Curriculum Vitae

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Education

- **Pennsylvania State University, State College, USA** **1994-1999**
  Ph.D. in Physics, 1999
  Thesis title: "*Color fluctuations in hadrons and photons and scattering off nuclei",*
  Advisor: Prof. M. Strikman

- **St. Petersburg State University, St. Petersburg, Russia** **1988-1993**
  Bachelor of Science in Physics, 1993

Professional Experience

- **Thomas Jefferson National Accelerator Facility (Jefferson Lab), Newport News, VA, USA** **2007-present**
  Theory Postdoctoral Fellow

- **Ruhr-Universität Bochum (RUB), Germany** **2002-2007**
  Postdoctoral Researcher

- **Subatomic Structure of Matter (CSSM), Adelaide University, Australia** **2002-2002**
  Postdoctoral Fellow

- **Pennsylvania State University, State College, USA** **1998-1999**
  Research Assistant

- **Pennsylvania State University, State College, USA** **1994-1998**
  Teaching Assistant

Teaching Experience

- Lecturer at HUGS 2011: 26th Annual Hampton University Graduate Studies Program, Jefferson Lab, Newport News, Virginia, Lectures' title *"Nuclear effects in high energy scattering"* **May 31-June 17, 2011**

- Manager/Coordinator of HUGS 2010: 25th Annual Hampton University Graduate Studies Program, Jefferson Lab, Newport News, Virginia **June 1-18, 2010**

- Manager/Coordinator and Lecturer of HUGS 2009: 24th Annual Hampton University Graduate Studies Program, Jefferson Lab, Newport News, Virginia **June 1-19, 2009**

- Instructor for undergraduate-level recitations in Quantum Mechanics, Ruhr-Universität Bochum, Germany **Fall 2003**

- Instructor for undergraduate-level physics laboratories and recitations, Penn State University, State College, USA **1994-1998**

Supervision of Students

- M. Siddikov, *DVCS on nucleons and nuclei*, Ph.D. dissertation, Ruhr-Universität Bochum, Germany **2008**

- T. Teckentrup, *A new parameterization of generalized parton distributions and description of DVCS data*, Diploma (undergraduate thesis) Ruhr-Universität Bochum, Germany **2006**

- T. Nieberg, *Unitarity limit in high energy scattering,* Diploma (undergraduate thesis), Ruhr-Universität Bochum, Germany **2003**

Awards

- Duncan Gate Fellowship, Penn State University **1998**

- Braddock Graduate Fellowship, Penn State University **1996**

Collaborations and Projects

- Scientific coordinator of topic "Imaging QCD Matter" of **Sept.-Nov. 2010**
  INT Program "Gluons and quark sea at high energy: distributions, polarization, tomography", Institute for Nuclear Theory, Seattle

- Convener of eA Working Group of **August 2007- present**
  the Electron-Ion Collider (EIC) Collaboration,

Research

Primary Research Interests

- High-energy nuclear physics and QCD:
  - hard processes (in particular, deep inelastic scattering) with nuclei
  - nuclear quark and gluon (parton) distributions at small x and nuclear shadowing
  - generalized parton distributions (GPDs) of nuclei and the nucleon
  - saturation and black disk limit in high-energy scattering
  - dipole models of high-energy scattering
  - modification of properties of bound nucleons in nuclei.

- Theoretical support of experimental programs of Jefferson Lab at 6 and 12 GeV, a future Electron-Ion Collider (EIC) and the LHeC project at CERN; applications to the RHIC, LHC and DESY (HERMES, H1 and ZEUS) physics programs.

Main Obtained Results

- Development of a theory of leading twist nuclear shadowing for nuclear parton distributions (PDFs), nuclear diffractive parton distributions and nuclear generalized parton distributions (GPDs).

- First theoretical calculation of leading twist nuclear parton distributions at small x using their connection with proton diffractive parton distributions.

- First theoretical calculation of leading twist nuclear diffractive PDFs and nuclear GPDs at small x.

- Application of the obtained nuclear parton distributions to predict novel small-x nuclear effects, which can be experimentally studied at the Relativistic Heavy Ion Collider (RHIC), the Large Hadron Collider (LHC), a future Electron-Ion Collider (EIC), and LHeC (the project to add an electron beam to the existing LHC).

The following results have been obtained:

- We observed that at RHIC, the suppression of hadron production in forward deuteron-nucleus scattering compared to the proton-proton scattering is stronger than usually assumed; we demonstrated that the standard leading twist nuclear shadowing cannot be responsible for the suppression.

- Predictions for nuclear quark and gluon parton distributions (PDFs) and structure functions for a wide range of nuclei for $10^{-5} \leq x \leq 0.9$ and $4\ \text{GeV}^2 \leq Q^2 \leq 10{,}000\ \text{GeV}^2$; we predict significant suppression of nuclear PDFs for $10^{-5} \leq x \leq 0.05$, which is followed by some enhancement (antishadowing) for $0.05 \leq x \leq 0.2$.

- The characteristic feature of our predictions is that nuclear shadowing in the gluon channel is larger than that in the quark one.

- Predictions for nuclear diffractive parton distributions and structure functions (both coherent and incoherent).

- Prediction of significant QCD factorization breaking in hadron-nucleus scattering at RHIC and the LHC.

- Predictions for the inclusive and tagged deuteron structure functions (polarized and unpolarized) and the role of nuclear shadowing and antishadowing in the extraction of the neutron structure function (at an EIC).

- Predictions for photoproproduction of heavy vector mesons on nuclei in ultra-peripheral nucleus-nucleus collisions at the LHC.

- First theoretical predictions for the role of nuclear shadowing and antishadowing in deep inelastic scattering on polarized nuclei: ^{3}He and ^{3}H, ^{7}Li and ^{7}Be, ^{6}LiD.

- First theoretical predictions for the spin-dependent structure function of ^{3}He including the effects of nuclear shadowing and antishadowing, non-nucleonic (Δ resonance) degrees of freedom and Fermi motion of nucleons and the extraction of the neutron spin structure function g_1 using the Bjorken sum rule.

- Prediction of the divergence of the Gottfried sum rule for the non-singlet structure function of the ^{3}He – ^{3}H system due to the nuclear shadowing effect.

- Development of a new method to calculate the leading twist hard coherent diffraction in hadron-nucleus processes and demonstration of factorization breaking due to soft multiple interactions;

a comparison of hard diffractive and electromagnetic (ultra-peripheral) mechanisms of hard coherent production of two jets in proton-nucleus scattering relevant for RHIC and the LHC.

- An estimate of electromagnetic (ultra-peripheral) and strong contributions to soft coherent inelastic diffraction at RHIC in the dAu $\rightarrow$ X Au reaction. We showed that the electromagnetic contribution dominates and the corresponding cross section is large.

• Prediction/reinforcement of the existence of a new ultra high-energy regime of the strong interactions – the so-called black disk limit (BDL) – and formulation of specific model independent signals of its onset:

- Derivation of model-independent expressions for the nuclear structure functions measured in deep inelastic scattering (DIS) with heavy nuclei.

- Prediction of the disappearance of approximate Bjorken scaling and dramatic taming of the growth of the structure functions at small x.

- Predicted of dramatic depletion of the spectrum of leading hadrons as a consequence of the change in the dynamics of fragmentation.

- Predictions for the diffractive structure functions and the spectrum of diffractive final states.

- Derivation of the expression for exclusive vector meson electroproduction;
prediction that in the black disk limit, the cross section for longitudinal photons behaves as $1/Q^2$ in dramatic contrast from $1/Q^6$ in the leading twist picture.

- All these predictions can serve as signals of the onset of the black disk limit and can be tested at a high-energy lepton-nucleus collider, i.e., the future EIC and LHeC.

• Development of a new dipole model for lepton-nucleon and lepton-nucleus DIS and quantitative studies of parton saturation (non-linear dynamics).

• Development of a new parameterization of generalized parton distributions of the nucleon – the minimal model of the dual parameterization of nucleon GPDs – and comparison to the existing data on deeply virtual Compton scattering (DVCS).

• Theoretical analysis of DVCS on nuclear targets, in particular, of the role of the coherent (nucleus stays intact) and incoherent (nucleus breaks-up or becomes excited) contributions to nuclear DVCS;
analysis of non-nucleonic (mesonic) degrees of freedom in nuclear DVCS;
comparison to the pioneering HERMES measurements.

- A study of the role of the neutron contribution to nuclear DVCS observables, using as an example the beam-spin asymmetry A_{LU} measured in coherent and incoherent DVCS on nuclear targets in the HERMES and Jefferson Lab kinematics.
- Predictions for coherent and incoherent DVCS on ^{4}He for proposal of an experiment at Jefferson Lab (JLab proposal PR-08-024, Hall B);
  the experiment has been approved and completed and the data analysis is under way.

- A study of DVCS on nucleons and nuclei in the framework of generalized vector meson dominance (GVMD) model. We demonstrate that the GVMD model provides a good description of the high-energy HERA data on DVCS cross section, except for large values of Q^2 where the approach is not applicable; we also estimated $1/Q^2$ power-suppressed corrections and found them large.

- A study of incoherent DVCS on ^{4}He in the ^{4}He(e,e'γ p)X reaction, which probes possible medium-modifications of the bound nucleon GPDs.
  Using the beam-spin DVCS asymmetry A_{LU} as an example, we found that the nuclear medium modifies this asymmetry by as much as 6%.

- A study of DVCS on nuclear targets at large energies in the framework of the Color Glass Condensate. We found that the DVCS cross section is a sensitive tool to study the phenomenon of saturation and the regime of high parton densities.

- The systematization of baryons with mass less than 2000-2200 MeV using the approximate flavor SU(3) symmetry of the strong interaction. Based on the obtained picture of SU(3) multiplets, we predicted a number of missing baryons and their properties (mass, width, decays). The most notable one is the missing Λ hyperon with $J^P=3/2^-$, the mass around 1850 MeV, the total width approximately 130 MeV, and a very small coupling to the NK state.

Publications

Review Articles

1) L. Frankfurt, V. Guzey, M. Strikman, *Leading twist nuclear shadowing phenomena in hard processes with nuclei*,
Invited review for Physics Reports, preprint arXiv:1106.2091 [hep-ph], June 2011

2) K. Hencken *et al., The Physics of Ultraperipheral Collisions at the LHC*,
Phys. Rept. 458 (2008) 1

3) L. Frankfurt, V. Guzey, M. Strikman, *Nuclear shadowing in inclusive and tagged structure functions and extraction of F_2^p-F_2^n at small x from electron-deuteron collider data*,
Mod. Phys. Lett. A 21 (2006) 23

4) L. Frankfurt, V. Guzey, M. Strikman, *Color coherent phenomena on nuclei and the QCD evolution equation*, J. Phys. G 27 (2001) R23

Publications in Refereed Journals

1) A. Airapetian *et al*., (HERMES collaboration), *Nuclear-mass dependence of azimuthal beam-helicity and beam-charge asymmetries in deeply virtual Compton scattering*,
Phys. Rev. C 81 (2010) 035202

2) V. Guzey, M. Strikman, *Color fluctuation approximation for multiple interactions in leading twist theory of nuclear shadowing,* Phys. Lett. B 687 (2010) 167

3) V. Guzey, A.W. Thomas, K. Tsushima, *Medium modifications of the bound nucleon GPDs and the quark contribution to the spin sum rule*, Phys. Rev. C 79 (2009) 055205

4) K. Goeke, V. Guzey, M. Siddikov, *Leading twist nuclear shadowing, nuclear parton distributions, and nuclear deeply virtual Compton scattering at small x*,
Phys. Rev. C 79 (2009) 035210

5) V. Guzey, A.W. Thomas, K. Tsushima, *Medium modifications of the bound nucleon GPDs and incoherent DVCS on nuclear targets*, Phys. Lett. B 673 (2009) 9

6) V. Guzey, T. Teckentrup, *On the mistake in the implementation of the minimal model of the dual parameterization and resulting inability to describe the high-energy DVCS data*,
Phys. Rev. D 79 (2009) 017501

7) K. Goeke, V. Guzey, M. Siddikov, *Generalized parton distributions and Deeply Virtual Compton Scattering in Color Glass Condensate model*, Eur Phys. J. C 56 (2008) 203

8) V. Guzey, *Neutron contribution to nuclear DVCS asymmetries,* Phys. Rev. C 77 (2008) 025211

9) V. Guzey, M. Strikman, *Electromagnetic and strong contributions to dAu soft coherent inelastic diffraction at RHIC*, Phys. Rev. C 77 (2008) 067901

10) K. Goeke, V. Guzey, M. Siddikov, *Deeply Virtual Compton Scattering on nucleons and nuclei in the generalized vector meson dominance model*, Eur. Phys. J. A 36 (2008) 49

11) V. Guzey, M. Strikman, *Leading twist nuclear shadowing and suppression of hard coherent diffraction in proton-nucleus scattering*, Phys. Rev. C 75 (2007) 045208

12) V. Guzey, T. Teckentrup, *The dual parameterization of the proton generalized parton distribution functions H and E and description of the DVCS cross sections and asymmetries*, Phys. Rev. D 74 (2006) 054027

13) V. Guzey, M. Siddikov, *On the A-dependence of nuclear generalized parton distributions*, J. Phys. G: Nucl. Part. Phys. 32 (2006) 251

14) V. Guzey, M.V. Polyakov, *Dual parameterization of generalized parton distributions and description of the DVCS data*, Eur. Phys. J. C 46 (2006) 151

15) V. Guzey, M. Strikman, *Proton-nucleus scattering and cross section fluctuations at RHIC and LHC*, Phys. Lett. B 633 (2006) 245; Phys. Lett. B 663 (2008) 456 [Erratum]

16) V. Guzey, M. Strikman, W. Vogelsang, *Observations on dA scattering at forward rapidities*, Phys. Lett. B 603 (2004) 173

17) V. Guzey, Production *of Θ^+ in $\gamma+D\to\Lambda+\Theta^+$ and $\gamma+D\to\Sigma+\Theta^+$ reactions,* Phys. Rev. C 69 (2004) 065203

18) T. Rogers, V. Guzey, M. Strikman, X. Zu, *Determining the proximity of γ^*N scattering to the black body limit using deep inelastic scattering and J/Ψ production*, Phys. Rev. D 69 (2004) 074011

19) L. Frankfurt, V. Guzey and M. Strikman, *Leading twist coherent diffraction on nuclei in deep inelastic scattering at small x and nuclear shadowing*, Phys. Lett. B 586 (2004) 41

20) V. Guzey and M.V. Polyakov, *SU(3) systematization of baryons: theoretical methods and mixing with the antidecuplet*, Annalen Phys. 13 (2004) 673

21) V. Guzey and M. Strikman, *DVCS on spinless nuclear targets in impulse approximation*, Phys. Rev. C 68 (2003) 015204

22) L. Frankfurt, V. Guzey and M. Strikman, *Nuclear shadowing and extraction of* F_2^p-F_2^n *at small x from deuteron collider data*, Phys. Rev. Lett. 91 (2003) 202001

23) L. Frankfurt, V. Guzey, M. Strikman, and M. Zhalov, *Onset of perturbative color opacity at small x and Y Coherent Photoproduction off heavy nuclei at LHC*, *JHEP 0308 (2003) 043*

24) L. Frankfurt, V. Guzey and M. Strikman, *Leading twist model of nuclear shadowing: results, uncertainties and comparison to the experiment*, Phys. Rev. D 71 (2005) 054001

25) L. Frankfurt, V. Guzey, M. McDermott, M. Strikman, *Nuclear shadowing in deep inelastic scattering on nuclei: leading twist versus eikonal approaches*, JHEP 0202 (2002) 027

26) F. Bissey, V. Guzey, M. Strikman, A.W. Thomas, *Complete analysis of spin structure function* g_1 *of He-3*, Phys. Rev. C 65 (2002) 064317

27) V. Guzey, K. Saito, M. Strikman, A.W. Thomas, K. Tsushima, *Non-singlet structure functions of the* ^{3}*He -* ^{3}*H system and divergence of the Gottfried integral*, Phys. Rev. D 64 (2001) 054503

28) L. Frankfurt, V. Guzey, M. McDermott, M. Strikman, *Revealing the black body regime of small x DIS through final state signals*, Phys. Rev. Lett. 87 (2001) 192301

29) K. Saito, V. Guzey, K. Tsushima, A.W. Thomas, *Pions in isospin asymmetric nuclei*, Phys. Lett. B 517 (2001) 93

30) C. Boros, V. Guzey, M. Strikman, A.W. Thomas, *Role of* $\Delta(1232)$ *in DIS on polarized* ^{3}*He and extraction of the neutron spin structure function* $g_1(x,Q^2)$, Phys. Rev. D 64 (2001) 014025

31) V. Guzey, *Nuclear shadowing in polarized DIS on* ^{6}*LiD at small x and its effect on the extraction of the deuteron spin structure function* g_1^d, Phys. Rev. C 64 (2001) 045201

32) V. Guzey, M. Strikman, *Nuclear effects in* $g_{1A}(x,Q^2)$ *at small x in deep inelastic scattering on* ^{7}*Li and* ^{3}*He,* Phys. Rev. C 61 (2000) 014002

33) M. McDermott, L. Frankfurt, V. Guzey, M. Strikman, *Unitarity of the QCD-improved dipole picture*, Eur. Phys. J. C 16 (2000) 641

34) A. Freund, V. Guzey, *Study of nondiagonal parton distribution models*, Phys. Lett. B 462 (1999) 178

35) L. Frankfurt, V. Guzey, M. Strikman, *Cross section fluctuations of photon projectile in generalized vector meson dominance model*, Phys. Rev. D 58 (1998) 094039

36) L. Frankfurt, A. Freund, V. Guzey, M. Strikman, *Nondiagonal parton distributions in the leading logarithmic approximation*,
Phys. Lett. B 418 (1998) 345; Erratum-ibid. B 429 (1998) 414

37) L. Frankfurt, V. Guzey, M. Strikman, *The nuclear effects in g_1(He-3) and the Bjorken sum rule for A=3*, Phys. Lett. B 318 (1996) 379

38) V. Guzey, M. Strikman, *Color fluctuations in hadrons and proton coherent diffractive dissociation on helium*, Phys. Rev. C 52 (1995) R1189

Conference Proceedings

1) V. Guzey, M. Lamont, A. Polini, *Summary of "Future of DIS" Working Group Session,*
XIX International Workshop on Deep-Inelastic Scattering and Related Subjects (DIS2011), Newport News, VA, April 10-15, 2011

2) V. Guzey, *Physics opportunities with an Electron-Ion Collider*,
6^{th} International workshop on high-p_T physics at the LHC, Utrecht, The Netherlands, April 6, 2011

3) V. Guzey, *Nuclear generalized parton distributions and coherent nuclear processes,*
Exclusive Reactions at High Momentum Transfer, Jefferson Lab, May 18-21, 2010

4) V. Guzey, *Generalized parton distributions of nuclei*,
CIPANP 2009: 10^{th} Conference on the Intersections of Particle and Nuclear Physics, La Jolla, California, May 26-31, 2009, AIP Conf. Proc., arXiv: 0907.4124 [hep-ph]

5) V. Guzey, *The Electron-Ion Collider*,
CIPANP 2009: 10^{th} Conference on the Intersections of Particle and Nuclear Physics, La Jolla, California, May 26-31, 2009, AIP Conf. Proc., arXiv: 0907.4125 [hep-ph]

6) V. Guzey, *Mixing and decays of the antidecuplet in context of approximate SU(3) symmetry*, AIP Conf. Proc. 775 (2005) 3.

7) V. Guzey, *Nuclear effects in spin structure function g_1 of He-3*,
Int. J. Mod. Phys. A 18 (2003) 1473

8) V. Guzey, M. Strikman, *Nuclear effects in spin structure function $g_{1A}(x,Q^2)$ at small x in deep inelastic scattering on ^7Li and ^3He,* Proc. the Intern. Conf. on Quark Nuclear Physics, Adelaide, Feb. 2000, Nucl. Phys. A 680 (2000) 316

9) V. Guzey, *Role of nuclear shadowing and antishadowing in DIS on polarized nuclear* targets, Proc. of the eRHIC BNL summer meeting, Report BNL-52606, June-July 2000, eds. L. McLerran and R. Venugopalan.

10) L. Frankfurt, V. Guzey, W. Koepf, M. Sargsian, M. Strikman, *Color transparency and color opacity in coherent production of vector mesons off light nuclei at small x,* Proc. DESY Workshop *Future Physics at HERA 1995/1996*, Report DESY-96-235, *eds. G. Ingleman, A. De Roeck and R. Klanner, hep-ph/9608492*

Contributions to Experimental Proposals

1) A. Accardi *et al*., *Precision measurements of nucleon and nuclear structure functions to* constrain gluon distribution, JLab proposal, December 2009

2) H. Avakian *et al., Deeply Virtual Compton Scattering at 6 GeV with transversely polarized target using the CLAS detector, JLab proposal PR-08-021 (2008)*

3) K. Hafidi *et al*., *Deeply Virtual Scattering off ^4He*, JLab proposal PR-08-024 (2008). The experiment has been approved and completed.

Contributions to Letters of Intent/White Papers/Reports

1) K. Hafidi *et al*., *Nuclear exclusive and semi-inclusive physics with a new CLAS 12 low energy recoil detector*, 12 GeV Letter of Intent to Jefferson Lab PAC 35, December 2009

2) W. Brooks *et al*., *The EMC effect in spin structure functions*, 12 GeV Letter of Intent to Jefferson Lab PAC 35, December 2009

3) H. Abramowicz *et al.*, *Exploring the 3D quark and gluon structure of the proton: Electron scattering with present and future facilities,* White Paper for the discussion of the National Science Advisory Committee's Long Range Plan, March 2007

4) A. Baltz *et al., Photoproduction at collider energies: From RHIC and HERA to the LHC,* hep-ph/0702212, February 2007

5) T. Alexopoulos *et al*., *Electron deuteron scattering with HERA, a Letter of Intent for an experimental program with the H1 detector*,
DESY-03-194, DESY-PRC-03-02, H1-04-03-609, December, 2003

6) A. Accardi *et al.*, *Hard probes in heavy ion collisions at the LHC: PDFs, shadowing and pA collisions*, Subgroup report on 3rd Workshop on Hard probes in Heavy-Ion Collisions, Geneva, October 7-11 2002, hep-ph/0308248

7) L. Frankfurt, V. Guzey, M. McDermott, M. Strikman, *Electron-nucleus collisions at THERA*, The THERA Book, eds. U. Katz, M. Klein and A. Levy,
Report DESY-LC-REV-2001-062 (2001), hep-ph/0104252

8) H. Abramowicz *et al.*, *THERA: Electron-proton scattering at* $\sqrt{s}=1$ *TeV*,
eds. U. Katz, M. Klein and A. Levy, in TESLA TDR
DESY 2001-011, Vol. 4, p. 4-99, Hamburg 2001, ed. R. Klanner

Publications in Preprint Electronic Archives

1) A. Accardi, V. Guzey, J. Rojo, *Nuclear parton distributions and deviations from DGLAP at an Electron Ion Collider,* arXiv:1106.3839, June 2011

2) C.A. Salgado et al., *Proton-nucleus collisions at the LHC: Scientific opportunities and requirements,*
CERN-PH-TH-2011-119, LHC-PROJECT-REPORT-1181, arXiv:1105.3919, May 2011

3) V. Guzey**,** *A Further analysis of* Θ^+ *production in* $\gamma+D\to\Lambda+n+K^+$ *reaction,*
hep-ph/0608129, August 2006

4) V. Guzey, *SU(3) predictions of a new baryon*,
hep-ph/0512276, December 2005

5) V. Guzey, M.V. Polyakov, *SU(3) systematization of baryons*,
hep-ph/0512355, December 2005

6) V. Guzey, M.V. Polyakov, *Mixing and decays of the antidecuplet in the context of approximate SU(3) symmetry*, hep-ph/0501010, January 2005

7) A. Freund, V. Guzey, *Numerical methods in the LO evolution of nondiagonal parton distributions: the DGLAP case*, hep-ph/9801338 January 2001

Organization of Conferences and Workshops

1) Convener of parallel session "Future of DIS" of XIX International Workshop on Deep-Inelastic Scattering and Related Subjects (DIS2011), Newport News, VA USA, April 10-15, 2011

2) Scientific coordinator of topic "Imaging QCD Matter" of INT Program "Gluons and quark sea at high energy: distributions, polarization, tomography", INT, Seattle, September 13 – November 19, 2010

3) Convener of *eA working group of the Electron-Ion Collider Collaboration,* August 2007-present

4) Convener of session "Exclusive Reactions", Workshop on Nuclear QCD studies with a future Electron-Ion Collider, Argonne National Laboratory, April 7-9, 2010

5) Convener of eA parallel session of the IV Electron-Ion Collider Workshop, Hampton University, USA, May 19-23, 2008

6) Organizer of workshop *Exotic Hadrons*, ECT*, Trento, Italy, February 21-25, 2005

7) Organizer of workshop *Pentaquark states: structure and properties*, ECT*, Trento, Italy, February 10-12, 2004

8) Local organizer of workshop *Physics at the Japan Hadron Facility (JHF)*, Adelaide, Australia, March 14-21, 2002

Conference and Workshop Talks

1) *Summary of parallel session "Future of DIS"*, XIX International Workshop on Deep-Inelastic Scattering and Related Subjects, Newport News, VA, April 10-15, 2011

2) *Spatial imaging of the nucleon and nuclei at an Electron-Ion Collider*, 3rd International EIC Advisory Committee meeting, Jefferson Lab, April 10, 2011

3) *3D imaging of sea quarks and gluons at an Electron-Ion Collider*, QCD evolution workshop: from collinear to non-collinear case, Jefferson Lab, April 8, 2011

4) *Physics opportunities with an Electron-Ion Collider*, 6th International workshop on high-p_T physics at the LHC, Utrecht, The Netherlands, April 6, 2011

5) *Summary of subtopic "Imaging QCD Matter": Generalized parton distributions,*
INT 10-3 Program "Gluons and the quark sea at high energies: distributions, polarization, tomography", INT, Seattle, WA, November 18, 2010

6) *Nuclear GPDs*,
INT 10-3 Program "Gluons and the quark sea at high energies: distributions, polarization, tomography", INT, Seattle, WA, October 13, 2010

7) *Nuclear GPDs and coherent nuclear processes*,
Exclusive Reactions at High Momentum Transfer, Jefferson Lab, May 18-21, 2010

8) *Coherent phenomena in eA collisions*,
Spring workshop on Electron-Nucleus Collider Physics,
The Rockefeller University, New York City, May 14, 2010

9) *Exclusive Reactions – Summary and Outlook*, and

10) *Nuclear shadowing and nuclear parton distributions*,
Workshop on Nuclear QCD studies at a future EIC,
Argonne National Lab, April 7-9, 2010

11) *Coherent and incoherent nuclear exclusive processes*,
Electron-Ion Collider Workshop: Electron-Nucleon Exclusive Reactions,
Rutgers University, Piscataway, NJ, March 14-15, 2010

12) *Generalized parton distributions in nuclei and their medium modifications*,
workshop "High Energy Nuclear Physics and QCD", Florida International University,
Miami, FL, February 3-6, 2010

13) *Coherent nuclear processes at high energies*,
EIC Collaboration Meeting, Stony Brook University, January 9-12, 2010

14) *Nuclear GPDs at an EIC,*
INT workshop on Physics at a High Energy Electron Ion Collider,
INT, Seattle, WA, October 19-23, 2009

15) *Generalized parton distributions in nuclei*,
Science and Technology Review, Jefferson Lab, Newport News, VA, USA, July 15, 2009

16) The Electron-Ion Collider,
10^{th} Conference of the Intersections of Particle and Nuclear Physics (CIPANP 2009),
La Jolla, CA, USA, May 26-31, 2009

17) *Generalized parton distributions in nuclei*,
10^{th} Conference of the Intersections of Particle and Nuclear Physics (CIPANP 2009),
La Jolla, CA, USA, May 26-31, 2009

18) *Nuclear medium modifications of bound nucleon generalized parton distributions*,
Third workshop of the APS Topical Group on Hadronic Physics (GHP 2009),
Denver, CO, April 29-May 1, 2009

19) *Diffraction at Electron-Ion Collider*,
plenary talk at the EIC Collaboration meeting,
LBNL, Berkeley, USA, December 11-13, 2008

20) *Deeply Virtual Compton Scattering with nuclei at small-x at EIC*,
EIC Collaboration meeting,
LBNL, Berkeley, USA, December 11-13, 2008

21) *Incoherent DVCS on nuclear targets*,
Workshop Journees Noyaux du GDR Nucleon,
LPSC, Grenoble, France, November 18-19, 2008

22) *Dual parameterization update*,
GPD Working Group Mini-workshop "DVCS analysis",
Jefferson Lab, Newport News, VA, USA, August 6-7, 2008

23) *Nuclear GPDs and DVCS in Collider kinematics*,
IV Electron-Ion Collider workshop,
Hampton University, Hampton, VA, USA, May 19-23, 2008

24) *Theory of DVCS on nuclei: Promising observables,*
Short-Range Structure of Nuclei at 12 GeV Workshop,
Jefferson Lab, Newport News, VA, USA, October 26-27, 2007

25) *Theory of DVCS on nuclei,*
DVCS Hall A Collaboration Meeting,
Jefferson Lab, Newport News, VA, USA, October 15, 2007

26) *Hard diffraction in DIS and pA,*
Workshop on Photoproduction at collider energies: from RHIC and HERA to LHC,
Trento, ECT*, Italy, January 15-19, 2007

27) *Feasibility study for nuclear DVCS in collider kinematics*,
Joint INT/BNL/JLab Workshop on Hard exclusive processes at JLab 12 GeV and a Future EIC, University of Maryland, College Park, MD, USA, October 29-30, 2006

28) *Dual parameterization of generalized parton distributions and description of DVCS data*, Joint INT/BNL/JLab Workshop on Hard exclusive processes at JLab 12 GeV and a Future EIC, University of Maryland, College Park, MD, USA, October 29-30, 2006

29) *Dual parameterization of generalized parton distributions and description of DVCS data*, Workshop on GPDs and exclusive processes, Trento, ECT*, Italy, June 5-9, 2006

30) *Mixing and decays of the antidecuplet*, COSY-FFE Workshop, COSY, Jülich, Germany, October 4-5, 2005

31) *Status of nuclear PDFs and pA scattering at forward rapidity*, Workshop on Proton-Nucleus Collisions at the LHC, CERN, Geneva, May 25-27, 2005

32) *Mixing and decays of the antidecuplet in context of approximate SU(3) symmetry*, Workshop on Exotic Baryons, Trento, Italy, Feb. 21-24, 2005

33) *Mixing and decays of the antidecuplet in context of approximate SU(3) symmetry*, Joint Meeting Heidelberg-Liege-Paris-Rostock (HLPR 2004), Spa, Belgium, Dec. 16-18, 2004

34) *Status of nuclear parton distributions*, HERA and the LHC workshop, CERN, Geneva, March 26-27, 2004

35) *Status of nuclear parton distributions*, Second EIC Workshop, Jefferson Lab, Newport News, VA, USA, March 15-17, 2004

36) *Dual parametrization of GPDs and DVCS data*, German Physics Spring Meeting (DPG) 2004, Köln, March 10, 2004

37) *Photoproduction of Θ^+ in $\gamma+D\to\Lambda+\Theta^+$ and $\gamma+D\to\Sigma+\Theta^+$ reactions,* German Physics Spring Meeting (DPG) 2004, Köln, Germany, March 11, 2004

38) *Photoproduction of Θ^+ in $\gamma+D\to\Lambda+\Theta^+$ and $\gamma+D\to\Sigma+\Theta^+$ reactions,* Trento Pentaquark Workshop, ECT*, Trento, Italy, Feb. 10-12, 2004

39) *Kinematics considerations of Θ^+ photoproduction on deuterium: rescattering diagrams*, PentaQuark 2003 Workshop, Jefferson Lab, Newport News, VA, USA, Nov. 6-8, 2003

40) *DVCS on spinless nuclei,* German Physics Spring Meeting (DPG) 2003, Tübingen, Germany, March 20, 2003

41) *Leading twist model of nuclear shadowing*, HERA III Workshop, München, Germany, Dec. 18-20, 2002

42) *Black body limit of DIS on nuclei and its signals*,
HERA III Workshop, München, Germany, Dec. 18-20, 2002

43) *Nuclear effects in spin structure function g_1 of He-3*,
3rd Circum-Pan-Pacific Symposium on High-Energy Spin Physics,
Beijing, China, Oct. 8-13, 2001

44) *Black body limit of DIS at small-x: diffractive final states*,
DIS 2001 workshop, Bologna, Italy, April 27-May 1, 2001

45) *Non-singlet structure function of ^{3}He - ^{3}H system and divergence of Gottfried sum rule*,
Workshop on Lepton scattering, Hadrons and QCD, Adelaide, Australia,
March 26-April 5, 2001

46) *Role of the $\Delta(1232)$ in DIS on polarized ^{3}He and the neutron spin structure function g_1*,
14th National Congress of the Australian Institute of Physics (AIP2000), Adelaide, Australia,
December 10-15, 2000

47) *Role of nuclear shadowing and antishadowing in DIS on polarized nuclear targets,*
eRHIC BNL summer meeting, Brookhaven National Laboratory, USA,
June 26-July 14, 2000

48) *Nuclear shadowing in g_{1A} at small-x deep inelastic scattering on ^{7}Li and ^{3}He*,
International Conference on Quark Nuclear Physics, Adelaide, Australia,
February 21-25, 2000

Invited Seminars

1) *Generalized parton distributions in nuclei*,
George Washington University, Washington, D.C., January 26, 2010

2) *Medium modifications of bound nucleon GPDs*,
"The Jefferson Laboratory Upgrade to 12 GeV" INT program (INT-09-3),
INT, Seattle, WA, October 30, 2009

3) *Physics of the future Electron-Ion Collider*,
HEP Division, PNPI, Gatchina, Russia, November 25, 2008

4) *Generalized parton distributions of nucleons and nuclei*,
University of Connecticut, Storrs, CT, USA, March 24, 2008

5) *Dual parameterization of nucleon and nuclear GPDs,*
CPhT, Ecole Polytechnique, Paris, France, February 21, 2008

6) *Meson degrees of freedom in nuclear DVCS*,
Theory Group, Thomas Jefferson National Accelerator Facility,
Newport News, VA, USA, April 18, 2007

7) *DVCS on nuclei and hydrogen at HERMES*,
HERMES, DESY, Hamburg, Germany, November 22, 2006

8) *Dual parameterization of generalized parton distributions and description of DVCS data*,
Theory Group, Thomas Jefferson National Accelerator Facility, Newport News, VA, USA,
October 19, 2006

9) *SU(3) systematization of baryons and prediction of a new Λ baryon,*
CPhT, Ecole Polytechnique, Paris, France, January 26, 2006

10) *Leading twist model of nuclear shadowing*,
The Pennsylvania State University, State College, PA, USA, March 19, 2004

11) *Leading twist model of nuclear shadowing: inclusive and tagged structure functions*,
Nuclear Theory Group, Brookhaven National Lab, Long Island, USA, November 10, 2003

12) *The $\gamma+D\rightarrow\Lambda+\Theta^+$ reaction,*
Crystal Barrel & TAPS collab. meeting, Bonn University, Germany, September 22, 2003

13) *Nuclear DVCS,*
University of Regensburg, Germany, September 19, 2003

14) *The EMC effect,*
Institute for Theoretical Physics II, Ruhr University, Bochum Germany, Sept. 11, 2003

15) *Deep inelastic scattering on polarized He-3*,
Nuclear Theory Group, University of Washington, Seattle, WA, December 1998

Lectures

- *Nuclear effects in High Energy Lepton Scattering*,

  Lectures at HUGS 2011: 26th Annual Hampton University Graduate Studies Program, Jefferson Lab, Newport News, Virginia, May 31-June 17, 2011

- *Nuclear effects in high energy lepton-nucleus scattering*,

  Lectures at HUGS 2009: 24th Annual Hampton University Graduate Studies Program, Jefferson Lab, Newport News, Virginia, June 16-17, 2009

Professional Service

- Reviewer for *Physical Reviews C* and *D, Physics Letters B, Journal of Physics G and European Physical Journal C*

- Reviewer for the Office of Nuclear Physics, U.S. Department of Energy (DOE)