physics, TASI 2004, Boulder, USA, June 6-July 2, 2004,”

Prepared for Theoretical Advance Study Institute in Elementary Particle Physics (TASI 2004): Physics in D $\zeta=4$, Boulder, Colorado, 6 Jun - 2 Jul 2004