Biographical Sketch: Harris Kagan

Harris Kagan is an experimentalist specializing in high energy physics. His interests are in B-decays, tau-decays, detector development and diamonds. From 1978-1980 Dr. Kagan was a postdoctoral researcher for the University of Rochester's CLEO group. His CLEO responsibilities included the construction, maintenance and operation of the detector's muon system as well as the analysis software used by this system. These devices played a crucial role in the first observation of the decay of the B meson into muons.

In 1981 Dr. Kagan joined the faculty of The Ohio State University. He continued as a member of the CLEO collaboration until 2002. Along with members of the OSU/CLEO group he made major hardware contributions to three generations of high resolution drift chamber systems, the CLEO II calorimeter electronics readout system, and was the project leader for the CLEO III silicon detector. His analysis efforts included the measurement of the lifetime of the τ-lepton and charmed mesons, in addition to measurements of the branching ratio of B-mesons.

Dr. Kagan was a founding member and Co-Spokesperson of both DIAMAS and RD42, two projects with the goal of developing CVD diamond for particle tracking detectors. Since 1998 he has been a member of the ATLAS collaboration. In 2001-02 he spent a year at CERN working on the ATLAS Silicon tracker. In May of 2002 Dr. Kagan became a member of the BaBar collaboration to continue his interest in B-decays. His hardware contribution to BaBar was the construction of the diamond beam conditions monitor - the first such diamond device in any high energy physics experiment. This device was ground breaking in that it showed that diamonds were a viable detector material. Every LHC experiment now has some form of diamond detector. For ATLAS he constructed the diamond beam condition monitor and diamond beam loss monitor.

Education

1972	State University of New York at Stoney Brook	B.S. Physics
1979	University of Minnesota	Ph.D. High Energy Physics

Positions:

1978-1980	Research Associate, University of Rochester
1981-1986	Assistant Professor, The Ohio State University
1986-1990	Associate Professor, The Ohio State University
1991	Visiting Scholar, Harvard University
1990-Present	Professor (Physics), The Ohio State University
1995-Present	Professor (Art), The Ohio State University
2001-2002	Scientific Associate, CERN, European Organization for Nuclear Research

Honors:

1984	DOE Outstanding Junior Investigator Award
1992	Center for Teaching Excellence (OSU) Award
1994	Battelle Endowment for Science and Technology Award
2002	Fellow of the American Physical Society

Other Experience and Professional Service:

1994-Present	Co-Spokesperson, CERN RD42 Experiment
1994	Member of DOE (Lehman) Review of SLAC (B-Factory)
1995	Member of DOE (Lehman) Review of SLAC (BaBar Experiment)
1996	Member of DOE (Lehman) Review of Fermilab (D0 Experiment)
1997	Organizing Committee, 3rd International Meeting on Front End Electronics for High Resolution Tracking Detectors, Taos, NM
1998	Member, External Review Committee of Purdue University Physics Program
1998	Member, External Review Committee of LBNL Physics Program, Berkeley, CA
1998-2008	Organizing Committee, 2rd, 3rd, 4th, 5th and 6th International Conferences on Radiation Effects in Semiconductor Materials, Detectors, and Devices, Florence, Italy
2001	Scientific Advisory Committee, 9th Vienna Instrumentation Conference
2005	Organizing Committee, PASCOS 2006, Columbus, Ohio

Selected Peer-Reviewed Publications:

(Publications selected from over 750 peer-reviewed publications)

1. "Development of Diamond Radiation Detectors for SSC and LHC", Nucl. Instr. and Meth. **A315**, 39 (1992), (with M. Franklin, *et al.*).

2. "Thickness Dependence of the Electrical Characteristics of Chemical Vapor Deposited Diamond Films", Appl. Phys. Lett. **62**, 193 (1994), (with M.A. Plano, *et al.*).

3. "First Measurements with a Diamond Microstrip Detector", Nucl. Instr. and Meth. **A354**, 318 (1995), (with F. Borchelt, *et al.*).

4. "Radiation Hardness Studies of CVD Diamond Detectors", Nucl. Instr. and Meth. **A367**, 207 (1995), (with H. Pernegger, *et al.*).

5. "Low Noise Electronics for the CLEO III Silicon Detector", Nucl. Instr. and Meth. **A383**, 189 (1996), (H. Kagan, *et al.*).

6. "The First Bump-bonded Pixel Detector on CVD Diamond", Nucl. Instr. and Meth. **A436**, 326 (1999), (with W. Adam, *et al.*).

7. "Performance of Irradiated CVD Diamond Micro-strip Sensors", Nucl. Instr. and Meth. **A476**, 706 (2002), (with W. Adam, *et al.*).

8. "Charge-carrier Properties in Synthetic Single-crystal Diamond Measured with the Transient-current Technique", J. Appl. Phys. 97, 073704 (Apr. 2005), (with H. Pernegger *et al.*).

Recent Collaborators:

P. Burchat (Stanford), A. Gorisek (Ljubljana), E. Greismeier (Vienna), M. Mathes (Bonn), M. Mikuz (Ljubljana), H. Pernegger (CERN), B. Petersen (CERN), S. Schnetzer (Rutgers), B. Stone (Rutgers), J. Velthius (Liverpool), P. Weilhammer (CERN), N. Wermes (Bonn). I am also a collaborator of ATLAS, BaBar and RD42.

Current and Pending Support: Harris Kagan

Project/Proposal Title: Research in Elementary Particle Physics, Task D
Source of Support: DOE
Total Award Amount: $663,000
Total Award Period Covered: 12/01/08-11/30/09
Co-PI's: K.K. Gan, R. Kass, K. Honscheid
Status: Current

Project/Proposal Title: ATLAS Optolink Upgrade R&D
Source of Support: DOE
Total Award Amount: $110,000
Total Award Period Covered: 12/01/08-11/30/09
Co-PI's: K.K. Gan, R. Kass
Status: Current

Project/Proposal Title: Radionuclides: Radiation Detection and Quantification
Source of Support: U. of Michigan
Total Award Amount: $368,097
Total Award Period Covered: 9/01/06-7/31/09
Co-PI's: K. Honscheid
Status: Current

Biographical Sketch: Richard Kass

Richard Kass is an experimentalist specializing in high energy physics. As a graduate student at UC Davis he was involved in a series of Fermilab bubble chamber experiments using high energy (100-400 GeV) protons and pions. His Ph. D. thesis research (1977-78) studied 400 GeV proton-proton collisions using the Fermilab 15 foot bubble chamber.

From 1978-1980 Dr. Kass was a postdoctoral researcher for Cornell University stationed at Fermilab. He was a member of E553, a charm search experiment using a neutrino beam. From 1980 to 1983 Dr. Kass was a postdoctoral researcher for the University of Rochester's CLEO group. His CLEO responsibilities included the maintenance and operation of the detector's low pressure cherenkov counters as well as the analysis software used by this system. These devices played a crucial role in the first observation of the decay of the B meson into electrons.

In 1983 Dr. Kass joined the faculty of The Ohio State University. He continued as a member of the CLEO collaboration until 2002. During his time on CLEO he served on every major collaboration committee as well as holding the office of spokesman and analysis coordinator. Along with members of the OSU/CLEO group he made major hardware contributions to three generations of high resolution drift chamber systems, the CLEO II calorimeter electronics readout system, and the CLEO III silicon power supply system. His analysis efforts included the measurement of the lifetime of the τ-lepton, charmed mesons, and charmed baryons in addition to numerous branching ratio measurements.

Dr. Kass was a founding member of both DIAMAS and RD42, two projects with the goal of developing CVD diamond for particle tracking detectors. Since 1998 he has been a member of the ATLAS collaboration and has concentrated his research efforts on the optical readout of the pixel detector. In May of 2002 Dr. Kass became a member of the BaBar collaboration. Dr. Kass presently serves as the DOE Contact/PI for The Ohio State University DOE grant.

Education

1972	State University of New York at Albany	B.S. Physics
1978	University of California, Davis	Ph.D. High Energy Physics

Positions:

1978-1980	Research Associate, Cornell University
1980-1983	Research Associate, University of Rochester
1983-1988	Assistant Professor, The Ohio State University
1988-1992	Associate Professor, The Ohio State University
1992-Present	Professor (Physics), The Ohio State University

Honors:

1976	Earle C. Anthony Fellowship Award
1985	DOE Outstanding Junior Investigator Award
2004	Fellow of the American Physical Society

Other Experience and Professional Service:

1980-2002	Member, CLEO Collaboration
1984-1985	Analysis Coordinator of the CLEO Experiment
1989-1990	Spokesman of the CLEO Experiment
1986	Member of SSC Central Design Group at LBNL
1986-1991	Member of AMY collaboration
1991	Chairman, Organizing Committee, Future Direction in B Physics
1992	Member, Organizing Committee, 2nd Workshop on Tau Lepton Physics
1990-1993	Member of DIAMAS collaboration
1994-Present	Member of RD42
1998-Present	Member of ATLAS
2002-Present	Member of BaBar

Selected Peer-Reviewed Publications:

1. "Measurement of the D^0, D^+, and D_s^+ Meson Lifetimes", Phys. Lett. **B191**, 318 (1987), (with C.Csorna, *et al.*).

2. "Measurement of the Tau Lifetime", Phys. Rev. **D36**, 690 (1987), (with C. Bebek, *et al.*).

3. "Development of Diamond Radiation Detectors for SSC and LHC", Nucl. Instr. and Meth. **A315**, 39 (1992), (with M. Franklin, *et al.*).

4. "First Measurements with a Diamond Microstrip Detector", Nucl. Instr. and Meth. **A354**, 318 (1995), (with F. Borchelt, *et al.*).

5. "Radiation Hardness Studies of CVD Diamond Detectors", Nucl. Instr. and Meth. **A367**, 207 (1995), (with H. Pernegger, *et al.*).

6. "The First Bump-bonded Pixel Detector on CVD Diamond", Nucl. Instr. and Meth. **A436**, 326 (1999), (with W. Adam, *et al.*).

7. "Design and Initial Performance of the CLEO III Silicon Tracker", Nucl. Instr. and Meth. **A473**, 17 (2001), (with E. von Toerne, *et al.*).

8. "Performance of Irradiated CVD Diamond Micro-strip Sensors", Nucl. Instr. and Meth. **A476**, 706 (2002), (with W. Adam, *et al.*).

9. "The Power Supply System of the CLEO III Silicon Detector", Nucl. Instr. and Meth. **A481**, 538 (2002), (with E. von Toerne, *et al.*).

Recent Collaborators:

M. Bruinsma (Irvine), P. Burchat (Stanford), A. Clark (U. Geneva), E. Greismeier (Vienna), T. Lari (Bonn), H. Pernegger (CERN), B. Petersen (Stanford), S. Schnetzer (Rutgers), B. Stone (Rutgers), J. Velthius (Bonn), P. Weilhammer (CERN), N. Wermes (Bonn). I am also a collaborator of ATLAS, BaBar and RD42.

Current and Pending Support: Richard Kass

Project/Proposal Title: Research in Elementary Particle Physics, Task D
Source of Support: DOE
Total Award Amount: $663,000
Total Award Period Covered: 12/01/08-11/30/09
Co-PI's: K.K. Gan, R. Kass, K. Honscheid
Status: Current

Project/Proposal Title: ATLAS Optolink Upgrade R&D
Source of Support: DOE
Total Award Amount: $110,000
Total Award Period Covered: 12/01/08-11/30/09
Co-PI's: K.K. Gan, R. Kass
Status: Current

Biographical Sketch: K.K. Gan

Dr. K.K. Gan is an experimentalist specializing in high energy physics. He did his Ph.D. thesis (1980-5) on the study of the tau lepton using the HRS detector at PEP (SLAC). He maintained the trigger system for the experiment. From 1986-1990 he was a postdoctoral researcher at SLAC as a member of the MARK II experiment at both PEP and SLC. He led the design of the vertex detector trigger for the SLC.

In 1990 Dr. Gan joined the faculty of The Ohio State University. He was a member of the CLEO collaboration until 2002. He led the study of helium based gases for the CLEO III drift chamber. The study demonstrated the feasibility of using helium based gases and consequently the CLEO II drift chamber gas was also switched to a helium based gas. He also led the research and development of the chip carrier board (hybrid) for the CLEO III silicon vertex detector. He observed several rare decays of the tau lepton and set new upper limits on many forbidden decays.

Since 1998 he has been a member of the ATLAS collaboration and led the research efforts on the optical electronics of the pixel detector. In May 2002 Dr. Gan became a member of the BaBar collaboration.

Education

1980	Royal College of Science, Imperial College, London	B.Sc. Physics
1985	Purdue University, Lafayete, Indiana	Ph.D. High Energy Physics

Positions:

1986-1990	Research Associate, Stanford Linear Accelerator Center
1990-1996	Assistant Professor, The Ohio State University
1996-2001	Associate Professor, The Ohio State University
2001-Present	Professor (Physics), The Ohio State University

Honors:

1980	First Class Honours in B.Sc.
1980	Associateship of Royal College of Science
1983	David Ross Fellowship, Purdue University
1991	SSC National Fellowship
1991	DOE Outstanding Junior Investigator Award

Other Experience and Professional Service:

1990-2002	Member, CLEO Collaboration
1991	Member, Organizing Committee, Future Directions in B Physics
1992	Chairman, Organizing Committee, 2nd Workshop on Tau Lepton Physics
1994-2002	Member, Organizing Committee, 3rd, 4th, 5th, 6th and 7th Workshops on Tau Lepton Physics
1994-Present	Member of RD42
1998-Present	Member of ATLAS
2002-Present	Member of BaBar

Selected Peer-Reviewed Publications:

1. "Development of Diamond Radiation Detectors for SSC and LHC", Nucl. Instr. and Meth. **A315**, 39 (1992), (with M. Franklin, *et al.*).

2. "Thickness Dependence of the Electrical Characteristics of Chemical Vapor Deposited Diamond Films", Appl. Phys. Lett. **62**, 193 (1994), (with M.A. Plano, *et al.*).

3. "First Measurements with a Diamond Microstrip Detector", Nucl. Instr. and Meth. **A354**, 318 (1995), (with F. Borchelt, *et al.*).

4. "Radiation Hardness Studies of CVD Diamond Detectors", Nucl. Instr. and Meth. **A367**, 207 (1995), (with H. Pernegger, *et al.*).

5. 'Study of Helium-based Drift Chamber Gases", Nucl. Instr. and Meth. **A374**, 27 (1996), (with K.K. Gan *et al.*).

6. "Low Noise Electronics for the CLEO III Silicon Detector", Nucl. Instr. and Meth. **A383**, 189 (1996), (H. Kagan, *et al.*).

7. "Incorporation of the Statistical Uncertainty in the Background Estimate into the Upper Limit on the Signal", Nucl. Instr. and Methods. **A412**, 475 (1998).

8. "The First Bump-bonded Pixel Detector on CVD Diamond", Nucl. Instr. and Meth. **A436**, 326 (1999), (with W. Adam, *et al.*).

9. "Design and Initial Performance of the CLEO III Silicon Tracker", Nucl. Instr. and Meth. **A473**, 17 (2001), (with E. von Toerne, *et al.*).

10. "Performance of Irradiated CVD Diamond Micro-strip Sensors", Nucl. Instr. and Meth. **A476**, 706 (2002), (with W. Adam, *et al.*).

Recent Collaborators:

M. Bruinsma (Irvine), P. Burchat (Stanford), A. Clark (U. Geneva), E. Greismeier (Vienna), T. Lari (Bonn), H. Pernegger (CERN), B. Petersen (Stanford), S. Schnetzer (Rutgers), B. Stone (Rutgers), J. Velthius (Bonn), P. Weilhammer (CERN), N. Wermes (Bonn). I am also a collaborator of ATLAS, BaBar and RD42.

Current and Pending Support: K.K. Gan

Project/Proposal Title: Research in Elementary Particle Physics, Task D
Source of Support: DOE
Total Award Amount: $663,000
Total Award Period Covered: 12/01/08-11/30/09
Co-PI's: K.K. Gan, R. Kass, K. Honscheid
Status: Current

Project/Proposal Title: ATLAS Optolink Upgrade R&D
Source of Support: DOE
Total Award Amount: $110,000
Total Award Period Covered: 12/01/08-11/30/09
Co-PI's: K.K. Gan, R. Kass
Status: Current

Biographical Sketch: Rainer Wallny

Education

University of Tübingen, Germany	Physics	*Vordiplom*	1992
University of Washington, Seattle, WA	Physics	M.S.	1994
University of Heidelberg, Germany	Physics	*Diplom*	1996
University of Zürich, Switzerland	Physics	Ph.D.	2001

Research and Professional Experience

European Organization for Nuclear Research (CERN)	EP-Division Research Fellow	2001-2003
University of California, Los Angeles, CA	Assistant Professor	2001-2008
University of California, Los Angeles, CA	Associate Professor	2008-present

Academic Prizes and Scholarships

Scholarship awarded by the *'Studienstiftung des deutschen Volkes'*	1989-1996
Visiting Graduate Fellowship awarded by the *"Studienstiftung des deutschen Volkes."*	1992-1993
"Auszeichnung" (distinction) for outstanding scientific work awarded by the University of Zurich.	2001
Outstanding Junior Investigator U.S. Department of Energy	2007

Selected Peer-Reviewed Publications

1. H1 Collaboration, C. Adloff *et al.*, "Deep-inelastic inclusive ep scattering at low x and a determination of α_s", Eur. Phys. J. **C21** 33–61 (2001)

2. F. Campabadal et al., "Beam tests of ATLAS SCT silicon strip detector modules", Nucl. Instrum. Meth. **A538** (2005) 384–407 .

3. A.G. Clark et al., "Design and test of a prototype silicon detector module for ATLAS Semiconductor Tracker endcaps", Nucl. Instrum. Meth. **A538** (2005) 265–280 .

4. R. S. Wallny, "Status and performance of the CDF Run II silicon detector," Nucl. Instrum. Meth. **A546** (2005) 56–59.

5. A. Abdesselam et al., "The barrel modules of the ATLAS semiconductor tracker,", Nucl. Instrum. Meth. **A568** (2006) 642–671 .

6. R. S. Wallny, "Status of diamond detectors and their high energy physics application", Nucl. Instrum. Meth. **A582** (2007) 824–828.

7. A. Abdesselam et al., "The ATLAS semiconductor tracker end-cap module", Nucl. Instrum. Meth. **A575** (2007) 353–389 .

8. A. Sfyrla et al., "Beam Condition Monitoring with Diamonds at CDF", IEEE Trans. Nucl. Sci. **55** (2008) 328–332.

9. CDF Collaboration, A. Abulencia et al., "Precise measurement of the top quark mass in the lepton+jets topology at CDF II", Phys. Rev. Lett. **99** (2007) 182002.

10. A. Ahmad et al., "The Silicon microstrip sensors of the ATLAS semiconductor tracker", Nucl. Instrum. Meth. **A578** (2007) 98–118.

Synergistic Activities

Referee for Nuclear Instruments and Methods.

Recent Collaborators

A. Clark (U Geneva), R. Cousins (UCLA), J. Hauser (UCLA), H. Kagan (OSU/CERN), M. Klein (DESY), M. Lindgren (FNAL), A. Macpherson (CERN/Rutgers), D. Marlow (Princeton), H. Pernegger (CERN), S. Roe (CERN), R. Roser (FNAL), D. Saltzberg (UCLA), S. Schnetzer (Rutgers), D. Stickland (Princeton), U. Straumann (U Zurich), R. Tesarek (FNAL), S. Worm (RAL UK), P. Weilhammer (CERN). I am also a collaborator of CDF, CMS and RD42.

Graduate and Postdoctoral Advisors

F. Eisele (U Heidelberg), H. Kagan (OSU), M. Klein (DESY), S. Roe (CERN), J. Rothberg (U Washington), U. Straumann (U Zurich), P. Weilhammer (CERN).

Ph.D. Thesis and Postdoctoral Advisees

Ph.D. Thesis: M. Donega (U Geneva), P. Dong (UCLA), M. d'Onofrio (U Barcelona), D. Schaffner (UCLA), P. Sievers (SAP). *Postdoctoral:* F. Canelli (U Chicago) ,B. Stelzer (SFU).

Biographical Sketch for Rainer Wallny

Rainer Wallny is an experimentalist specializing in high energy physics. He received a M.S. degree from the University of Washington in 1994 as a visiting graduate student from the University of Tübingen, and a German Diplom Degree from the University of Heidelberg in 1996. For his Ph.D. thesis, he measured the deep inelastic scattering (DIS) ep cross section at low Q^2 and x and extracted the strong coupling constant α_s and the gluon distribution $xg(x, Q^2)$ in the proton using the H1 detector at the HERA collider at DESY, Hamburg, Germany. He received his Ph.D. degree from the University of Zürich, Switzerland, in 2001 with distinction. In 2001-2003, he performed post doctoral work at CERN developing the ATLAS Semiconductor Tracker Endcap Modules. He played a leading role in the module testing in the CERN/University of Geneva group and participated in the test beam and irradiations activities. In 2003, he accepted a position as assistant professor at UCLA and joined the CDF Collaboration at Fermilab. There he lead the CDF Silicon Operations Group from 2003-2004 and the CDF Offline Tracking Group in 2005. His recent research interests have been devoted to studying the properties of the top quark where he performed a precision measurement of the top quark mass and established evidence of electroweak single top production using the CDF detector. He also built a pCVD diamond sensor based beam abort system which has become the default beam abort system of CDF. It is the first system of its kind running at a hadron collider.

Current and Pending Support: Rainer Wallny

A. Current Support

Source of Support:	U.S. Department of Energy
Project Title:	Experimental High Energy Physics-Hadron Collider Physics with CDF and CMS
Award Amount:	$1,033,000
Co-PI's	K. Arisaka, D. Cline, B. Cousins, J. Hauser, D. Saltzberg.
Period Covered:	January 15, 2008 through January 14, 2009
Level of Effort:	Cal 0.00 Acad: 2.50 Sum 2.00
Location:	CERN, Fermilab

Source of Support:	U.S. Department of Energy
Project Title:	OJI: A Beam Condition Monitoring System and Advanced Analysis Techniques at Hadron Colliders
Award Amount:	$150,000
Period Covered:	July 1, 2007 through Jan 14, 2009
Level of Effort:	Cal 0.00 Acad: 1.00 Sum 2.00
Location:	CERN, Fermilab and UCLA

Source of Support:	U.S. Department of Energy
Project Title:	Advanced Detector R&D: Fabrication and Testing of Single Crystal Chemical Vapor Deposition Diamonds for Detector Applications
Award Amount:	$112,000
Period Covered:	July 1, 2006 through June 30, 2009
Level of Effort:	Cal 1.00 Acad: 0.00 Sum 0.00
Location:	CERN, Fermilab.

B. Pending Support

Source of Support:	U.S. Department of Energy
Project Title:	Advanced Detector R&D: Development of Single Crystal Chemical Vapor Deposition (scCVD) Diamonds for Detector Applications *(this proposal)*
Award Amount:	$150,000
Period Covered:	August 1, 2009 through July 31 2011
Level of Effort:	Cal 1.00 Acad: 0.00 Sum 0.00
Location:	CERN.