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Education:

- Ph.D. in Theoretical Particle Physics, Minor in Mathematics. University of Wisconsin–Madison.
- M.S. in Physics. University of Wisconsin–Madison.
- B.S. in Physics and Mathematics. Duke University, Honors Research Thesis, Graduated with Distinction in Physics; Magna Cum Laude.

Academic Positions:

- **Southern Methodist University**, Department of Physics, Theoretical Particle Physics
 Assistant Professor: *1991 - 1996.*
 Associate Professor: *1996 - 2003.*
 Professor: *2003 - present.*
 Dedman Distinguished Professor: *2010 - present.*
 Chair: *2001 - 2007 & 2010 - 2015.*
 President, Faculty Senate: *2009 - 2010.*
- **PITT PACC**, *Associate Member*, University of Pittsburgh Pittsburgh Particle Physics Astrophysics and Cosmology Center. *2017 - Present*
- **CERN**, (*Centre Européen pour la Recherche Nucléaire*) Guest Scientific Associate, Theoretical Physics Group & Atlas Collaboration. *July 2007 - Aug. 2008.*
- **Fermilab**, Visiting Scientist, Theoretical Physics Group. *Sept. 1997 - Aug. 1998.*
- **Superconducting SuperCollider Laboratory**, SSC Fellow 1993-94. Physics Research Group, Guest Scientist. *August 1991 to 1994.*
- **University of Oregon**, Institute of Theoretical Science, Theoretical Particle Physics Group. Postdoctoral Research Fellow.
- **Universität Dortmund**, Institut für Theoretische Physik. Visiting faculty member, guest of Prof. E. A. Paschos. *April–May 1989.*
- **Illinois Institute of Technology**, Theoretical Particle Physics Group. Postdoctoral Research Fellow.

- **University of Wisconsin–Madison**, Theoretical Particle Physics Group. Research Assistant.
- **University of Wisconsin–Madison**, Experimental High Energy Physics Group. Research Assistant. Assisted in the preparation of experiment **E609** at Fermilab.
- **Los Alamos Scientific Laboratory**. Undergraduate Research Assistant, Geophysics Group. Developed computer codes to simulate multiphase fluid flow on CDC 7600 and Cray 1 systems. (*Two summers*)
- **Duke University**, Triangle Universities Nuclear Laboratory. Undergraduate Research Assistant. Performed and analyzed a $^{13}\text{C}(p, \gamma)^{14}\text{N}$ experiment as a portion of Honors Research Thesis.

Awards, Grants, and Fellowships:

- 2023: Initiated DOE Theory grant at SMU in May 1992. Continued funding from 1992 to present, and supplemental funding for CTEQ related activities at Fermilab. Principal Investigator for Theory Task.
- 2023: SURGE - Saturated Glue Topical Collaboration. 5 year DoE supported project. Working group convener: Framework and global analysis.
- 2023: 36 of my papers have been designated as “Very well-known” (100+ citations), and nine of these have been designated as “Renowned” (500+ citations). (Designations based upon citations as recorded in the inSpires database)
- 2020: Received Kosciuszko Foundation fellowship to host Dr. Aleksander Kusina for Spring 2020 at SMU.
- 2017 Robert S. Hyer Research Award, of the Texas Section of the American Physical Society, graduate mentor award together with graduate student Eric Godat. <https://www.aps.org/units/tsaps/awards/hyer/>
- 2015: Hosted & received grant support for the *XXIII International Workshop on Deep-Inelastic Scattering and Related Subjects (DIS2015)* meeting on the SMU campus in April 2015. Supporting agencies included NSF, DOE, BNL, JLab, Fermilab, DESY, & CERN.
- 2010 SMU Dedman Family Distinguished Professor, (Dedman College SMU)
- 2010 DESY Theorist of the Week: March 2010, (Deutsches Elektronen-Synchrotron) Hamburg, Germany
- 2009 SMU Ford Research Fellowship Recipient
- 2007-08 CERN support for research sabbatical in Geneva, Switzerland
- 2006-08: Received DFG (Deutsche Forschungsgemeinschaft) German Research Foundation

fellowship for postdoc Ji-Young Yu.

- 2007 Recipient: Sam Taylor Fellowship.
- 2007 SMU “M” Award: This is the most highly coveted recognition given to students, faculty, staff, and administrators for service to the University.
- 2006 Recipient: University Distinguished Citizen Award.
- 2005: Fellow of the American Physical Society. Elected 2005 “*for significant contributions to understanding nucleon structure and heavy quark production in perturbative quantum chromodynamics.*” Elected membership limited to 1/2% of APS members.
- 2000 Recipient: SMU President’s Associates Outstanding Faculty Award.
- QuarkNet Grant awarded by DOE and NSF to involve local HS teachers with LHC research. 2000-01. Organized a 2-week workshop for 18 teachers, 4-14 June 2001. Workshops held annually through 2019.
www.physics.smu.edu/~olness/quarknet/
- SSC Fellowship, 1993-94. One of 6 Theory Faculty selected in a nation-wide competition.
- TNRLC Grant to CTEQ Collaboration. 1992-1994.
- H.O.P.E. *Honored on Professor Excellence* Distinguished Honoree Award, Spring 2001. Based on teaching excellence, and selected by SMU student Resident Assistants. I also received the HOPE award in both 1999 and 2000.
- SMU University Research Council Faculty Research Grant.
 - 1994: Research visit to CERN, DESY, Moriond, ITEP, Dubna.
 - 1999: Research visit to 13’t H Adron Collider Workshop, Mumbai, India.
 - 2004: Research visit to CERN Les Houches Workshop.
 - 2017: PDF-Lattice QCD conference organization at Oxford University, UK.
 - 2018: KEK Seminar Vist, Tsukuba, Japan, & DIS2019 Workshop, Osaka, Japan.
- SMU Instructional Technology Grant to develop Mathematica tools for the physics curriculum, 1993.

Recent Professional Activities:

- **CTEQ Collaboration** (Coordinated Theoretical-Experimental Project on QCD).
Member, 1992–Present.
Co-Spokesperson, 2010 - 2014. (www.cteq.org)
- **xFitter Developer Team:** Member, Open-source PDF analysis framework.
2013–Present. (xfitter.org)
- **Institutional Representative**, EIC Users Group.
<http://www.eicug.org/>
- **Chair, Award Selection Committee** for the “Guido Altarelli Award.” (2022-Present)
The prize is awarded to a Junior Scientist for an outstanding scientific contribution to the field covered by the DIS Conference series. Chair: 2022-Present. Member: 2015-Present.
- **DoE ECA Review Panel:**, DoE Office of Nuclear Science Early Career Award.
This international panel recommends outstanding early career candidates for DoE ECA funding awards. March 2022. <http://www.doe.gov/>
- **LOC: DIS2024 Workshop:** 2024 International Workshop on Deeply Inelastic Scattering & Related Subjects, **Local Organizing Committee (LOC)**.
Planned for Grenoble, France, April, 2024.
- **DoE Review Panel:**, JLab SoLID (Solenoidal Large Intensity Device) Project.
This project would provide Jefferson Laboratory with a major facility upgrade extending into the next decade. March, 2021. <http://www.jlab.org/>
- **Nominating Committee**, APS GHP: (Group on Hadron Physics). 2021–present.
- **Workshop Organizer**, EIC – CFNS Workshop:
“Physics Opportunities with Heavy Quarkonia at the EIC.” Center for Frontiers in Nuclear Science (CFNS), Stony Brook University, 25–27 October 2021.
- **Workshop Organizer**, EIC – CFNS Workshop:
“Opportunities with Heavy Flavor at the EIC.” Center for Frontiers in Nuclear Science (CFNS), Stony Brook University, 4–6 November 2020.
- **Invited Keynote Lecture**, Jefferson Laboratory, Experimental Hall A&C” Summer Meeting. “Nuclear PDFs & Lepton–Nucleon Scattering,” 16 July 2020.
- **LOC: DIS2020 Workshop:** XXVII International Workshop on Deeply Inelastic Scattering & Related Subjects, **Local Organizing Committee (LOC)**. Brooklyn, New York. 23-27 March 2020, hosted by Stony Brook University. [*Cancelled due to COVID-19.*]
- **Workshop Organizer**, Parton Distribution and Lattice Calculations (PDFLattice 2019)
Michigan State University, Kellogg Biological Station. 25-27 September 2019.
The conference white-paper has been published: **Prog.Part.Nucl.Phys.** 121 (2021) 103908.

- **Editor: DIS Strategy Document for EPPSU**, The DIS International Advisory Committee (IAC) appointed 5 editors representing the DIS community to draft the DIS whitepaper for the European Particle Physics Strategy Update 2020 (EPPSU); I was selected to represent the theory community. [arXiv:1812.08110]
- **Co-Convener: Parton Distribution Functions (PDFs) working group.**
LHeC Physics Programme Study Group, (2014– Present) lhec.web.cern.ch
 - **Workshop Organizer**, Workshop on LHeC/Perle/FCC-he.
IJCLab Orsay, October 26-28.2022
 - **Workshop: Electrons for the LHC - LHeC/FCCeh and Perle Workshop.**
24-25 October 2019, Chavannes de Bogis, & CERN, Geneva Switzerland.
 - **Workshop: Electrons for the LHC - LHeC/FCCeh and Perle Workshop.**
27-29 June 2018, Laboratoire de l'Accélérateur Linéaire (LAL) Orsay, France.
 - **Workshop organization: Workshop on the LHeC and FCC-eh,**
11-13 September 2017, CERN, Geneva, Switzerland.
- **Invited Plenary Speaker**, Electron Ion Collider (EIC) Users Group Meeting, 30 July – 2 August, 2018. The Catholic University of America, Washington DC. *CTEQ and PDFs in the EIC era.*
- **Workshop Organizer**, Parton Distribution and Lattice Calculations in the LHC era.
Oxford University, UK. 22–24 March 2017.
The conference white-paper has been published in
Progress in Particle and Nuclear Physics: 100 (2018) 107-160.
- **Organizing committee, Joint CTEQ and POETIC 7 Meeting**
(7th International Conference on Physics Opportunities at an Electron-Ion-Collider)
Temple University, November 14-18, 2016
- **Deep Inelastic Scattering (DIS) Workshop series:**
Member, **International Advisory Committee (IAC)** 2012-Present.
 - 2023: March 27-31, 2023, MSU, East Lansing, MI, USA.
 - 2022: May 2-6, 2022, Santiago de Compostela, Spain.
 - 2021: April 12–16, 2021, Stony Brook University, NY, USA.
 - 2020: March 23–27, 2020, Stony Brook University, NY, USA. (*Cancelled: Covid-19*)
 - 2019: April 8–12, 2019, University of Torino, Italy.
 - 2018: April 16–20, 2018, University of Kobe, Japan.
 - 2017: April 3–7, 2017, University of Birmingham, UK.
 - 2016: April 11–15, 2016, DESY Laboratory, Hamburg, Germany.
 - 2015: April 27 to May 1, 2015, SMU Dallas, TX, USA.
 - 2014: April 28 to May 2, 2014, Warsaw, Poland.
 - 2013: April 22–26, 2013, Marseilles, France.
 - 2012: March 26–30, 2012, Bonn, Germany.

- **DIS2015: Lead Organizer**, 2015 Deep Inelastic Scattering (DIS) Workshop. Hosted at SMU, Dallas TX, 27 April – 1 May 2015. www.dis2015.org
- **CTEQ Summer School & Workshop:**
Organizing Committee & Lecturer: CTEQ (Coordinated Theoretical-Experimental Project on QCD) Summer School & Workshop. www.cteq.org
 - 2023** CFNS-CTEQ Summer School: 5-19 June, Stony Brook University, NY, USA
 - 2022** CTEQ Summer School: 6-16 July, University of Pittsburgh, PA, USA
 - 2021** CTEQ Summer School: 5-15 September; University Dresden, Germany (*Virtual*)
 - 2020** CTEQ Summer School: University Karlsruhe, Germany (*Cancelled: Covid-19*)
 - 2019** CTEQ Summer School: 16-26 July; University of Pittsburgh, PA, USA
 - 2018** CTEQ Summer School: 18-28 June; University of Mayaguez, Puerto Rico, USA
 - *Also presented PDF tutorial.*
 - 2017** CTEQ Summer School: 18-28 July; University of Pittsburgh, PA, USA
 - *Also presented 4 introductory lectures.*
 - 2016** CTEQ-MCnet Summer School: 6-16 July; DESY Lab, Hamburg, Germany
 - 2015** CTEQ Summer School: 7-17 July; University of Pittsburgh, PA, USA
 - 2014** CTEQ Summer School: 8-18 July; Peking University, Beijing, China
 - 2013** CTEQ Summer School: 7-17 July; University of Pittsburgh, PA, USA
 - 2012** CTEQ Summer School: 30 July-9 August; Lima, Peru
 - *Also presented DIS lectures.*
 - 2011** CTEQ Summer School: 10-20 July; Madison, Wisconsin, USA
 - *Also presented heavy quark lectures.*
 - 2010** CTEQ-MCnet Summer School: 26 July-4 August; Lauterbad, Germany
 - *Also presented 4 introductory lectures.*
 - 2008** CTEQ-MCnet Summer School: 8-16 August; Debrecen, Hungary.
- Session Convener: XIX International Workshop on Deep-Inelastic Scattering and Related Subjects (DIS 2011) April 11-15, 2011. Newport News, VA USA
- DESY “Theorist of the Week,” March 2010, Helmholtz Alliance, DESY, Hamburg Germany
- Organized and instructed SMU QuarkNet workshop for local High School science teachers. 2001-2017, 2022.
- Dallas Regional Science Fair.
 - Co-Director (2000-2017);
 - Committee Member (2017–Present).
1000+ seventh through twelfth grade students from Dallas (TEA Region 10) schools will be judged by 300+ judges from area businesses, professional organizations and schools. www.DallasScienceFair.org
- “Mathematica for Physics” has been translated into Japanese [ISBN 4-89471-162-1], and the 2nd edition [ISBN 0-201-53796-6] was released in 2002.

Teaching Experience:

- **2017 Robert S. Hyer Research Award**, of the Texas Section of the American Physical Society, graduate mentor award together with graduate student Eric Godat.
<https://www.aps.org/units/tsaps/awards/hyer/>
- **Outstanding Faculty Award:** My receipt of the 2000 SMU President's Associates Outstanding Faculty Award was based on both my teaching and research performance.
- **H.O.P.E. Distinguished Honoree Award:** Spring 2001. I also received a H.O.P.E. (Honored on Professor Excellence) Award in both 1999 and 2000. Recipients are selected, based upon teaching excellence, by the SMU student RA's.
- **Music & Physics Course:** In 2000, I developed a novel physics course (PHYS 1320, Music & Physics) in collaboration with Professor Tom Tunks of the Meadows School of Music. This course is popular with the Meadows music students.
- **The Secret City: Los Alamos and the Atomic Age:** In collaboration with Prof. James Hopkins (History), I developed new course for the 2006 Taos Cultural Institute. *"This was the most stimulating and interesting cultural course I've ever taken, and I will encourage my friends to take it next year. I absolutely loved every minute!"*
Nancy Dedman, participant in the 2006 Los Alamos course.
- **Southern Methodist University:** *Fall 1991 - Present.*
General Physics 1303 & 1304, 1403 & 1404, Music & Physics 1320, Cosmology & Astrophysics 3368, Methods of Theoretical Physics 4321, Electromagnetism 4392, Solid State Physics 5337, Graduate Classical Mechanics 6321, Particle Physics 7360, Quantum Field Theory 7314.
Median score of teaching evaluations by students are consistently 9 or 10 on a scale of 10 (old system), or 3 or 4 on a scale of 4 (new system).
- **University of Oregon:** *Fall Term 1989.*
General Physics: Newtonian Mechanics. Enrollment of 208 students; 4 lectures and 2 help sessions per week; supervised 3 graduate teaching assistants; wrote exams and quizzes.
Based on formal university survey, received outstanding recommendations from students: rated 4.22 of 5.00; 12 year department average, 3.68 of 5.00.
- **University of Wisconsin–Madison:** *Fall 1980 - Spring 1982.*
Teaching Assistant for 4 semesters in General Physics. Taught 4 one hour recitations and 2 three hour labs per week. Approximately 20 students per class.

Personal Diversions:

- Special presentations of *A Physics Circus*, *Music and Physics: A Harmonic Function*, and lectures on *The Group Theory of Rubik's Cube*. Perform baroque and classical trumpet solos for weddings and other events; play with a brass ensemble. Perform piccolo trumpet solos for church services and weddings including services at SMU's Perkins Chapel.

Graduate Student Supervision at SMU:

- Director, Graduate Physics Program, 1995-98. I recruited graduate students for our program, and also coordinated the program for the enrolled students.
- B. Alex King, M.S. (1994). Projects: Matrix elements for radiative τ decay ($\tau \rightarrow \nu_\tau \mu \nu_\mu e^+ e^-$) with FORM and FeynCalc, and Mathematica.
- Guoheng Wei, M.S. (1995). Projects: Mathematica Mathlink interface and associated investigations for CTEQ2 PDF code. (M.S. Thesis with Stroynowski.)
- Guanyao Bao, M.S. (1995). Projects: Mathematica notebooks and associated investigations for CTEQ3 PDF code.
- Ge Li, M.S. (1995). Projects: Miscellaneous Mathematica based topics.
- Jian Wang, M.S. (1997). Projects: Choice of initial parameterizations of PDF's for global analysis. (Sec. 2E, hep-ph/9706470)
- Wanjun Yu, M.S. (1997). $\{x, Q^2\}$ Kinematic Maps for PDF's. (hep-ph/9706470)
- Michael Harris, M.S. (1997). Projects: Miscellaneous Mathematica based topics.
- Elena Magar, (1999-2000). Projects: Mathematica notebooks and associated investigations for CTEQ4 PDF code.
- Tamara Trout, (2000-01). Projects: Mathematica notebooks and associated investigations for CTEQ5 PDF code. $d\sigma/dP_T$ investigations for neutrino DIS charm production.
- Jack Daeschler, (2001-02). NLO calculations for heavy quarks at Tevatron Run II.
- Yon Cole, M.S. (2006). Projects: Spin-dependent structure functions (g_1) in the asymptotic region.
- Director, Physics MS Program (2014–2018). Supervised our terminal MS program and served on the committees for: Nourah Abdulrahman Allothman (2016), Ashwaq Nasser Albalawi (2017), Aish M. Somily (2018).
- Benjamin Clark, Ph.D. (2010-2016) W/Z Distributions at the LHC for Proton and Nuclear Beams
- Eric Godat, Ph.D. (2013-2018) A Study Of The Impact Of pPb W/Z Data On nCTEQ15 PDF Parton Distribution Functions (PDFs).
- Jesse Kent. (2017–2022) nCTEQ PDF topics.
- Lucas Kotz. (2020) EIC & xFitter PDF topics.
- Brandon Stevenson. (2020) EIC & xFitter PDF topics.
- Rebecca Moore (2021) EIC & xFitter PDF topics.
- Cole Billingsley (2022) EIC & xFitter PDF topics.

Director, SMU Summer STEM Research Program: (2017–2020)

SMU Summer STEM Research Program is an intensive summer research program for students in STEM fields. This program was initiated by Professor Olness in 2017. The program provides intensive research experience, and this is highly desirable for scholarship applications and graduate school applications. Programs include:

- The University of Glasgow, Scotland. 2017–2020.
- The University of Aberdeen, Scotland. 2019–2020.
- University of Dublin, Ireland. 2019–20.

The program incorporates the **SMU Engaged Learning (EL)** initiative which helps students develop a significant and sophisticated understanding of disciplinary knowledge by putting it into practice while a student at SMU.

Recent Engaged Learning mentored students include:

- Micah Oxner (2019-2020) U. Aberdeen. Project: *Breast Cancer Biology Research*.
- Avery Wacker (2019-2020) U. Glasgow. Project: *Mesophiles And Thermophiles In The Urban Environment*.
- Pooja Tewari: (2018-20) U. Glasgow. Project: *Glasgow Viruses and Bacteria in Freshwater: A Historical Record of Past Pollution?*
- Elena Skaribas: (2018-19) U. Glasgow. Project: *Glasgow Autism And Intersubject Correlation Of Brain Activity While Watching Dance*.
- Nicole Rueb: (2017-18) U. Glasgow. Project: *Using Caenorhabditis elegans as a Model Organism for Genetic Screens*.
- Tolulope Salako: (2017-18). U Glasgow. Project: *fMRI for neurofeedback of brain state during listening to music*.
- Theresa Lam: (2017-18) U. Glasgow. Project: *Viruses in freshwater*.

Undergraduate Student Supervision at SMU:

- **Xixi Zhou (2019-20)** Robert Mayer Interdisciplinary Research Fellowship Program. Project: *Study of Bassoon Tone Quality from Acoustic Analyses*. Supervised by Prof. Olness & Pawel Wnuk (Professor of Practice in Bassoon).
- I have organized trips for our physics majors to visit national laboratory facilities including Fermilab (Chicago), SLAC & LBL (San Francisco), and BNL (New York).
- I often teach 3000 level majors courses (including Phys 3320 Music & Physics). This gives me a chance to work with the majors in a small group setting including developing their computational skills using Mathematica and other computer tools.

- Undergraduate Physics Co-Advisor, 1998-2001. During the period 1998-2001, I increased the number of physics majors from 4 to 12. This group of physics students was of exceptional quality, and included seven SMU President's Scholars in their ranks.* Additionally, Alonso Gutierrez and Michael Shearn were selected in a national competition to receive a prestigious Goldwater Scholarship. Additionally, in 2012 Alonso Gutierrez was selected to receive the SMU Emerging Leader Award.

Memberships, Review and Editorial Activities:

- Member of the Coordinated Theoretical/Experimental Project on Quantitative QCD (CTEQ) collaboration
Member: (1991–Present).
Co-Spokesperson (2010–2014).
- Member of the xFitter Developer Team
(2013–Present). <http://www.xfitter.org>
- Member and SMU Institutional Representative, Electron Ion Collider (EIC) Users Group.
(2017–Present). <http://eicug.org>
- Member, Deep Inelastic Scattering (DIS) Workshop series International Advisory Committee (IAC) 2012-Present.
- Referee for:
The Physical Review
Physics Letters B
European Physics Letters
Advances in High Energy Physics
Zeitschrift für Physik C
Computer Physics Communications
Addison-Wesley Publishing Co.
John Wiley & Sons Inc. Publishing Co.
- Reviewer for:
Department of Energy
National Science Foundation
U.S. Civilian Research & Development Foundation
- *Memberships:*
Sigma Xi Scientific Research Society;
American Physical Society;
American Institute of Physics.
American Association for the Advancement of Science (AAAS) i

* Anne Burnham, Alonso Gutierrez, April Kramer, Chad Myers, Michael Shearn, Shannon Thornton, and Clifford Yapp.

University Service and Committees:

Arranged in approximate chronological order.

- Academic Research Computing Steering Committee. 1994-95
- Director of Graduate Studies in Physics. 1995-1997
- Director of Undergraduate Studies in Physics. 1998-2001
- Commission on Teaching and Learning—Center for Teaching Excellence. 2000-2003, and 2006.
- Dedman College Undergraduate Council. 2000
- Strategic Plan for Informational Technology: Academic and Research Computing. 2001
- SMU Faculty Senate; member 2001-2007;
Senate Executive Committee (2001-2003);
Finance Committee (2001-2007).
- Academic and Research Computing Committee (ARCC). (2002-2007)
Chair (2004-2006).
- University Committee on Informational Technology (UCIT) (2004-2006).
- Dedman College Tenure and Promotion Committee (2003-2005).
- Dedman College Dean's Search Committee (2005-06)
- Upper-class President's Scholars Review Panel (2003-2007).
- Advisor, Dean's Scholars Program (2005-2007).
- School of Engineering Tenure and Promotion Committee (2006-2007).
- Chair, AVP for Research and Dean of Graduate Studies committee (2006-2007).
- APEC, Biology Department Review Panel, 2008-2009.
- SMU Faculty Senate; member 2008-2011;
Senate Executive Committee (2008-2011);
President Elect, (2008-2009).
President, (2009-2010).
Past-President, (2010-2011).

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- Chair, Faculty Senate Research Committee, (2010-2012).
- APEC, Chemistry Department Review Panel, 2011-2012.
- Chair, Department of Physics. 2001–2007, 2010–2015.
- Member, “Second Century Campus Master Plan” Oversight Committee, 2014–2015.
- Member, Operational Excellence for the 2nd Century (OE2C) Travel Initiative Committee. 2014-2015.
- Member, Operational Excellence for the 2nd Century (OE2C) Travel Implementation Team (w/ Concur) 2015.
- Meadows Tenure and Promotion Committee (2015-2016).
- Faculty Representative: SMU Board of Trustees Building & Grounds Committee. 2013–2016:
- Co-Chair, Campaign Steering Committee for Faculty and Staff, 2012–2015.
- Member, Simmons School Dean’s Search Committee, 2016–2017.
- Director, Physics MS program. 2014–2018.
- Director and faculty adviser, SMU STEM Summer Research Program. 2016-2020.
- Mentor, SMU Engaged Learning Projects: 7 students: 2017-2020
- Member, SMU Education Abroad Council. 2017–2020.
- Member, SMU Senate Ad-Hoc Committee: (SMU Senate Membership issues). 2019.
- Member, SMU Colonial Group Survey Committee. 2019-20.
- Co-Chair, Faculty & Staff Giving Campaign Committee. 2015–2022.
- Faculty Representative, SMU Pony Power Leadership Committee. 2017–2022.

Books:

- *Mathematica for Physics*, First edition. ISBN 0-201-53796-6. By Robert Zimmerman & Fredrick Olness, published by Addison-Wesley, Reading, MA (1994). Foreword by Stephen Wolfram, creator of Mathematica.
- *Mathematica for Physics*, Japanese translation. ISBN4-89471-162-1.
- *Mathematica For Physics: 2nd Edition*. ISBN 0-201-53796-6. By Robert Zimmerman & Fredrick Olness, published by Addison-Wesley, Reading, MA (2002). Foreword by Stephen Wolfram, creator of Mathematica. The second edition is expanded to include a wider variety of topics in more depth.

This is a textbook designed to incorporate the computer algebra program Mathematica into the core physics curriculum. This book includes solved examples of classic physics problems which will inspire the student to reproduce, modify, and experiment with them. Topics include: Mechanics, Electromagnetism, Quantum Mechanics, Relativity and Cosmology Oscillating Systems, Non-Linear Systems, Discrete Dynamical Systems, Lagrangians and Hamiltonians, and Orbiting Bodies.

An electronic supplement complements the text, and is available at www.physcs.smu.edu/olness

Publications:

Arranged in chronological order.

- 1) *Constraints on the Right W -Boson Mass in Non-Manifest Left-Right Gauge Theories*, with M. E. Ebel; *Physical Review* **D30**, 1034 (1984).
- 2) *Constraints on the Higgs Boson Masses in Left-Right Electroweak Gauge Theories*, with M. E. Ebel; *Physical Review* **D32**, 1769 (1985).
- 3) *Constraints on Extended Electroweak Theories*,
Ph.D. Thesis, University Microfilm Inc. (UMI) 85-19780-mc, (1985).
- 4) *Factorization of Helicity Amplitudes in Electroweak Processes*, with W.-K. Tung; *Physical Review* **D35**, 833 (1987).
- 5) *Probing the Tri-Boson Coupling in High-Energy Vector Boson Pair Production*, with W.-K. Tung; *Physics Letters* **B179**, 269 (1986).
- 6) *Probing the Tri-Boson Coupling in High-Energy Vector Boson Pair Production and the Factorization of Helicity Amplitudes*, with W.-K. Tung. Presented at 1986 Workshop at the University of Wisconsin-Madison; *Physics Simulations at High Energy*, (ed., V. Barger *et al.*), p. 614, (1986).
- 7) *Strongly Interacting Particles from Cygnus X-3*, with J. C. Collins. Invited talk at 23rd Int. Conf. on High Energy Physics, Berkeley, CA, July 16-23, 1986; *Proc. of the XXIII Int. Conf. on High Energy Physics*, (ed., S. C. Loken), p. 1325, (1987).

- 8) *Probing The W - Z Higgs Sector Of Electroweak Gauge Theories At The Superconducting Super Collider*, with J. F. Gunion, *et al.*, 1986 Summer Study at Snowmass, Colorado, 1986;
Proc. of 1986 Summer Study on the Physics of the Superconducting SuperCollider, (ed., R. Donaldson and J. Marx), p. 142 (1987).
- 9) *Intrinsic Polarization of the High-Energy W-Boson Structure Functions*, with J. P. Ralston. 1986 Summer Study at Snowmass, Colorado, 1986;
Proc. of 1986 Summer Study on the Physics of the Superconducting SuperCollider, (ed., R. Donaldson and J. Marx), p. 191 (1987).
- 10) *A Precise Formulation of the Effective-Vector-Boson Method for High Energy Collisions*, with P. W. Johnson and W.-K. Tung. 1986 Summer Study at Snowmass, Colorado;
Proc. of 1986 Summer Study on the Physics of the Superconducting SuperCollider, (ed., R. Donaldson and J. Marx), p. 164 (1987).
- 11) *Production and Detection at SSC of Higgs Bosons in Left-Right Symmetric Theories*, with J. F. Gunion, B. Kayser, R. N. Mohapatra, N. G. Deshpande, J. Grifols, A. Mendez, P. B. Pal. 1986 Summer Study at Snowmass, Colorado;
Proc. of 1986 Summer Study on the Physics of the Superconducting SuperCollider, (ed., R. Donaldson and J. Marx), p. 197 (1987).
- 12) *New Physics from Cygnus X-3*, with J. C. Collins.
Physics Letters **B187**, 376 (1987).
- 13) *The Effective-Vector-Boson Method for High Energy Collisions*, with P. W. Johnson and W.-K. Tung. Presented at *1987 DFP Meeting, Salt Lake City, Utah, January 1987*.
Physical Review **D36**, 291 (1987).
- 14) *Small-x Physics at SSC and the Tevatron*, with W.-K. Tung.
Int. Journal of Modern Physics **A2**, 1413 (1987).
- 15) *Is the Left-Right Higgs Sector Observable?*, with J. Gunion and A. Mendez.
Int. Journal of Modern Physics **A2**, 1085 (1987).
- 16) *Contribution of Transverse Gauge Bosons to Higgs Production and the Equivalent Vector Boson Approximation*, with R. M. Godbole.
Int. Journal of Modern Physics **A2**, 1025 (1987).
- 17) *Charged Higgs Production Cross-Section and Heavy Quark Mass Effects in the QCD-Improved Parton Model*, with W.-K. Tung.
Nuclear Physics **B308**, 813 (1988).
- 18) *Minijets and B-Pairs: Analytic and Numeric Results for Small-x Dominated Processes*, with J. C. Collins and S. Lomatch.
Nuclear Physics **B317**, 617 (1989).

- 19) *When is a Heavy Quark not a Parton?*, with Wu-Ki Tung. Proceedings of the 1988 Lake Louise Winter Institute, Lake Louise, Alberta, Canada, March 1988.
Quantum Chromodynamics: Theory and Experiment, (ed. B. Campbell et. al), p. 515 (1988).
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- 207) **nCTEQ Collaboration:** R. Ruiz, et al., “Target mass corrections in lepton-nucleus DIS: theory and applications to nuclear PDFs,” arXiv:2301.07715 [hep-ph]. (2023).

Conference & Summer School Presentation & Organization:[†]

Arranged in reverse chronological order.

- INTERNATIONAL WORKSHOP ON DEEP-INELASTIC SCATTERING (DIS):
International Advisory Committee (IAC) 2012 - Present.
 - 2023 DIS: MSU, East Lansing, MI, 26-31 March 2023.
 - 2022 DIS: Santiago de Compostela, Spain. May 2-6, 2022.
 - 2021 DIS: Virtual Meeting: Stony Brook University, NY, USA
 - 2020 DIS: Stony Brook University, NY, USA (*Cancelled: Covid-19*)
 - 2019 DIS: University of Torino, Italy
 - 2018 DIS: Kobe University, Japan
 - 2017 DIS: University of Birmingham, UK
 - 2016 DIS: DESY, Hamburg, Germany
 - 2015 DIS: SMU, Dallas, TX (*Lead Organizer*)
 - 2014 DIS: Warsaw, Poland
 - 2013 DIS: Marseille, France
 - 2012 DIS: Bonn, Germany

 - CTEQ SUMMER SCHOOL & WORKSHOP ON QCD AND ELECTROWEAK PHENOMENOLOGY:
Chair, CTEQ Organizing committee (2012–Present),
 - 2023: 5-19 June, Stony Brook University, Stony Brook, NY, USA
 - 2022: 6-16 July, University of Pittsburgh, PA, USA
 - 2021:* 5-15 September, Dresden, Germany (*Virtual*)
 - 2020:* August, Karlsruhe Institute of Technology, Karlsruhe, Germany (*Cancelled: Covid-19*)
 - 2019: July 16-26, University of Pittsburgh, Pittsburgh, PA.
 - 2018: June 18-28, University of Puerto Rico, Mayaguez.
Presenting xFitter Tutorial session
 - 2017: July 18-28, University of Pittsburgh, Pittsburgh, PA.
Presented 4 introductory lectures
 - 2016:* July 6-16, Joint DESY–MCnet–CTEQ School, Hamburg, Germany
 - 2015: July 7-18, University of Pittsburgh, Pittsburgh, PA.
 - 2014: July 8-18, Peking University, Beijing, China
 - 2013: July 7-17, University of Pittsburgh, Pittsburgh, PA. 2012: July 30– August 9, Pontifical Catholic University of Peru, Lima, Peru
Presented DIS lectures
 - 2011: July 10-20, University of Wisconsin, Madison, WI.
Presented Heavy Quark lectures
 - 2010:* July 26–August 4, Joint MCnet–CTEQ School; Lauterbad (Black Forest), Germany
Presented 4 introductory lectures
 - 2008:* August 8-16, Joint MCnet–CTEQ School; Debrecen, Hungary
- *Joint with MCnet Collaboration.

[†] Published presentations are listed in the publications list.

- **2023 SURGE KICK-OFF MEETING:**
SURGE - Saturated Glue Topical Collaboration. 27 January 2023. Online.
“Framework and global analysis: report.”
- **2022 CTEQ FALL MEETING:**
14-15 November 2022. Fermilab, Batavia, IL, USA.
Summer School Report.
- **2022 FANTOMAS4QCD WORKSHOP:**
Fantomas4QCD Workshop, 31 October – 4 November 2022. Illinois Institute of Technology, Chicago, IL, USA.
- **2022 WORKSHOP LOC:**
Local Organizing Committee: 2022 Texas TACOS (Theoretical Astroparticle and Cosmology Symposium), SMU Campus. 10-11 October 2022.
- **2022 WORKSHOP LOC:**
Local Organizing Committee: SMU 2022 Fast Machine Learning for Science Workshop, SMU Campus, 3-6 October 2022.
- **2022 MIT WORKSHOP:**
Theory for EIC in the next decade. 20-22 September 2022. Massachusetts Institute of Technology Cambridge, MA, USA.
“A Wish List: Nuclear PDFs at the EIC; From PDFs to the underlying QCD characteristics.”
- **2022 CFNS WORKSHOP:**
Precision QCD predictions for ep Physics at the EIC. 1-5 August 2022. Center for Frontiers in Nuclear Science (CFNS). Stony Brook University, Stony Brook, NY, USA.
“Progress in Precision Nuclear PDFs; From PDFs to the underlying QCD characteristics.”
- **2022 JLAB WORKSHOP:**
High Energy Workshop Series 2022: Science at Mid x: Anti-shadowing and the Role of the Sea. 22-23 July 2022. Jefferson Lab, Newport News, VA, USA.
“Anti-Shadowing and Nuclear PDF Challenges: opportunities from a upgraded facility.”
- **2022 AAPM:**
SMU Local Organizing Committee Liason. Hosted the American Association of Physicists in Medicine (AAPM) on the SMU campus. 7-12 June 2022.
- **2022 TAMU MITCHELL CONFERENCE:**
Collider, Dark Matter, and Neutrino Physics 2022, 24-27 May 2022, Mitchell Institute, Texas AM University, College Station, TX.
“Revealing the fundamental character of the strong force.”
- **2022 IMP SPRING MEETING:**
Institute for Research in Fundamental Sciences (IMP) 2022 Spring meeting. Tehran, Iran. 10-12 May 2022.
“Projects and Progress with xFitter.”
- **2022 XFITTER WORKSHOP:**
xFitter workshop, IJC-Lab, Orsay, Paris, France. 9-11 March 2022.

- “ A resource and reference document for the Snowmass study.”
- 2022 SNOWMASS EF06 PDF MEETING:
EF06: QCD and strong interactions: Hadronic structure and forward QCD, Online. 26 January 2022.
“Nuclear PDFs.”
 - 2021 RIKEN BNL WORKSHOP:
Small-x Physics in the EIC Era. 15 December 2021.
“Global analyses within the small-x resummation collinear approach.”
 - 2021 CFNS WORKSHOP ORGANIZER:
Physics Opportunities with Heavy Quarkonia at the EIC.” Workshop Organizing Committee
Center for Frontiers in Nuclear Science (CFNS), Stony Brook University. 25–27 October 2021.
 - 2021 APS DNP WORKSHOP:
2021 Fall Meeting of the APS Division of Nuclear Physics. 12 October 2021.
“Progress in Precision Nuclear PDFs.”
 - 2021 APS GHP WORKSHOP:
9th Workshop of the APS Topical Group on Hadronic Physics. 15 April 2021.
“Progress in Nuclear PDFs.”
 - 2021 SNOWMASS STUDY:
EIC opportunities for Snowmass. 25-29 January 2021.
“Improved constraints on nPDFs with nCTEQ.”
 - 2021 SNOWMASS STUDY:
EIC opportunities for Snowmass. 25-29 January 2021.
“Charm as a probe for strangeness at the EIC.”
 - 2020 CERN WORKSHOP:
Perceiving the Emergence of Hadron Mass through AMBER@CERN. 30 November to 4 December 2020.
“xFitter: From nucleon to meson PDF fits.” On behalf of the xFitter collaboration.
 - 2020 SNOWMASS STUDY:
Joint EF05/EF06 Topical Group: 11 November 2020. “Future of nuclear PDFs: nCTEQ perspective.”
 - 2020 CFNS WORKSHOP ORGANIZER:
Opportunities with Heavy Flavor at the EIC. Workshop Organizing Committee
Center for Frontiers in Nuclear Science (CFNS), Stony Brook University. November 4-6, 2020.
 - 2020 SNOWMASS STUDY:
EF05 Topical Group: 12 October 2020. “PDFs, α_S and Low-x Physics and at Future DIS Facilities: LHeC/FCC-eh.” on behalf of the LHeC and FCC-eh study groups.
 - 2020 EIC YELLOW REPORT WORKSHOP:
Inclusive Reactions Group 04 August 2020.
“Update: Tools for PDF and Structure Functions ... LHAPDF Grids, Mathematica Notebooks ...”
A joint presentation by Fred Olness, Lucas Kotz, Brandon Stevenson.

- **2020 INVITED KEYNOTE:**
Invited Keynote Lecture: Jefferson Lab, *Experimental Hall A & C Summer Meeting*. 16 July 2020.
“Nuclear PDFs & Lepton–Nucleon Scattering.”
- **2020 SNOWMASS STUDY:**
EF05 Topical Group: 7–8 July 2020. “Precision QCD at future DIS facilities with focus on PDFs at LHeC, FCC-he, ...” Presented on behalf of the LHeC Study Group.
- **2020 EIC YELLOW REPORT WORKSHOP:**
Inclusive Reactions Group 23 June 2020.
“Tools for PDF and Structure Functions .. ManeParse, Python Jupyter, ...”
- **2020 CFNS WORKSHOP:**
Workshop on Pion and Kaon Structure Functions at the EIC xFitter.
2–5 June 2020. “From nucleon to meson PDF fits ... a cooperative presentation & discussion”
with Aurore Courtoy, Tim Hobbs, Pavel Nadolsky, Fred Olness
- **2020 SNOWMASS STUDY:**
EF06 Topical Group:
20 May 2020. “nCTEQ: Proton and Nuclear PDFs.”
- **2020 EIC YELLOW REPORT WORKSHOP:**
Jets and Heavy Flavor Physics Group.
20 April 2020. “nCTEQ Wish List: Preparing for the EIC.”
- **2020 nCTEQ WORKSHOP:**
Jefferson National Laboratory (JLab), Newport News, VA. 30 March–3 April 2020. (*Cancelled: Covid-19*)
- **DIS2020:**
28th International Workshop on Deep Inelastic Scattering and Related Topics.
Brooklyn, New York, hosted by Stony Brook University/ 23–27 March 2020. (*Cancelled: Covid-19*)
- **2020 EIC WORKSHOP:**
1st EIC Yellow Report Workshop at Temple University.
Temple University, Philadelphia, PA. 19–21 March 2020.
“nCTEQ Wish List: ... how do we make sure the EIC can cover all we want/need.”
- **2020 HEAVY FLAVOR WORKSHOP:**
2020 Santa Fe Jets and Heavy Flavor Workshop, Hosted by Los Alamos National Laboratory. February 3–5, 2020 Santa Fe, NM. “Improved constraints on PDFs from heavy flavor measurement production.”
- **2019 LPC WORKSHOP:**
Fermilab, Batavia, IL. 13–15 November 2019.
LPC Workshop on Physics Connections between the LHC and EIC.
“PDFs Flavor Determination & Nuclear PDFs: Challenges and Opportunities for QCD.”
- **EINN2019:**
13th European Research Conference on Electromagnetic Interactions with Nucleons and Nuclei
27 October–02 November 2019, Paphos, Cyprus.

Invited Plenary Presentation: “Overview of PDFs in the LHC era: What are the challenges & opportunities.”

- **2019 LHeC/FCCeh AND PERLE WORKSHOP:**
Chavannes de Bogis & CERN, Geneva, Switzerland. 24-25 October 2019.
PDF Sub-Group Co-Convener
- **2019 CTEQ WORKSHOP:**
Michigan State University, Kellogg Biological Station, 27-28 September 2019.
“nCTEQ and PDFs at LHC Challenges and Opportunities for QCD”
- **PDFLATTICE2019: PDF & LATTICE WORKSHOP:**
Organizing committee, Parton Distributions & Lattice QCD Workshop,
Michigan State University, Kellogg Biological Station, 25-27 September 2019.
- **POETIC 2019:**
Lawrence Berkeley Laboratory, Berkeley, CA. 16-21 September 2019.
“Precision QCD at the LHeC and the FCC-eh What are the challenges & opportunities.”
- **EICUGM19:** Electron - Ion Collider User Group Meeting 2019,
Ecole Nationale Supérieure de Chimie, 22-26 July 2019.
“nCTEQ PDF Update What are the challenges & opportunities with an EIC.”
- **IS2019:**
Initial Stages 2019 (IS2019): Physics of the initial stages of high energy nuclear collisions: Hosted at
Columbia University, New York City June 24-28, 2019
Poster: “Precision QCD with the LHeC and the FCC-eh.”
- **PHENO2019:**
Phenomenology 2019 Symposium, 13-15 May 2019, University of Pittsburgh, Pittsburgh, PA.
“nCTEQ and PDFs at the LHC Challenges & Opportunities for QCD.”
- **DIS2019 WORKSHOP:**
XXVII International Workshop on Deep Inelastic Scattering and Related Subjects,
Torino, Italy 8-12 April 2019.
“nCTEQ PDFs and the strange PDF at LHC.”
- **DIS2019 WORKSHOP:**
XXVII International Workshop on Deep Inelastic Scattering and Related Subjects,
Torino, Italy 8-12 April 2019.
“Recent QCD results from the xFitter project.”
- **2019 xFITTER WORKSHOP:**
xFitter workshop in Minsk, Belarus. 18-20 March 2019.
“Charm Charged Current Production.”
- **LANL PROGRAM REVIEW COMMITTEE:** *LDRD Progress Appraisal 20170073DR*, Los Alamos
National Lab, Los Alamos, NM.
14-15 February 2019.

- **JETSCAPE 2019:**
JETSCAPE Winter School and Workshop,
Texas A&M University, January 9-13, 2019.
Invited Plenary Presentation: “Nuclear Correction and the nCTEQ PDFs: Progress, Puzzles, and Challenges.”
- **2018 CTEQ-JLAB MINI-WORKSHOP:**
Parton distributions as a bridge from low to high energies.
8-10 November 2018, JLab, Newport News, VA.
“The nPDF ‘To Do’ List ... Parton Distributions as a Bridge from Low to High Energies.”
- **INSTITUTE FOR NUCLEAR THEORY WORKSHOP:**
Probing Nucleons and Nuclei in High Energy Collisions INT Workshop INT-18-3 October 22-26, 2018.
Invited Presentation: “The nCTEQ PDFs: Improved PDF precision with eA measurements.”
- **INSTITUTE FOR NUCLEAR THEORY WORKSHOP:**
Probing Nucleons and Nuclei in High Energy Collisions INT Workshop INT-18-3 October 22-26, 2018.
Workshop Discussion Leader: Topics: Shadowing and anti-shadowing: what can we learn at the EIC? Connection between cold and hot nuclear matter E-loss? Jets vs. charged hadron studies, pros and cons?
- **EICUGM18:**
Electron - Ion Collider User Group Meeting 2018,
Catholic University of America, Washington DC, 30 July - 3 August, 2018.
Invited Plenary Presentation: “CTEQ and PDFs in the EIC era.”
- **EICUGM18:**
Electron - Ion Collider User Group Meeting 2018,
Catholic University of America, Washington DC, 30 July - 3 August, 2018.
Invited Parallel Presentation: “Report on nCTEQ nuclear PDFs.”
- **2018 LHeC/FCCeh AND PERLE WORKSHOP:**
LAL/IPN Orsay, France. 27-29 June 2018.
PDF Sub-Group Co-Convener
- **2018 MITCHELL CONFERENCE:**
2018 Mitchell Conference on Collider, Dark Matter, and Neutrino Physics.
The Mitchell Institute, Texas A&M University, College Station, TX. 21-23 May 2018.
Invited Plenary Presentation: “Precision QCD as a window for future discoveries.”
- **DIS2018 WORKSHOP:**
XXVI International Workshop on Deep Inelastic Scattering and Related Subjects,
Kobe, Japan, 16-20 April 2018.
“PDF Flavor Determination and the nCTEQ15 PDFs.”
- **DIS2018 WORKSHOP:**
XXVI International Workshop on Deep Inelastic Scattering and Related Subjects,
Kobe, Japan, 16-20 April 2018.
“Recent QCD results from the xFitter project.”

- **DIS2018 WORKSHOP:**
XXVI International Workshop on Deep Inelastic Scattering and Related Subjects,
Kobe, Japan, 16-20 April 2018.
“Visualizing sensitivity of hadronic experiments to the nucleon structure.”
- **2018 xFITTER WORKSHOP:**
xFitter Meeting in Krakow, Poland. Krakow University of Technology. 4–7 March 2018.
“xFitter Beyond LHC.”
- **2018 HEAVY FLAVOR WORKSHOP:**
2018 Santa Fe Jets and Heavy Flavor Workshop, Hosted by Los Alamos National Laboratory. January
29-31, 2018 Santa Fe, NM.
“PDF flavor determination and the nCTEQ15 PDFs.”
- **2017 CTEQ MINI-WORKSHOP:**
Fermilab, Batavia, IL. 19-20 October 2017.
“The LHeC and FCC-eh Colliders Workshop at CERN: and other thoughts & ideas.”
- **INSTITUTE FOR NUCLEAR THEORY WORKSHOP:**
The Flavor Structure of Nucleon Sea. INT Workshop INT-17-68W October 2-13, 2017.
Invited Presentation: “PDF Flavor Determination.”
- **2017 LHeC AND FCC-eh WORKSHOP:**
CERN, Geneva, Switzerland, 11-13 September 2017.
“PDF Flavor Determination: Updates from nCTEQ and xFitter.”
- **2017 DIVISION OF PARTICLES AND FIELDS (DPF):**
Fermilab, Batavia, IL. July 31 – August 4, 2017.
“PDF Flavor Determination with LHC W/Z production.”
- **LHC AND THE STANDARD MODEL: PHYSICS AND TOOLS:**
CERN, Geneva, Switzerland, 12 June 2017 to 7 July 2017.
“PDF Flavor Determination with LHC W/Z production.”
- **ATLAS COLLABORATION: ATLAS Standard Model Group**
Mini-workshop on QCD Scale Choices. CERN, Geneva, Switzerland, 4 May 2017.
Invited Vidyo Presentation: “Theoretical Jet Uncertainties”
- **DIS2017:** 25th International Workshop on Deep Inelastic Scattering and Related Topics. University
of Birmingham, 3-7 April 2017.
“xFitter Project: an Open Source QCD Fit framework.”
- **DIS2017:** 25th International Workshop on Deep Inelastic Scattering and Related Topics. University
of Birmingham, 3-7 April 2017.
“LHC and its impact on nCTEQ15 PDFs: updates from the nCTEQ collaboration.”
- **PDFLATTICE2017: PDF & LATTICE WORKSHOP:**
Organizing committee, Parton Distributions & Lattice QCD Workshop,
Balliol College, Oxford, UK. 22 - 24 March 2017.

- **2017 xFITTER WORKSHOP:**
xFitter Meeting in Oxford, UK. St Hilda's College, Oxford, UK 19 - 22 March 2017.
Invited Presentation: "PDF Flavor Determination."
- **INSTITUTE FOR NUCLEAR THEORY WORKSHOP:**
Probing QCD in Photon-Nucleus Interactions at RHIC and LHC: the Path to EIC (INT-17-65W)
February 13 - 17, 2017.
Invited Presentation: "nCTEQ PDFs and heavy quarks"
- **JOINT CTEQ MEETING AND POETIC 7:**
(7th International Conference on Physics Opportunities at an ElecTron-Ion-Collider)
Member, Organizing committee, Temple University, November 14-18, 2016
Invited Presentation: "The xFitter Project: an open source QCD fit framework."
- **UKC016:**
US-Korea Conference (UKC) Invited lecture:
If the Higgs Boson is the answer ..., Theory Update. Arlington, TX 12 August 2016.
- **KITP WORKSHOP: LHC Run II and the Precision Frontier**
Kavli Institute for Theoretical Physics, UC Santa Barbara. March 21 - April 8, 2016.
- **PDF4LHC 2016: Parton Distribution Function Uncertainties and Nuclear Corrections for the LHC,**
PDF4LHC Workshop, 14 March 2016, CERN, Geneva Switzerland.
- **2016 X-FITTER WORKSHOP:**
Working group meeting, 18-20 February 2016, Dubna, Moscow, Russia.
Invited presentation: "nCTEQ15 Nuclear PDFs"
Invited presentation: "Heavy Flavors"
- **2016 HEAVY FLAVOR WORKSHOP:**
Invited presentation on: *Precision QCD: Working with heavy quarks at High Scales & High Orders.*
Santa Fe Jets and Heavy Flavor Workshop, 11-13 January 2016.
- **CTEQ: CTEQ Collaboration Meeting**
Collaboration presentation.
Fermilab, Batavia, IL. November 5-7, 2015.
- **2015 TXAPS: Texas APS 2015 Fall Meeting.**
Invited judge for student presentation awards.
Baylor University, Waco, Texas. October 29-31, 2015
- **INT WORKSHOP: Institute for Nuclear Theory (INT) Workshop**
Invited presentation on: *Working with heavy quarks at High Scales & High Orders.*
Intersections of BSM Phenomenology and QCD for New Physics Searches Precision QCD for New Physics Searches. INT, University of Washington, Seattle. September 14 - October 23, 2015.
- **POETIC6: The 6th edition of the International Conference on the "Physics Opportunities at an ElecTron-Ion Collider."**
Invited presentation on: *Frontiers of QCD with Precision nPDFs What lessons can we extract from the*

last 20 years?

Ecole Polytechnique, Palaiseau, France. September 7–11, 2015.

- **QCD@LHC 2015 WORKSHOP:**
Convener, *Heavy Quarks* session.
1-5 September 2015 Queen Mary University of London
- **DPS2015:** 2015 Meeting of the APS Division of Particles and Fields.
Invited presentation on: *Precision QCD for New Physics Searches: Working with heavy quarks at High Scales & High Orders.*
University of Michigan, Ann Arbor, MI. August 4-8, 2015.
- **2015 LHeC PHYSICS PROGRAMME STUDY:**
Invited presentation on: “Parton Distributions and the LH(e)C” LHeC Workshop. 24-26 June 2015.
Chavannes-de-Bogis, Geneva, Switzerland.
- **DIS2015: INTERNATIONAL WORKSHOP ON DEEP-INELASTIC SCATTERING AND RELATED SUBJECTS:**
Chair and Lead Organizer: SMU, Dallas, TX.
Organized & hosted the DIS2015 international meeting on the SMU campus.
Chaired both the *Physics Program Committee (PPC)* and the *Local Organizing Committee (LOC)*.
- **ANNUAL MEETING OF THE FUTURE CIRCULAR COLLIDER STUDY:**
Invited presentation on: “The LHeC: Progress and Challenges for QCD.”
23-27 March 2015, Washington D.C. (USA)
- **DESY-CTEQ SCHOOL & WORKSHOP:**
Proton Structure in the LHC Era - School and Workshop
Conference organizer and speaker.
“Which number of flavours to use for which data? Flavour separation and Strange PDFs.”
29 September 2014 to 02 October 2014, DESY, Hamburg, Germany
- **GUNIONFEST:**
“PDFs: From Effective W’s to LHC and Beyond,” Symposium in honor of Prof. John (Jack) Gunion;
March 28-29, 2014. University of California Davis
- **LHeC WORKSHOP:**
Invited plenary presentation:
“Parton Distributions and the LH(e)C” LHeC Workshop. 20-21 January 2014. Chavannes-de-Bogis, Geneva, Switzerland.
- **AFTER WORKSHOP:**
Invited workshop presentation:
Introduction to (n)PDF fits. Probing the Strong Interaction at A Fixed Target Experiment with the LHC beams, 12-17 January 2014, Ecole de Physique des Houches, Les Houches, France.
- **HERA FITTER:** 2014 Presentations at working group meeting.
17 March 2014

- 27 May 2014.
- **27TH TEXAS SYMPOSIUM ON RELATIVISTIC ASTROPHYSICS:** ,
Organizing committee,
Dallas December 8 - 13, 2013. Hosted by UT Dallas.
 - **CTEQ WORKSHOP:**
Organizing committee,
Workshop on QCD Tools for LHC Physics: From 8 to 14 TeV "What's needed and why?", 14-15 November,
2013 Fermilab, Batavia, Illinois, USA.
 - **QCD@LHC 2013:**
Conference Summary Presentation:
Sept. 2-6, 2013, DESY, Hamburg, Germany
 - **LOOPFEST2013:**
Participant. LoopFest XII, 13-15 May 2013, The Florida State University, Tallahassee, Florida.
 - **SNOWMASS STUDY2013:**
QCD @FSU, Community Summer Study 2013, 16 May 2013, The Florida State University, Tallahassee,
Florida.
 - **PHENO2013:**
Participant. Phenomenology 2013 Symposium, 6-8 May 2013, University of Pittsburgh, Pittsburgh, PA.
 - **RPP 2013:**
Invited Review Talk:
QCD Review, 16 January 2013.
Rencontres de Physique des Particules (RPP) 2013, Laboratoire de Physique Subatomique et de
Cosmologie (LPSC), Grenoble, France.
 - **HERA FITTER:** 2013 Presentations at working group meeting.
29 January 2013
27 February 2013
26 March 2013
28 May 2013
7 August 2013
9 September 2013
16 October 2013
 - **LCWS12:** *Heavy Quark Production at Higher Orders: Extrapolation from the massless result.*, 25
October 2012. The 2012 International Workshop on Future Linear Colliders (LCWS12), University of
Texas at Arlington.
Presented conference talk & also workshop organizer. 22-26 October, Arlington, TX.
 - **QCD @ LHC 2012:** *Nuclear PDFs*, 29 August 2012.
20-24 August, 2012, Michigan State University, East Lansing, MI.
 - **DIS 2012:** *ACOT at N3LO*, 28 March 2012

- XX International Workshop on Deep-Inelastic Scattering and Related Subjects (DIS 2012)
Bonn, Germany, 26-30 March 2012
- SFB/TR9: MINI-WORKSHOP IN KARLSRUHE: *CTEQ parton distribution functions*.
19-21 March 2012, Karlsruhe, Germany
 - HERA FITTER: *Update on the ACOT Calculations for HERA-Fitter*.
HERA Fitter Collaboration Meeting, Feb. 13-14, 2012. Marseilles, France.
 - PROSA COLLABORATION: Presentations & participation at working group meeting.
18 July 2012
30 August 2012
 - HERA FITTER: 2012 Presentations at working group meeting.
27 November, 2012
29 October, 2012
17 September, 2012
01 August, 2012
27 June, 2012
23 May, 2012
18 April, 2012
14 March, 2012
 - $p\bar{p}$ WORKSHOP: *Antiproton Drell-Yan Issues and Opportunities*, 18 November 2011.
Antiproton Physics at the Intensity Frontier Workshop, Fermilab, Nov. 18, 2011, Batavia, IL.
 - CTEQ/LPC WORKSHOP: PDF Session Organizer, 17 November 2011,
Confronting Theory with Experiment: Puzzles, Challenges and Opportunities in the LHC Era, Fermilab
17-18 November 2011. Batavia, IL.
 - MINER ν A COLLABORATION: *PDF Issues for MINER ν A*, 16 November 2011,
MINER ν A Collaboration, Fermilab, Batavia, IL.
 - TEXAS APS MEETING: *Benchmark processes at LHC*, 7 October 2011,
2011 Fall Joint Meeting Texas Section of APS and AAPT and Zone 13 SPS. October 06-08, 2011.
Commerce, TX
 - RINGBERG WORKSHOP: *Survey of Heavy Quark Theory Approaches for PDF Analysis*, 26 Sept.
2011, Ringberg Workshop: New Trends in HERA Physics 2011. September 25-28, 2011. Ringberg Castle,
Tegernsee, Germany.
 - GGI WORKSHOP: *Parton Distribution Function*, Sept. 16,
GGI Workshop QCD after the start of the LHC.
September 5-23, 2011, Galileo Galilei Institute, Florence, Italy.
 - LOOPFEST 2011: *PDF Issues*, 12 May 2011,
LoopFest X, Northwestern University, Evanston, IL, May 12-14, 2011.
 - DIS 2011: *Heavy Flavors Session Summary (Working Group 5)*, 15 April 2011,

XIX International Workshop on Deep-Inelastic Scattering and Related Subjects (DIS 2011) April 11-15, 2011, Newport News, VA USA.

- HERA FITTER: 2011 Presentations at working group meeting.
12 December, 2011
23 November, 2011
19 October, 2011
13 February, 2011
- LPNHE WORKSHOP, PARIS: *Precision control of the LHC partonic beams using the combined LHC and Tevatron data. The role of future DIS initiatives (NuSONG, CERN-SPS, HERA, eRHIC), Challenges for Precision Physics at the LHC*, 15-18 December 2010, LPNHE, Paris.
17 December 2010.
- CTEQ-LPC WORKSHOP: Organizing committee. *Standard Model Benchmarks at the Tevatron and LHC*, 19-20 November 2010, Fermilab.
- JLAB HI- x 2010 WORKSHOP: *Nuclear parton distributions, 3rd International Workshop on Nucleon Structure at Large Bjorken x* , October 13-15, 2010 Jefferson Lab Newport News, Virginia
14 October 2010.
- SEATTLE INT WORKSHOP: *Parton distributions for the LHC Gluons and the Quark Sea at High Energies: Distributions, Polarization, Tomography, September 13 - November 19, 2010*. Institute for Nuclear Theory, Seattle Washington.
15 September 2010
- ATLAS WORKSHOP: Invited Workshop Presentation: Fourth ATLAS Physics Workshop of the Americas August 9 - 11, 2010. *Are we ready to make discoveries at the LHC? W/Z/Higgs Production at the LHC & PDF Uncertainties*, UTA Arlington, TX,
August 9, 2010.,
- LOOPEFEST IX: *Heavy Quarks in PDFs, LoopFest IX: Radiative Corrections for the LHC and Lepton Colliders*, SUNY Stony Brook, June 21-23, 2010.
23 June 2010.
- LAPTH WORKSHOP, ANNECY, FRANCE: *A Global Analysis of Nuclear PDFs and the Heavy Quark Components, Workshop on nuclear Parton Distribution Functions*, 22-23 February 2010 LAPTH, Annecy, France.
23 February 2010.

Presentations prior to 2010 are available upon request

Seminar, Colloquium, and Public Lectures

Arranged in reverse chronological order.

- **2022 MUENSTER COLLOQUIUM:**
 WWU Münster Institut für Theoretische Physik. 7 April 2022.
The nCTEQ Project: Revealing the fundamental character of the strong force.
- **2022 PUBLIC LECTURE:** Saint Michael and All Angels, Dallas, TX, USA. 7 November 2022,
 “Perspectives On Faith, Science, And Deciphering The Universe.”
- **2022 PHYSICS CIRCUS PRESENTATIONS:**
 3 December 2022: *SMU College Access Programs* Contact: Erica Fayson.
 7 December 2022: *Club Hill Elementary 5th Grade*, (Garland, TX)
 Contact: Jessica Gordon , Julie Kneedler.
 7 December 2022: *Zion Lutheran Church and School*, (Dallas, TX) Contact: Bruce Boehne.
- **BAYLOR COLLOQUIUM:**
Nuclear PDFs & the Electron Ion Collider: From Quarks to Hadrons.
 Baylor University, Waco, Texas. 15 January 2020.
- **2020 PHYSICS CIRCUS PRESENTATIONS:**
 May 2020: *Club Hill Elementary 5th Grade*, (Garland, TX) *cancelled due to covid-19.*
 May 2020: *Zion Lutheran Church and School*, (Dallas, TX) *cancelled due to covid-19.*
- **LANL SEMINAR:** *PDFs Flavor Determination and the nCTEQ PDFs Challenges and Opportunities for QCD*, Los Alamos National Lab, Los Alamos, NM.
 13 February 2019.
- **2019 PHYSICS CIRCUS PRESENTATIONS:**
 22 May 2019: *Club Hill Elementary 5th Grade*, (Garland, TX)
 [Contact: Julie Kneedler Email: jakneedl@garlandisd.net]
 9 May 2019: *Zion Lutheran Church and School*, (Dallas, TX)
 [Contact: Bruce Boehne Email:bruceboehne@netscape.net]
 7 December 2019: *SMU STEM Day*, Upward Bound & Upward Bound Math Science.
 [Contact: Erica Fayson, Director, Upward Bound Math & Science, SMU College Access Programs]
- **ARGONNE HEP SEMINAR:**
 Argonne National Laboratory, Chicago, IL.
 HEP Seminar: 15 October 2018.
 “PDF Flavor Determination and the nCTEQ PDFs”
- **JAPAN KEK THEORY SEMINAR:**
 The Japan High Energy Accelerator Research Organization (KEK), Tsukuba, Japan.
 Theory Seminar: 13 April 2018.
 “Nuclear PDF Flavor Determination with nCTEQ”
- **JINR, KRAKOW THEORY SEMINAR:**
 Joint Institute for Nuclear Research, Krakow, Poland.

Theory Seminar: 14 March 2018.

“PDF Flavor Determination”

- **2018 SPS PHYSICS PRESENTATIONS::**
Society of Physics Students (SPS).
18 September 2018: *Thinking outside the 3-D box: a visit to hyperspace and higher dimensions.*
14 November 2018: *Music & Physics:* (w/ Prof. Tom Tunks)
- **2018 PHYSICS CIRCUS PRESENTATIONS::**
21 May 2018: *Club Hill Elementary 5th Grade*, (Garland, TX)
[Contact: Julie Kneedler Email: jakneedl@garlandisd.net]
21 May 2018: *Zion Lutheran Church and School*, (Dallas, TX)
[Contact: Bruce Boehne Email:bruceboehne@netscape.net]
1 December 2018: *SMU STEM Day*, Upward Bound & Upward Bound Math Science.
[Contact: Erica Fayson, Director, Upward Bound Math & Science, SMU College Access Programs]
18 December 2018: *Centerville Elementary School*, (Garland, TX).
[Contact: Oliva Tarkington, MS, NCC, LPC, Counselor. OTarkington@garlandisd.net]
18 December 2018: *Northlake Elementary School*, (Garland, TX).
[Contact:Blair Donnell, brdonnel@garlandisd.net]
- **SMU PUBLIC ECLIPSE VIEWING:**
SMU Physics Department hosts the “Great American Solar Eclipse 2017 viewing.” 21 August 2017.
<http://blog.smu.edu/research/2017/08/23/total-eclipse-first-day-school/>
- **PENN STATE THEORY SEMINAR:**
State College, PA 24 April 2017.
“Precision QCD at the LHC: challenges and opportunities updates from the nCTEQ collaboration.”
- **2017 PHYSICS CIRCUS PRESENTATIONS::**
10 October 2017: *Northlake Elementary*, (Garland, TX). [Contact: Blair Donnell, brdonnel@garlandisd.net]
18 May 2017: *Centerville Elementary School*, (Garland, TX) [Contact: Olivia Hester]
18 May 2017: *Club Hill Elementary 5th Grade*, (Garland, TX) [Contact: Amy Rule]
18 May 2017: *Zion Lutheran Church and School*, (Dallas, TX) [Contact: Bruce Boehne]
- **MANCHESTER THEORY SEMINAR:**
University of Manchester, Manchester, UK. 22 April 2016.
“Things that go bump in the data: Working with heavy quarks at High Scales & High Orders.”
- **UVA COLLOQUIUM:**
Things that go bump in the data: QCD Puzzles, Predictions, and Prognoses.
University of Virginia, Charlottesville, VA. 29 January 2016.
- **2016 PHYSICS CIRCUS PRESENTATIONS::**
11 November 2016: *SMU Womens Basketball Game*, (Moody Coliseum) [Contact: Trae Roberts]
14 May 2016: *SMU QuarkNet Program*, (Dallas, TX) [Contact: Simon Dalley]
12 May 2016: *Centerville Elementary School*, (Garland, TX) [Contact: Olivia Hester]
12 May 2016: *Club Hill Elementary 5th Grade*, (Garland, TX) [Contact: Amy Rule]

12 May 2016: *Zion Lutheran Church and School*, (Dallas, TX) [Contact: Bruce Boehne]

- FERMILAB SEMINAR:

Precision QCD for LHC New Physics Searches: Working with heavy quarks at High Scales & High Orders.
Fermilab, Batavia, IL. 30 July 2015.

As part of the Fermilab summer visitors program: 20-31 July 2015.

- DIS2015 PUBLIC LECTURE: Organizer: 26 April 2015.

If the universe is the answer, what is the question.

Guest Speakers: Prof. Joseph Izen (UT-Dallas), Prof. Patrick Skubic (Oklahoma), Prof. Chris Jackson (UT-Arlington), Prof. Stephen Sekula (SMU).

- 2015 PHYSICS SYMPOSIUM: Symposium Organizer: 12 April 2015.

Through a Cosmos Darkly The quest to Shine Light on a Dark Universe.

Astrophysics, Cosmology, and Dark Matters: Guest Speakers: Prof. Jodi Cooley (SMU), Prof. Robert Kehoe (SMU), Prof. Mustapha Ishak-Boushaki (UTD).

- BAYLOR COLLOQUIUM:

If the Higgs is the answer ...: What's next for the LHC in the upcoming Run 2.

Baylor University, Waco, Texas. 1 April 2015.

- ORSAY LABORATOIRE:

Divisional Seminar: *Progress & Challenges for QCD*

Le Laboratoire de l'Accélérateur Linéaire (LAL) Orsay, 4 February 2015.

- LHeC PHYSICS PROGRAMME STUDY:

PDF Working Group Report

20 January 2015. (Reported at CERN remotely)

- 2015 PHYSICS CIRCUS PRESENTATIONS::

14 May 2015: *Club Hill Elementary*, (Garland, TX) [Contact: Olivia Hester]

14 May 2015: *Zion Lutheran Church and School*, (Dallas, TX) [Contact: Bruce Boehne]

17 December 2015: *Trinity Basin Preparatory*, (Dallas, TX) [Contact: Hannah Moore (SMU Alum)]

- 2014 LIGHTNER SYMPOSIUM: Symposium Organizer & Speaker. 13 April 2014.

Symmetries in Science & Symphonies. Guest Speakers: Prof. Tom Tunks (SMU), Prof. Fredrick Olness (SMU), Prof. Ira Greenberg (SMU), Prof. Martin Sweidel (SMU), Prof. Scott Douglas (SMU),

- HIGHLAND PARK MIDDLE SCHOOL: Career Day Presentation: *From Imagination to Discovery:*

The Large Hadron Collider Project, 22 November 2013.

- HIGGS CELEBRATION:: *Celebrating Discovery of the Higgs Boson & Recent Advances in Particle*

Physics, Participant, w/ congress visits, Hosted by the APS DPF, Washington, DC, November 20, 2013

- SMU QUARKNET: SMU QuarkNet Program, Guest lecture: *Special and General Relativity*, August

6, 2013.

- 2014 PHYSICS CIRCUS PRESENTATIONS:: 8 August 2014: *SMU Physics QuarkNet Program &*

UT-Southwestern STARS Program, (Garland, TX)

22 May 2014: *Club Hill Elementary*, (Garland, TX)
 08 February 2014: *Grand Prairie Independent School District*, Valerie Thomas,
 21 May 2013: *Club Hill Elementary*, (Garland, TX)
 18 May 2012: *Club Hill Elementary*, (Garland, TX)
 17 August 2012: *The Science/Engineering Magnet High School*, (Dallas ISD)
 8 March, 2012, *Reed Middle School*, (Duncanville, TX)

- CFB3333 GUEST LECTURE: Physics 3333/CFB3333/KNW2333: The Scientific Method - Critical and Creative Thinking Topic: *The Flat Earth*, November 30, 2011
 April 20, 2012
 May 3, 2013
 April 21, 2014
 October 27, 2014
- 2013 LIGHTNER SYMPOSIUM: Symposium Organizer. 7 April 2013.
 Symposium in celebration of the Higgs Boson. Guest Speakers: Prof. Stephen Sekula (SMU), Prof. Patrick Skubic (Oklahoma), Prof. Kaushik De (UTA), Prof. Ryszard Stroynowski (SMU).
- SMU LIBRARY TABLES OF CONTENT:: Annual SMU Library Annual Literati Award Dinner, Table host; topic: *The Higgs Boson*, March 23, 2013
- HIGHLAND PARK MIDDLE SCHOOL: Special Mathematics Presentation: (Host: Ms. Sarah Haigler) *The Shape of Space: Thinking Outside 3-Dimensions*, 20 February 2013.
- SMU SIMMONS SCHOOL WORKSHOP: *The importance of mathematics in STEM education and development*, 15 Feb. 2013.
 SMU Simmons School Workshop: *Bridging Research & Practice: Explore, Participate, Engage*,
- SMU INTERDISCIPLINARY SEMINAR: Organizer. Math: Prof. Daniel Reynolds; Chemistry: Prof. Dieter Cremer; Biology: Prof. John Wise; Physics: Prof. Stephen Sekula; April 30, 2012.
- CFB3333 GUEST LECTURE: Physics 3333/CFB3333/KNW2333: The Scientific Method - Critical and Creative Thinking Topic: *The Flat Earth*, April 20, 2012.
- 2012 LIGHTNER SYMPOSIUM: Symposium Organizer. 15 April 2012.
 Guest Speaker: Prof. Craig Hogan (Fermilab/U. Chicago)
- CPM 2012 @FNAL: Snowmass2013 pre-meeting. *Participant*, Fermilab, Batavia, IL. 10-12 October
- SMU CTE: *Team Teaching*, w/ Prof. Tom Tunks.
 16 August 2012, SMU Center for Teaching Excellence (CTE) Symposium presentation.
- UNT: Colloquium: *Higgs on the Horizon, A collection of interesting puzzles for the LHC*, January 24, 2012. Denton, TX.
- UT-DALLAS: Colloquium: *Higgs on the Horizon, A collection of interesting puzzles for the LHC*, November 9, 2011. Dallas, TX.

- LIGHTNER SYMPOSIUM: Symposium Organizer. 28 April 2011.
Guest Speaker: Prof. Frank Wilczek (MIT).
- TX A&M COMMERCE: Colloquium: *How Strange is the Proton? A collection of interesting puzzles for the LHC*, January 27, 2011. Commerce TX.
- DESY SEMINAR: *Implementing the ACOT scheme in QCDNUM*, DESY, Hamburg Germany.
January 13, 2011,
- HIGHLAND PARK MIDDLE SCHOOL: Career Day Presentation: *From Imagination to Discovery: The Large Hadron Collider Project*, 12 November 2010.
- SMU TOWN & GOWN: Public Lecture Presentation: *From Imagination to Discovery: The Large Hadron Collider Project*, 10 October 2010.
- DESY “THEORIST OF THE WEEK” PRESENTATION: *W/Z/Higgs Production at LHC and PDF Uncertainties*, DESY Theorist of the Week Program, 8-12 March 2010. DESY, Hamburg Germany.
8 March 2010.
- BAYLOR COLLOQUIUM: *How Strange is the Proton? A collection of interesting puzzles for the LHC*, Department of Physics, Baylor University, Waco, TX
10 February 2010.
- MAINZ SEMINAR: *Are we ready to make discoveries at the LHC? W/Z/Higgs Production at the LHC & PDF Uncertainties*, Johannes Gutenberg University Mainz, Mainz, Germany.
January 13, 2010.
- MAINZ COLLOQUIUM: *How Strange is the Proton? A collection of interesting puzzles for the LHC*, Johannes Gutenberg University Mainz, Mainz, Germany.
January 12, 2010.

A listing of Seminar and Colloquium Presentations prior to 2010 is available upon request.