Curriculum Vitae

Vincent G.J. Rodgers

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EDUCATIONAL AND PROFESSIONAL HISTORY

1. Higher Education

   - Syracuse University, Syracuse, N.Y
     1982-1985, Theoretical Particle Physics
     Ph.D. Aug. 1985
   - Syracuse University, Syracuse, N.Y.
     1980-1982, Theoretical Particle Physics
     M.S. Aug. 1982
   - University of Dayton, Dayton, Ohio
     1976-1980, Physics major, Math minor, Computer Science minor
     B.S. Apr. 1980

2. Professional and Academic Positions

   - Professor, August 2004 - Present
   - Director of Graduate Studies, August 2019 - Present
   - Co-Director and PI, Iowa Bioscience Advantage, 2005-2018
   - Co-Director, IINSPIRE-LSAMP UI, 2015-Present
   - Associate Professor, June 1995 - July 2004
     The University of Iowa, Iowa City, IA
   - Assistant Professor, Sept 1989 - June 1995
     The University of Iowa, Iowa City, IA
   - Postdoctoral Research Associate, Sept 1987 - Sept 1989
     Institute for Theoretical Physics, State University of New York, Stony Brook, NY
   - Postdoctoral Research Associate, Sept 1985 - Sept 1987
     Institute for Fundamental Theory, University of Florida, Gainesville, FL
   - Research Assistant and Numerical Analyst, Jan 1979 - Sept 1980
     University of Dayton Research Institute and Wright Paterson Air Force Base

3. Other Positions

   - Founder and Organizer, Café Scientifique Iowa City 2005-2020
   - Hawkeyes on Science Co-Coordinator 2003-Present
   - MESA/Iowa City Community School District Faculty Participant 1994-2015

4. Honors and Awards

   - Fellow of the American Physical Society 2020
   - President and Provost Award For Teaching Excellence 2019
   - UI Faculty Development Award, Spring 2016
   - CLAS Outreach and Public Engagement Award, 2014
   - CLAS Diversity Award, 2011
   - UI Faculty Development Award, Spring 2010
   - UI Faculty Development Award, Fall 2002
   - Fellow of the National Society of Black Physicists, March 2001
   - Eduard Bouchet Award, National Conference of Black Physics Students, MIT 1997
   - UI Faculty Development Award, Fall 1996
   - Outstanding Teaching Certificate, The University of Iowa Council of Teaching 1994
   - Stellar Achievement Award, St. Louis, American Newspaper 1992
   - Old Gold Summer Fellow, University of Iowa, 1990-1991
   - Outstanding Graduate Research Award, Sigma Xi, Syracuse Chapter 1985
   - Chester Davis Fellowship, University of Indiana, 1985

5. Memberships

   - Sigma Xi, since 2020
   - American Physical Society (APS), since 1985
   - American Association of Physics Teachers (AAPT), since 2004
   - National Society of Black Physicists (NSBP), since 1990

6. Research Interests

   - Theoretical Particle/String Physics
   - Mathematical Physics
   - Theoretical Gravitation and Cosmology

SCHOLARSHIP

Refereed Publications[4]

1. S. Brensinger, K. Heitritter, V. G. J. Rodgers and K. Stiffler, "General structure of Thomas−Whitehead gravity," Phys. Rev. D **103**, no.4, 044060 (2021)

2. "Dark Energy From Dynamical Projective Connections," by S. Brensinger, K. Heitritter, V. G. J. Rodgers, K. Stiffler and C. A. Whiting, Class. Quant. Grav. **37**, no.5, 055003 (2020)

3. "Dynamical Projective Curvature in Gravitation," by S. Brensinger and V. G. J. Rodgers, Int. J. Mod. Phys. A **33**, no.36, 1850223 (2019)

4. "Supergravity solutions with AdS_4 from non-Abelian T-dualities," by L. A. Pando Zayas, V. G. J. Rodgers and C. A. Whiting, JHEP **1602**, 061 (2016)

5. "An Extended Detailed Investigation of First and Second Order Supersymmetries for Off-Shell $\mathcal{N}=$ 2 and $\mathcal{N}=4$ Supermultiplets," by S. J. Gates, Jr., J. Parker, V. G. J. Rodgers, L. Rodriguez and K. Stiffler, Symmetry **7**, no. 2, 1080 (2015).

6. "Type IIB supergravity solutions with AdS_5 from Abelian and non-Abelian T dualities," by N. T. Macpherson, C. Nez, L. A. Pando Zayas, V. G. J. Rodgers and C. A. Whiting, JHEP **1502**, 040 (2015)

7. "Holographic k-string Tensions in Higher Representations and Luescher Term Universality," by B. Button, S. J. Lee, L. A. Pando Zayas, V. G. J. Rodgers and K. Stiffler, *Phys. Rev. D* **87**, 126005 (2013) arXiv:1209.5149 [hep-th].

8. "4D, N = 1 Supersymmetry Genomics (II)," by S. J. Gates, Jr., J. Hallett, J. Parker, V. G. J. Rodgers and K. Stiffler, *JHEP* **1206**, 071 (2012) [arXiv:1112.2147 [hep-th]].

9. "Toward NS5 Branes on the Resolved Cone over $Y^{p,q}$," by E. Caceres, M. N. Mahato, L. A. Pando Zayas, V. G. J. Rodgers, *Phys. Rev. D* **83**, 066008 (2011)

10. "4D, N = 1 Supersymmetry Genomics (I)," by S. J. . Gates, J. Gonzales, B. MacGregor, J. Parker, R. Polo-Sherk, V. G. J. Rodgers and L. Wassink, *JHEP* **0912**, 008 (2009) [arXiv:0902.3830 [hep-th]].

11. "Tensions and Luscher Terms for (2+1)-dimensional k-strings from Holographic Models," by C. A. Doran, L. A. Pando Zayas, V. G. J. Rodgers and K. Stiffler, *JHEP* **0911**, 064 (2009) [arXiv:0907.1331 [hep-th]]

12. "Luscher Term for k-string Potential from Holographic One Loop Corrections," by L. A. Pando Zayas, V. G. J. Rodgers and K. Stiffler, arXiv:0809.4119 *JHEP* **0812**, 036 (2008)

13. "General Coordinate Transformations as the Origins of Dark Energy," by V. G. J. Rodgers and T. Yasuda, arXiv:hep-th/0601113. *Int. Jour. Mod. Phys A***22**, 749 (2007)

[4]Authors are ordered alphabetically.

14. "Short Distance Expansion from the Dual Representation of Infinite Dimensional Lie Algebras," by S. J. Gates, W. D. Linch, J. Phillips and V. G. J. Rodgers , arXiv:hep-th/0211021, *Comm. of Math. Phys.***246** 333-358 (2004)

15. 'From 'Diffeomorphisms to Dark Energy", by V.G.J. Rodgers and Takeshi Yasuda, *Mod. Phys. Lett.* **A 18** 2467-2474 (2003)

16. "Chiral Supergravitons Interacting with a 0-Brane N-Extended NSR Supervirasoro Group" by A. Boveia, Bjorg A. Larson, V.G.J. Rodgers, S.James Jr. Gates, W.D. Linch, III, J.A. Phillips, Dagny M. Kimberly, *Phys. Lett.* **B 529**, 222-232 (2002)

17. "Supergravitons Interacting with the Supervirasoro Group", by S.James Gates, Jr. and V.G.J. Rodgers, *Phys. Lett.* **B 512**, 189-196 (2001)

18. "The Image of Self Dual QCD Strings in Four Dimensions", by Bob Bacus and V.G.J. Rodgers, *Comp. Phys. Commun.* **136**, 37-53 (2001)

19. "Irreducible Decomposition of 10 D Chiral Sigma Matrices", by S. James Gates, Jr., B. Radak, V.G.J. Rodgers, *Comp. Phys. Commun.* **136** 173-181, (2001)

20. "Superspace Geometrical Realization of the N-Extended Super Virasoro Algebra and its Dual" by C. Curto, S. James Gates, Jr. and V.G.J. Rodgers, *Phys. Letts.* **B480** 337-347, (2000)

21. "Interaction of a String-Inspired Graviton" by Thomas Branson, V.G.J. Rodgers, and Takeshi Yasuda *Inter. Jour. Mod. Phys.***A 15**, 3549-3562 (2000)

22. "Type B/O Bosonic String Sigma Models." by By S.J. Gates, Jr. and V.G.J. Rodgers, *Phys.Lett.***B405**, 71-78 (1997)

23. "Yang-Mills, Gravity and Symmetries of String Theories," by Thomas Branson, R.P. Lano and V. G. J. Rodgers, *Phys. Lett.***B412**, 253-258 (1997)

24. "Evidence for Complex Subleading Exponents from the High-Temperature Expansion of the Hierarchical Ising Model," by Y. Meurice, G. Ordaz and V. G. J. Rodgers, *Phys. Rev. Lett.***75**, 4555-4458 (1995)

25. "A Truly Crazy Idea About Type-IIB Supergravity and Heterotic Sigma Models," by S.J. Gates Jr. and V.G.J. Rodgers, *Phys. Lett.***B357**, 552-557 (1995)

26. "A Study of Fermions on a Cylinder Coupled to Gauge and Gravitational Fields," by Ralph Lano and V.G.J. Rodgers, *Nucl. Phys. B* **B437**, 45-59 (1995)

27. "A 2D Inspired 4D Theory of Gravity," by V.G.J. Rodgers, *Phys. Lett.* **B336**, 343-346 (1994)

28. "A Numerical Study of the Hierarchical Ising Model: High Temperature Versus Epsilon Expansion," by Y. Meurice, G. Ordaz and V.G.J. Rodgers, *Jour. Stat. Phys.***17**, 607-626 (1994)

29. "Applications of W-algebras to BF Theories, QCD, and 4D Quantum Gravity," by Ralph Lano and V.G.J. Rodgers, *Mod. Phy. Lett.* **A7**, 1725-1736 (1992)

30. "QCD Instantons and 2D Surfaces", by V.G.J. Rodgers, *Mod. Phy. Lett.* **A7**, 1001-1008 (1992)

31. " W_∞ and Effective Actions for Self-Dual Einstein Gravities," by V.G.J. Rodgers, *Mod. Phys. Lett.* **A6**, 1893-1990 (1991).

32. "A W_2 Effective Action," by V.G.J. Rodgers, *Mod. Phys. Lett.* **A6**, 1045-1052 (1991)

33. "The Method of Coadjoint Orbits Applied to the Super Virasoro Algebra," by G.W. Deluis, P. van Nieuwenhuizen, and V.G.J. Rodgers, *Inter. Journ. Mod. Phys.* **A5**, 3943-3984 (1990)

34. "From Co-Adjoint Orbits to Scale Invariant $WZNW$ Type Models and $2-D$ Quantum Gravity," by Balram Rai and V.G.J. Rodgers, *Nucl. Phys.* **B341**, 119-133 (1990)

35. "The Superstring, Diff S1/S1 and Holomorphic Geometry," by D. Harari, D.K. Hong, P. Ramond, and V.G.J. Rodgers, *Nucl. Phys.* **B294**, 556-572 (1987)

36. "The Explicit Gauge Invariance of the Free Closed Strings and Open Fermionic Strings," by P. Ramond, V.G.J. Rodgers, and R.R. Viswanathan, *Nucl. Phys.* **B293**, 293-316 (1987)

37. "Algebraic Structure of Open String Interaction," by P. Ramond and V.G.J. Rodgers *Phys. Rev.* **D34** 2352-2359 (1986)

38. "Gauge Invariant Field Theory of Free Strings," by D. Pfeffer, P. Ramond, and V.G.J. Rodgers, *Nucl. Phys.* **B276** 131-172, (1986)

39. "Quantum Aspects of Topological Solitons," by V.G.J. Rodgers, UMI 86-03772 (microfiche), August 1985, Ph.D. Thesis

40. "Dibaryons as Chiral Solitons," by A.P. Balachandran, F. Lizzi, and V.G.J. Rodgers *Nucl. Phys.* **B256** 525-556, (1985)

41. "A Doubly Strange Dibaryon in the Chiral Model," by A.P. Balachandran, A. Barducci, F. Lizzi, V.G.J. Rodgers, and A. Stern *Phys. Rev. Lett.* **52** 887-890, (1984)

42. "Topological Symmetry Breakdown in Nematics and He-3," by A.P. Balachandran, F. Lizzi, and V.G.J. Rodgers, *Phys. Rev. Lett.* **50** 1818

43. "Self-Adjointness of the Dirac Hamiltonian in Point Instanton and Meron Fields," by F. Lizzi, and V.G.J. Rodgers, *Phys. Rev.* **D30** 442-446, (1984)

44. "Calculating a Relaxation Spectrum from Experimental Data via Quadratic Programming With and Without Regularization,"
by C.Y.-C. Lee, D.R. Wiff, and V.G.J. Rodgers,
Journal of Macromolecular Science, Physics Edition **B19** 212-225 (1981)

Conference and Technical Reports

1. "A Detailed Investigation of First and Second Order Supersymmetries for $\mathcal{N} = 2$ and $\mathcal{N} = 4$ Supermultiplets" by S. J. Gates, James Parker, Leo Rodriguez, V. G. J. Rodgers, and Kory Stiffler, arXiv:1106.5475 [hep-th]

2. "A Wess-Zumino Action for the Courant Bracket," by X. Liu, L. A. P. Zayas, V. G. J. Rodgers and L. Rodriguez, arXiv:hep-th/0610021

3. "Yang-Mills, Gravity and 2D String Symmetries", by V.G.J. Rodgers,
Conference Proceedings, Boston 1998 - Particles, Strings and Cosmology, 657-661, QCD 161:I69:1998

4. "Yang-Mills, Gravity and 2D String Symmetries", by V.G.J. Rodgers,
Conference Proceedings, NSBP XXV Annual Day of Scientific Lectures and 21st Annual Meeting, Mar. 1998

5. "Chiral Symmetry and Skyrmion - Quark Mixing," by V.P. Nair and V.G.J. Rodgers, published in Proceedings of the Seventh Annual Montreal-Rochester-Syracuse-Toronto Meeting, May 1985

6. "Skyrmion Quark Mixing," by V.P. Nair and V.G.J. Rodgers June 1984. Published in Lewes Workshop 1984, 97-101 (QC174.26:W62:1984).

7. "Anomalous Symmetries and Induced Currents", by D. Karabali, V.P. Nair, and V.G.J. Rodgers, Print-85-0176 (IAS, Princeton), December 1984.

8. "A Restriction on Skyrmion - Fermion Couplings", by V.G.J. Rodgers and G. Sparano, SU-4228-321 (Syracuse U.), July 1985

9. "Symmetry Reduction in the Presence of Gut Monopoles", by F. Lizzi, V.P. Nair, and V.G.J. Rodgers, SU-4222-269 (Syracuse U.), September 1983

Publications Supervised

- "Chern-Simons Splitting of 2+1D Pure Yang-Mills Theory at Large Distances," by T. Yildirim, arXiv:1410.8593 [hep-th],.

- "Topologically Massive Yang-Mills Theory and Link Invariants," by T. Yildirim,
Int. J. Mod. Phys. A **30**, 1550034 (2015) arXiv:1311.1853 [hep-th]

- "Entropy and Temperature From Black-Hole/Near-Horizon-CFT Duality," by L. Rodriguez, T. Yildirim, Class. Quant. Grav. **27**, 155003 (2010). [arXiv:1003.0026 [hep-th]].

- "A Near Horizon CFT Dual for Kerr-Newman-AdS," by B. K. Button, L. Rodriguez, C. A. Whiting, Int. J. Mod. Phys. A **26**, 3077 (2011) [arXiv:1009.1661 [hep-th]].

Grants

Grants and Contracts: Internal

1. "Expanding and Enhancing STEM Initiatives Within CLAS": Hawk-Eyes In Space, Sept 2012-Sept 2013 $10,000
2. Instructional Improvement Award: Visual Aids for the course **Physics of the Body**, PI, $2000
3. CIFRE: "Extra-Galactic Structure of Gravity", Jan 1999- June -1999, PI, $5,000
4. Obermann Fellowship: "Towards a Quantum Theory of Gravitation", June 30, 1996 - July 31, 1996, Co-PI, with Prof. Thomas Branson (Math) $3,500
5. Carver Grant: "PHASE TRANSITIONS IN GRAVITY" 1993 $5,000
6. WEEG Instructional Computing Proposal: Video disc for Physics 1993 $2,000
7. Old Gold Fellow: Summer 1991, University of Iowa $2,000
8. Interdisciplinary Research Assistantship: Prof. Thomas Branson was co-principal investigator $10,000 1990-1991 (Math-Physics)
9. Old Gold Fellow: Summer 1990, University of Iowa PI, $2,000

Grants and Contracts: External

1. NSF Grant: "IINSPIRE LSAMP, Iowa, Illinois Nebraska STEM Partnership in Research and Education", Oct 2016 - Sept 2021 ($560,000)
2. NSF Grant: "Confining Geometries and Quantum Chromodynamics", June 2011- May 2014 ($30,000)
3. The University of Iowa IMSD: Iowa Bioscience Advantage, Jan 2012 - Sep 2022, $2,309,282
4. The University of Iowa IMSD: Iowa Bioscience Advantage, Dec 2008- Jan 2012, $4,592,020
5. (with Mr. Dale Stille) APS Grant: "LaserFest", December 2009, $6,000
6. NSF Grant: PHY-0244377, "Diffeomorphisms, K-Strings, and Cosmology"', June 2007-May 2010, $30,000
7. (with Mr. Dale Stille) Bauder Fund: "Hawk-Eyes on Science", December 2004, $1000
8. (with Dale Stille) APS Grant: "Hawk Eyes on Science", December 2004, $10,000
9. NSF Grant: PHY-9103914, "Conformal Symmetry, Four Manifolds, and QCD", September 1991-January 1994, PI, $36,500
10. NSF Grant: PHY-9411002, "Issues in Gauge Theories", September 1994-January 1997, PI, $57,000
11. NSF Grant: PHY-0244377, "From Diffeomorphisms to Dark Matter"', June 2003-June 2006, PI $50,000

Invited Lectures and Conference Presentations

Invitations/Conferences: International

1. Invited Talk: "Quantum K-Strings", Workshop on Confining Flux Tubes and Strings. Trento, Italy July, 2010
2. Invited Talk: "Coordinate Transformations and Dark Energy"', Raman Research Institute, Bangalore, India Aug. 2007
3. Invited Talk: "Diffeomorphisms and Dark Matter", given at *Spacetime and Fundamental Interactions: Quantum Aspects*, A conference to honor A. P. Balachandran's 65th birthday, Vietri sul Mare - Salerno - Italy (May 2003)
4. Conference Talk: "Yang Mills, Gravity and 2D String Symmetries", 6th International Symposium on Particles, Strings and Cosmology (March 1998), North Eastern University
5. Theory Seminar: "Covariant String Field Theory", Informal Summer School on Superstrings, Argonne National Laboratories (June, 1986)
6. Theory Seminar: "Skyrmion-Quark Mixing", The Seventh Annual Montreal-Rochester-Syracuse-Toronto, University of Rochester (May, 1985)
7. Invited Visiting Scientist: Institute of Science, Bangalore, India (September-November 1984)

Invitations/Conferences: National

1. Colloquium: "Projective Gauged Gravity", University of Rochester, Department of Physics and Astronomy, Oct 2021
2. Invited Talk: "Projective Geometry and Gravitation", *Miami 2020 Physics Conference*, Dec. 2020
3. Seminar: "Projective Geometry and Gravitation", University of Iowa, Math-Physics Seminar, Nov. 2020
4. Seminar: "From Geodesics to 4D Dark Matter and Energy", CUNY, City College New York. Theoretical Physics Seminar, City University of New York Presenters Oct 2020
5. Colloquium: "Science and Civilization as Seen By A Physicist", Department of Physics, City College of New York,City University of New York Oct 2020
6. Seminar: "From 2D Gravity to 4D Dark Energy and Dark Matter via Geodesics", Brown Theoretical Physics Center, Brown University, Providence, Rhode Island May 2020
7. Seminar: "Projective Geometry and Gravitation", *Room 316,* Department of Physics Syracuse University, Syracuse, New York May 2020
8. Seminar: "From Math to Mother Nature", Applied Mathematics and Computational Sciences/ University of Iowa, Spring 2019

9. Invited Lecture: "The Black Hole and its Image", The Unity Group, Clinton IA May 2019
10. Colloquium: "Projective Geometry in Classical and Quantum Gravity", Grinnell College, April 2019
11. Invited: Hawkeye Lunch and Learn Lecture Series, "Why Study Gravitation? What Else is There To Know?" Office of Outreach and Engagement, Des Moines, Iowa March and April 2018
12. Keynote: "Science and Civilization: A Physicist Perspective," LSAMP IINSPIRE Annual Conference, National Science Foundation, Des Moines, Iowa, Feb 2016
13. Invited: National Society of Black Physicists, "New Supergravity Solutions Arising from T-Duality and Non-Abelian T-Duality", NSBP, Baltimore, Maryland Feb. 2016
14. Panel Discussion on STEM Graduate Programs, Wartburg College, Waverly, IA, Oct. 2013
15. Colloquium: "The Power of Symmetry in Theoretical Physics", Augustana College, SD, Nov. 2013
16. Colloquium: "The Power of Symmetry in Theoretical Physics", Grinnell College, Sept. 2013
17. Invited: "Austin Holography Workshop", University of Texas at Austin, May 2013
18. Panel Discussion, Career Day, DeSmet Jesuit High School, St. Louis Mo., Nov. 2012
19. Colloquium: "Anatomy of String Theory", Grinnell College, Nov. 2010
20. Colloquium: "Anatomy of String Theory", Wesleyan University, Dec. 2010
21. Colloquium: "Anatomy of String Theory", SUNY Buffalo, NY, Nov. 2010
22. Seminar: "A New Class of Confining Theories Using Sasaki-Einstein Manifolds". CCNY, June, 2010
23. Colloquium: "Anatomy of String Theory", Macalester College, MN October, 2009
24. Seminar: "The Physics of the Big Bang: From Elementary Matter to the Universe", Macalester College, MN October, 2009
25. Colloquium: "Unravelling The Mathematical Laws of Dark Energy and Dark Matter", Wayne State University, October, 2008
26. Invited Speaker: American Physical Society Meeting: Graduate Education in Physics. Which Way Forward? Conference, January 31 February 2, 2008
27. Public Lecture - Café Scientifique: "The Physics of the Big Bang", December, 2007
28. Invited Talk: "Coordinate Transformations and Dark Energy", University of California, Riverside Jan. 2007
29. Invited Talk: *Miami 2006*, "A Geometric Action for the Courant Bracket"
30. Colloquium: "Anatomy of String Theory", Creighton University, Omaha, Nebraska, Nov. 2006

31. Invited Participant: "Affine Hecke Algebras, The Langlands Program, Conformal Field Theory and Matrix Models" CIRM - Luminy, France, 2 July - 14 July, 2006

32. Invited Talk: *Miami 2005*, "Can the Algebra of Diffeomorphisms Explain Dark Energy?"

33. Invited Talk: American Physical Society, April 2005 Meeting, "Diffeomorphisms and Dark Energy"

34. University of Iowa Series of talks on the AdS/CFT conjecture Fall 2005 - Spring 2006

35. Public Lecture - Café Scientifique: "So what is String Theory Anyway?", December 2005

36. Several annual talks at the University of Iowa in Math Physics and Joint Experimental and Theoretical Physics Seminar

37. Colloquium: "Anatomy of String Theory", University of Kansas, Lawrence, Kansas, Jan. 2005

38. Colloquium: "Symmetry in Gravity: From General Relativity to String Theory", St. Benedictine, Kansas, April, 2004

39. Colloquium: "Symmetry in Gravity: From General Relativity to String Theory", University of Miami, April 2004

40. Invited Presentation: "Fundamentals of Physics", National Conference of Hispanic Professional Engineers, Jan, 2004

41. Invited Participant: Workshop of "Conformal Symmetry in Geometry, Analysis, and Physics", The American Institute of Mathematics, Palo Alto, CA (August, 2003)

42. Invited Talk: "Actions From the Dual of Algebras ", given at *Pierre Fest*, A conference to honor Pierre Ramond's 60th birthday, (Gainesville, FL), Feb 2003

43. Physics Colloquium: "Symmetry in Gravity: From General Relativity to String Theory", North Carolina A & T (November, 2002)

44. Invited Talk: "Coadjoint Representation of the Super Virasoro Algebra and Super Gravitons", given at Conference of African American Researchers in the Mathematical Sciences 8, Princeton University (June, 2002)

45. Physics Colloquium: "The Trouble with Gravity", Florida Institute of Technology, Melbourne, FL (November, 2001)

46. Invited Member: Workshop on Geometrical Aspects of Spectral Invariants Mathematical Science Research Institute, Berkeley, CA (April-May 2001) (see http://www.msri.org/)

47. Physics Colloquium: "The Trouble with Gravity", Grinnell College, Grinnell, IA (Feb. 2001)

48. Physics Colloquium: "Gravity, the BIG G!", Butler University, Indianapolis, IN (Dec. 1999)

49. Theory Seminar: "A Gravitational Order Parameter?", University of Maryland, College Park (October 1998)

50. Theory Seminar: "Yang Mills, Gravity and 2D String Symmetries", University of California, Berkeley (April 1998)

51. Theory Seminar: "Yang Mills, Gravity and 2D String Symmetries", Syracuse University (March 1998)

52. Theory Seminar: "Yang Mills, Gravity and 2D String Symmetries", City College, CCNY, NY,NY (March 1998)

53. Theory Colloquium: 'Yang Mills, Gravity and 2D String Symmetries", NSBP Conference, University of Kentucky (March 1998)

54. Physics Colloquium: " Do Physicists Play God?: The Big Bang", Coe College, Cedar Rapids, IA, (Feb. 1998)

55. Invited Participant: Aspen Center for Physics, (July 1997)

56. Theory Seminar: "The Action Principle and Quantum Mechanics", National Institute of Standards and Technology, Greenbelt, MD (June 1997)

57. Theory Seminar: "Noether's Theorem and Symmetry in Physics", Central Michigan University (March 1997)

58. Theory Seminar: "4D Physics From 2D Physics", University of Florida, Gainesville (September 1996)

59. Theory Seminar: "Coadjoint Orbits and Geometric Actions", American Mathematical Society, Iowa City, (March 1996)

60. Luncheon Address: NSBP Conference, Washington, D.C., (Mar. 1995)

61. Theory Seminar: "A Gravitational Theory Arising From 2D String Symmetries"', Iowa State University, (Sept, 1994)

62. Theory Seminar: "Building Physical Theories", Prairie View A & T (April 1994)

63. Theory Seminar: "Topological Defects in Physics", Mississippi State University (March 1994)

64. Public Lecture: "The History of Science: A Physicist's Viewpoint", Mississippi State University (March 1994)

65. Physics Colloquium: "The Structure of Theories in Elementary Particle Physics", North Carolina A & T, (March 1994)

66. Invited Participant: Mathematical Sciences Research Institute, Berkeley, CA (Jan 1994)

67. Theory Seminar: "Noether's Theorem in Physics", Carleton College, Carleton, MN. (March 1993)

68. Public Lecture: "The History of Science: A Physicist's Viewpoint", Carleton College, Carleton, MN. (March 1993)

69. Theory Seminar: "From Coadjoint to WZNW models and 2D Polyakov Gravity", University of Maryland, (March 1992)

70. Theory Seminar: "QCD and 2D Surfaces", Institute of Mathematical Sciences, Madras, India (Jan. 1992)
71. Public Lecture: "Contributions of Non-European Cultures to Science", University of Notre Dame and the Ford Foundation, (June 1991)
72. Theory Seminar: "Effective Actions and Coadjoint Orbits", Iowa State University, (Nov. 1991)
73. Theory Seminar: "Instantons and 2D Surfaces", University of Maryland, (Nov 1991)
74. Participant: "Symmetry and Strings" Conference, Stony Brook, NY (March 1991)
75. Colloquium: "Topology in Physics", The University of Iowa (April 1989)
76. Theory Seminar: "2D Supergravity from the Super Virasoro Algebra", University of Maryland (April 1989)
77. Theory Seminar: '2D Supergravity from the Super Virasoro Algebra", University of Miami (Feb 1989)
78. Theory Seminars: Various seminars at the Institute for Theoretical Physics, SUNY Stony Brook (1987-1989)
79. Visiting Scientist: Institute for Theoretical Physics, University of California at Santa Barbara (July-Aug 1986)
80. Theory Seminar: Several Seminars at the University of Florida, (1986-1987)
81. Invited Participant: Aspen Center for Physics, (June-July 1986)
82. Theory Seminar: "Covariant String Field Theory", Syracuse University (November 1985)
83. Invited Speaker: "Protons as Solitons", The National Technical Association, Houston, TX (July 1985)
84. Participant of the Theoretical Advanced Study Institute, Yale University (June-July 1985)
85. Participant at the Symposium on Anomalies, Geometry and Topology, Argonne National Laboratories (March 1985)
86. Invited Participant: The Lewes Center for Physics, Workshop on Solitons in Nuclear Physics (June, 1984)

Conference Organization/Administration

1. Bootcamp for Grad Careers, University of Iowa Graduate College (2021)
2. IINSPIRE LSAMP Conference Organizer (2018)
3. Organizing Committee: The 2007 Midwest Geometry Conference - In Honor of Thomas P. Branson (1953-2006) (May 2007)
4. Conference Organizer National Society of Black and Hispanic Physicist, String Theory Session: 2005

5. Conference Organizer (with Sylvester J. Gates) National Society of Black and Hispanic Physicist, String Theory Session: 2004

6. Organizer: (with John Beem and Thomas Branson) Gravitation: 10th Annual Midwest Geometry Conference (April 2002)

7. Organizer: (with Thomas Branson) Physical Perspectives: 10th Annual Midwest Geometry Conference (April 2000)

8. Organizing Committee: National Society of Black Physicists, 2003 Annual Conference, Atlanta, GA

TEACHING AT THE UNIVERSITY OF IOWA

Summary of Recent Teaching Assignments				
Semester/Yr	**Advisees**		**Courses Taught**	
	Undergrad	Graduate	Course Title	Students Enrolled
Spring 2009	3	5	29:276	9
			29:027	27
Fall 2009	3	5	29:273	14
Fall 2010	4	7	29:247	4
Spring 2011	4	5	29:28	25
Summer 2011	4	5	IBA Summer Session	21
Fall 2011	4	5	29:247	7
Spring 2012	5	7	29:196	12
	6	0	IBA 168:047:068	6
	0	6	029:281:019	6
	2	0	029:099:019	2
Summer 2012	0	2	29:247	2
Fall 2012	0	8	29:247	8
	7	0	IBA 168:047:068	7
	0	4	029:281:019	4
Spring 2013			29:273	15
Summer 2013			Group Theory	7
Fall 2013	3	5	29:29	17
			IBA 168:047:068	7
			029:281:019	4
Spring 2014			PHYS:4860:0001	12
			PHYS:7990:0019	5
			PHYS:4990:0019	1
			PHYS:2990:0019	1
			IBA:1047:0068	13
Fall 2014	3	5	PHYS:7740:0001	5
			IBA:1047:0068	4
			PHYS:7990:0019	4
Spring 2015	2	5	PHYS:7760	9
Fall 2015	2	4	PHYS:5710	7
	2	4	IBA:1041	4
	2	4	IBA:1041	6

Course History at Iowa in Chronological Order	
Semester	**Course Title and Number**
Fall 1989	Graduate Quantum Mechanics I (29:245)
Spring 1990	Graduate Quantum Mechanics II (29:246)
Fall 1990	Graduate Quantum Mechanics I (29:245)
Spring 1991	Graduate Quantum Mechanics II (29:246)
Fall 1991	Advanced Quantum Field Theory I (29:220)
Spring 1992	Advanced Quantum Field Theory II (29:221) Particle Physics (29:192)
Fall 1992	Physics for Scientists and Engineers I (29:17)
Spring 1993	Physics for Scientists and Engineers II (29:18)
Fall 1993	Physics for Physics Majors I (29:27)
Spring 1994	Physics for Physics Majors II (29:28)
Fall 1994	Physics for Physics Majors I (29:27)
Spring 1995	Physics for Physics Majors II (29:28) Group Theory (29:99)
Fall 1995	Undergraduate General Relativity I(29:99) Quantum Mechanics I (29:144)
Spring 1996	Undergraduate General Relativity II (29:99), Quantum Mechanics II (29:145)
Fall 1996	*On Developmental Leave*
Spring 1997	Graduate General Relativity (29:273)
Fall 1997	Electricity and Magnetism I (29:129)
Spring 1998	Electricity and Magnetism II (29:130)
Fall 1998	Electricity and Magnetism I(29:129)
Spring 1999	Electricity and Magnetism II (29:130) General Relativity I (29:99)

Course History at Iowa in Chronological Order Cont	
Fall 1999	College Physics (29:08)
Spring 2000	Physics of the Human Body - Physics From Head to Toe (29:105)
Fall 2000	Graduate General Relativity (29:273)
Spring 2001	Physics of the Body - Physics From Head to Toe (29:105)
Fall 2001	Quantum Mechanics I (29:144)
Spring 2002	Quantum Mechanics II (29:145) General Relativity I (29:105)
Fall 2002	*On Developmental Leave*
Spring 2003	Physics for Scientists and Engineers I (29:17)
Fall 2003	Electricity and Magnetism (29:129)
Spring 2003	Electricity and Magnetism (29:130)
Fall 2004	Physics III (Physics Majors) (29:029)
Spring 2005	Introduction to String Theory (29:248)
Fall 2005	Graduate Classical Electrodynamics (29:213) Readings in General Relativity (29:103)
Spring 2006	Graduate Classical Electrodynamics (29:214)
Fall 2006	Graduate Classical Electrodynamics (29:213)
Spring 2007	Graduate Classical Electrodynamics (29:214)
Fall 2007	Graduate Classical Electrodynamics (29:213)
Spring 2008	Undergraduate Classical Electrodynamics II (29:130) Physics of the Human Body - Physics From Head to Toe (29:105)
Fall 2008	Quantum Mechanics II (29:145)
Spring 2009	String Theory
Fall 2009	Physics I for Physics Majors Graduate General Relativity (29:273)
Fall 2010, Fall 2012	Quantum Field Theory I (29:247)
Spring 2011	Physics II for Physics Majors (29:28)
Spring 2012 Fall 2012	Computational Physics (29:196) Quantum Field Theory (29:247)
Spring 2013 Fall 2013	Graduate General Relativity (29:273) Physics III (29:29)
Spring 2014 Fall 2014	Computational Physics (29:196) Exotic Four Manifolds Physics of the Body (29:103) Quantum Field Theory

Distinct Courses Taught at Iowa *Introduced and Developed This Course*	
Course Title	**Semesters Taught**
Graduate Quantum Mechanics I (29:245)	Fall 1989, Fall 1990
Graduate Quantum Mechanics II (29:246)	Spring 1990, Spring 1990
Advanced Quantum Field Theory I (29:220, 29:247)	Fall 1991, Fall 2010, Fall 2012
Advanced Quantum Field Theory II (29:220,29.248)	Spring 1992, Fall 2011
Particle Physics (29:192)	Spring 1992
Physics for Scientists and Engineers I (29:17)	Fall 1992, Spring 2003
Physics for Scientists and Engineers II (29:18)	Spring 1993
Physics for Physics Majors I (29:27)	Fall 1993, Fall 1994, Fall 2009
Physics for Physics Majors II (29:28)	Spring 1994, Spring 2011
Group Theory (29:99)	Spring 1995, Summer 2013 (informal)
Undergraduate General Relativity I (29:99)	Fall 1995, Spring 1999, Spring 2002
Undergraduate General Relativity II (29:99)	Spring 1996, Fall 1999
Quantum Mechanics I (29:140)	Fall 1995, Fall 2001, Fall 2008
Quantum Mechanics II (29:141)	Spring 1996, Spring 2002
Graduate General Relativity (29:273)	Spring 1997, Fall 2000, Fall 2009, Spring 2013
Electricity and Magnetism I (29:129)	Fall 1997, 1998, 2003
Electricity and Magnetism II (29:130)	Spring 1998, 1999, 2004, 2008
College Physics (29:08)	Fall 1999
Physics of the Body (29:105)	Spring 2000, Spring 2001, Spring 2008
Physics for Physics Majors III (29:29)	Fall 2004
String Theory I (29:248)	Spring 2005, Spring 2009
Graduate Classical Electrodynamics I (29:213)	Fall 2005, Fall 2006, Fall 2007
Graduate Classical Electrodynamics II (29:214)	Spring 2006, Spring 2007
Computational Physics (29:197)	Spring 2012
Graduate Classical Mechanics (PHYS :5710)	Fall 2014, Fall 2016

Courses Developed and Introduced

- Advanced Quantum Field Theory I and II (1991)

  This course introduces Yang-Mills gauge theories, quantization of General Relativity, and String Theories. Topics include, Renormalization Group, Noether symmetries, quantum anomalies of classical symmetries, anomalous dimensions, symplectic geometry and Hamiltonian methods of field theory quantization.

- Physics For Physics and Astronomy Majors I and II (1993)

  This course was the first to establish a "home room" course for students majoring in physics and astronomy. The course focuses on more detail and in the development of physics and astronomy as an experimental and mathematical science. This course is now has four semesters of material.

- General Relativity for Undergraduates (1995)

  Physics today is understood through field theories. Undergraduates get a strong exposure to electricity and magnetism in their curriculum. However electrodynamics makes up only one of the

four known forces. Quantum field theories describing the nuclear forces are best left to graduate material but Einstein's theory of General Relativity as a classical theory of gravitation is ideal for a course following electrodynamics.

- Physics of the Body (2000)

  The importance of understanding biological systems through mathematics and physics has never been underestimated. This course was designed to bring the principles and mathematics of physics to biology and medicine.

- String Theory (2005)

  A formal course in string theory is introduced so that students are familiar with one of the most consistent mathematical theories known to date. The course takes students through the rigors of explaining the origins of string theory and how it naturally evolved into the framework it is in today.

- Group Theory for Physicists (1995) Representation theory and Group theory are essential to understanding the mathematical framework of modern physics. This course addresses group theory from a calculational point of view. Lie Algebras, Lie Groups, and representation theory are discussed.

- Exotic R^4 Manifolds (2014)

  In the late 80's and early 90's, Donaldson was able to use gauge theories to arrive at profound differences between differentiable four manifolds and other manifolds. The course takes us through the underpinnings of what lead to the uncountably infinite number of differentiable structures in four dimensions. The course leads up to Seiberg-Witten theory used in string theory and particle physics.

- Cosmology (2020)

  Cosmology has become a major area of research in the last two decades. In order to keep students aware of the changing landscape cosmology has been decoupled form General Relativity. This course is designed for advanced undergraduates and graduates students. The course is considered a core course for graduate students in the Astro track.

Research Students

University of Iowa Students Advised			
Degree Objective	Student Name	Years	Outcome
Ph.D.	Casandra Bogh	2018-2021	Graduated (with John Prineas)
Ph.D.	Calvin Mera	2015-2020	Graduated
M.S.	Manuel Martinez-Martinez	2016-2017	Graduated
Ph.D.	Kenneth Heitritter	2015-2021	Graduated
Ph.D.	Samuel Brensinger	2015-2020	Graduated
Ph.D.	Delalcan Kilic	2011-2017	Graduated
Ph.D.	Catherine Whiting	2010-2015	Graduated
Ph.D.	Bradly Button	2011- 2014	Graduated
Ph.D.	Da Xu (Math)	2007 - 2008	Graduated
Ph.D.	Tuna Yildirim	2007 - 2014	Graduated
Ph.D.	Chris Doran	2007 - 2018	Inactive
Ph.D.	Heather Bruch (Math)	2007	Transferred
Ph.D.	Ibrahima Bah	2006 - 2007	Transferred
Ph.D.	Kory Stiffler	2006 - 2010	Graduated
Ph.D.	Leo Rodriguez	2005 - 2011	Graduated
Ph.D.	Xiaolong Liu	2004 - 2012	Graduated
Ph.D.	Takeshi Yasuda	1996 - 2006	Graduated
M.S. and Ph.D.	Ralph Lano	1989 -1996	Graduated
M.S.	Lifiana Sumantri	2007- 2021	Graduates
M.S.	Joseph Modrick	1990 -1994	Graduated
M.S.	Jay Happel	1990 - 1993	Graduated
M.S.	Bob Bacus	1992 - 1998	Graduated
B.S.	Yiding Han	2015	Graduates
B.S.	Keshav Sutrave	2016	Graduated
B.S.	Kaitlyn DePena	2014	Graduated
B.S.	Seo Jun Lee	2012	Graduated
B.S.	Wade Bloomquist	2010-2012	Graduated
B.S.	Suzanne Carter	2010-2012	Graduated
H.S.	Hart Goldman	2010-2011	Graduated
B.S.	Maria Divoky	2005 - 2006	Graduated
B.S.	Stephen Gliske	2005 - 2006	Graduated
B.S.	Nichole Keifer	2005 - 2006	Graduated
B.S.	Sarah Klemuk	1996 - 2000	Graduated
B.S.	Joseph Evans	1997 - 2001	Graduated
B.S.	Antonio Bovia	1997 - 2001	Graduated
B.S.	Nadia Sifri	1993 - 1997	Graduated
B.S.	Laura Laberge	1992 - 1996	Graduated
B.S.	Jackie Coyne	1994 - 1999	Graduated
B.S.	David Reynolds	1994 - 1998	Graduated

Summer Theoretical Physics Session Advisees: Sessions held at Iowa and The University of Maryland				
Degree Objective	Student Name	Summer	Affiliation during session	Present Objective
Ph.D	Takeshi Yasuda	1999	Iowa	Graduated Ph.D. Iowa
B.S.	Carina Curto	1999-2000	Harvard University	Graduated Ph.D. Duke
B.S.	Dagny Kimberly	2000	Brown	Graduated Ph.D. Imperial
B.S.	Christina Zelano	2000	U.C. Santa Cruz	Ph.D. Berkeley
Ph.D.	William Linch	2000-2002, 2004	UMD	Post Doc SUNY
Ph.D.	Joseph Phillips	2001-2002	UMD	Postdoc @ UF
Ph.D.	Willie Merrill	2001-2003, 2006	UMD	Ph.D. @ UMD
B.S.	Antonio Bovia	2001	Iowa	Ph.D. UCSB
B.S.	Bjorg Larson	2001	Iowa	Ph.D. @ SUNY SB
B.S.	Daniel Chapman	2002	UMD	Ph.D. @ UMD CP
B.S.	Micah Hawkins	2002, 2004	Washington	Ph.D. @ U. Mich.
B.S.	Jessica Till	2003	Vassar College	Ph.D @ Univ. Minn.
B.S.	Matt Barr	2004	University of Maryland	Ph.D. @ Harvard
B.S.	Alexandra Curtin	2004	University of Maryland	Ph.D. @ Penn State
B.S.	Tim Dulaney	2004	University of Maryland	Undergrad @ UMD
B.S.	Ninad Jog	2004, 2005	University of Maryland	Undergrad @ UMD

Summer Theoretical Physics Session Advisees: Continued				
Degree Objective	Student Name	Summer	Affiliation during session	Present Objective
B.S.	Erin Lynch	2004	UMD	UMD
High School	Tencia Lee	2004	High School	Cal Tech
B.S.	Stephen Colodner	2004, 2005	UMD	
B.S.	Andrew Lytle	2004	UI	Grad @ U.of Wash.
B.S.	Kaustabh Singh	2004	U. Bahamas	U of Bahamas
B.S.	Ibrahima Bah (REU)	2005	Lafayette College	Lafayette College
B.S.	Jeffrey Hansen (REU)	2005	U. of Minn, Morris	Graduated
B.S.	Nichole Kiefer	2005	UI	Graduated from UI
B.S.	Osaro Harriott	2005, 2006	Morgan State	Morgan State
High School	Cris Negron	2005	High School	Univ. of Virginia
B.S.	Brislin Thomas	2005	UMD	UMD
B.S.	Benjamin Dalgaard	2005	UI	Graduated
B.S.	Nicholas Romano	2005	UI	Graduated
B.S.	Quentin Collier	2005, 2006	UI	UI
B.S.	Stephen Gliske	2005	UI	Ph.D. @ U of Mich
B.S.	Maria Divoky	2006	UI	Graduated
Ph.D.	Xiaolong Liu	2005, 2006	UI	Ph.D. @ UI
Ph.D.	Leo Rodriguez	2005, 2006, 2008, 2009	UI	Ph.D. @ UI
Ph.D.	Kory Stiffler	2006 ,2009	UI	Ph.D. @ UI
B.S.	Heather Bruch	2006	St. Edward	St. Edwards
B.S.	Sannah Ziama	2006	U. Ind.	Purdue UI/Purdue
High School	Drake Childress	2006	High School	Stanford
High School	David Henderson	2006	High School	UMD
B.S.	Renee Harton	2006	MIT	Undergrad @ MIT
B.S.	Scott Kathrein	2006	U.Ill/Urbana	U.Ill/Urbana
High School	Jonathon Samorajski	2006	High School	Alaska
B.S.	William Stem	2006	UMD	UMD
High School	Jay Delgado	2006	UI	B.S. @ UI
B.S.	Advait Nagarkar	2006	UMD	UMD
High School Teacher	Mary Kemp	2006	John Hersey HS	—-
B.S.	Boanne MacGregor	2008	UI	Grinell College
B.S.	Luke Wassink	2008	UI	UI
B.S.	Ethan Cowen	2009	UMD	
High School	James Parker	2008, 2009	High School	UMD
UMD	John Watts	2009	UMD	UMD

Ph.D/M.S Final Exam Committees			
Degree	Student Name	Years	Department
M.S.	Joseph Modrick	1994	Physics
M.S.	Jay Happel	1993	Physics
M.S.	Bob Bacus	1998	Physics
M.S.	Brian Meland	2006	Physics
Ph.D.	Kiah Lim Beh	1999	Science Education
Ph.D.	Randy Wills	1992	Physics/Math
Ph.D.	Larry Peterson	1998	Math
Ph.D.	Phillip Moore	1990	Physics
Ph.D.	Gustavo Ordaz-Hernandez	1996	Physics
Ph.D.	Dal Soo Oh	1998	Physics
Ph.D.	Lara Pasquali	1999	Physics
Ph.D.	Maria Roco	1994	Physics
Ph.D.	Ralph Lano	1996	Physics
Ph.D.	Steve Niermann	2000	Physics
Ph.D.	Mehmet Aykac	2000	Physics
Ph.D.	Doo Jin Hong	2004	Mathematics
Ph.D.	Takeshi Yasuda	2005	Physics
Ph.D.	Leroy Magwood	2009	Chem. & Biochem. Engineering
Ph.D.	Gbenga Ajiboye	2011	Chem. & Biochem. Engineering
Ph.D.	Daping Du	2011	Physics
Ph.D.	Yuseon Jueng	2011	Physics
Ph.D.	Cecil Flournoy	2011	Mathematics
Ph.D.	Leo Rodriguez	2011	Physics
Ph.D.	Xiaolong Liu	2012	Physics
Ph.D.	Elham Bagheri	2012	Counseling Psychology
Ph.D.	Mollie Burke	2013	Counseling Psychology (Comps)
Ph.D.	Scott Griffiths	2013	Physics (comps)
Ph.D.	Yuzhi Liu	2013	Physics
Ph.D.	Bradly Button	2014	Physics
Ph.D.	Tuna Yilidrim	2014	Physics
Ph.D.	Catherine Whiting	2015	Physics
Ph.D.	Mollie Burke	2015	Counseling Psychology
Ph.D.	Gordan Aiello	2016	Mathematics

Other Instructional Activities - Secondary Summer Training Program (SSTP), Summer Higher Educational Opportunity Program (SHROP), Summer Research Opportunity Program (SROP), Research Experience for Undergraduates (REU)

University of Iowa Students Advised for SROP and SSTP		
Student Name	Year	UI Program
Sannah Ziama	2006	SROP
Scott Kathrein	2006	REU
Heather Bruch	2006	SROP
Quentin Collier	2005, 2006	SROP
Ibrahima Bah	2006	REU
Moira Truesdell	1998	SSTP
Starlene McDuffie	1998	SSTP
Sharon Kim	1997	SSTP
Tom Cox	1997	SSTP
Kelly Nash	1997	SROP
Sharon Smith	1996	SROP
Richard Zentko	1994	SSTP
Rachel Williams	1994	SSTP
Ivan Rosero	1993	SSTP
Dennis Ruhl	1993	SSTP
Erik Sachs	1991	SSTP
John Veson	1991	SSTP

SERVICE

1. Department

Plasma Theory Search Committee: Fall 2007 - Spring 2008

GAANN Grant PI for Department: 2006

Outreach Co-Director (with Dale Stille): Spring 2005 - Present

Café Scientifique Iowa City Founder/Organizer: Fall 2005 - Present

Society of Physics Students Faculty Adviser: 1993 - 1998, Fall 2005- Present (with Cornelia Lang)

Condensed Matter Theory Search Committee: Fall 2004 - Spring 2005

World Year Physics 2005 Committee: Fall 2004 - Winter 2005

Departmental Computing Committee: Nov 2003 - 2007

Retention Subcommittee: Oct 2003 - Fall 2005

Educational Operations - Sept 2003- Jan 2004

GAANN Grant PI for Department: 2005

GAANN Grant PI for Department: 2004

Colloquium Chair: 2003 - 2005, 2011 - 2012

Department Library Committee: Sept. 1990 - Present

Recruitment Talks/Travel 2-3 per year

Qualifying Exam Committee: 2000 - 2001

Recruitment Subcommittee: 1998-2000

Undergraduate Brochure development: 1998-1999

Departmental Executive Committee: 1997 - 1999, 2008-2010, 2014-2016

Department Computer Advisory Committee 1997-1998

Undergraduate Liaison: 1991-1996

Departmental Ad Hoc Strategic Planning Committee, Chair, 1997-1998

Departmental Graduate Admissions Committee: Sept. 1992 - 1996, 2011 - Present

Undergraduate Computing Facilities Adviser: Spring 1993 - 1996

High Energy Theory System Administrator (Sept. 1989 - Oct. 2003)

Preprint Library Administrator: May 1991-June 1997;

Physics Department Educational Operations: Sept. 1991 - 1993

Physics Department Search Committee (Laser Center): 1993

Physics Department PPB Committee: 1990 - 1991

2. University

CLAS Outreach and Engagement Task Force: 2018 -2019

University of Iowa Librbary Review: May 2021

UCM Search Committee: May-June 2014

LSAMP Iowa: Advisory Board 2013- Present

Certificate for Clinical and Translational Sciences Administrator: 2013-2018

Co-developed the Undergraduate Certificate for Clinical and Translational Sciences 2012-2013

Co-developed the new Fast-Track Program in Biochemistry and Microbiology for BS-PhD 2011-2012

Educational Advisory Committee for Institute of Clinical Translational Science: 2011-2013

Office of Provost Coordinating Council on STEM: 2011

Executive Vice President/Provost Search Committee: 2007

Co-Investigator of the Iowa Biosciences Academy: 2018 - Present

Co-Director of the Iowa Biosciences Academy: 2005- 2018

Opportunity at Iowa Speaker/Presenter (2004): 10 May, 23 Sept, 22 Oct, 4 Nov, 18 Nov, 3 Dec.

Belin Center, Information and Technology Fair (1998,1999,2001, 2004, 2005, 2007)

Hawkeye Visiting Days Participant (1998-1999)

Opportunity at Iowa Search Committee 1998

Presidential "Core Values" Committee 1997

Collegiate Faculty Developmental Leave Selection Committee, 1997

Presidential Scholars Selection Committee (1996 - 1998)

FIPSE planning committee (1995-1997)

Search Committee for Director of Special Support Services: 1994

3. Professional

- National Society of Black Physicists: NSBP Net monitor (1993 - 2002)
- National Society of Black Physicists: Sloan Fellowship committee (2005)
- National Science Foundation Review Panel: Jan 2005
- Reviewer for Mathematical Reviews (since 1990)
- Referee for International Journal of Modern Physics (since 1991)
- Referee for Physical Review Letters and Physical Review (since 1986)
- Book Reviewer for Norton Publications (since 1995)
- Book Reviewer for Saunders College Publishing (1998)

- Referee for IOP Publications (since 1998)
- ACT test reviewer (since 1995)
- GRE test writing and reviewer, Physics Test (since 1995)
- Book Reviewed: "Quantum Field Theory" by L.H. Ryder, in the American Scientist, Jan. 1986
- Member American Physical Society (since 1985)
- Member National Society of Black Physicists (since 1990)
- Member American Association of Physics Teachers

4. Public Engagement (Selected)

- Speaker: Family Adventures in Science Oct. 2005, Apr. 2006, Oct. 2006
- Speaker: Café Scientifique "So What Is String Theory Anyway?" 8 Dec. 2005
- Hawk Eyes On Science - Presenter/demonstrations, more than 100 presentations to schools and organizations since 2005. Hawk-Eyes on Sciences
- Weekly Tutoring: MESA/Iowa City Community School District (Fall 2000 - Present)
- "Minority Speaker Forum:" Oct, 2004, City High School, Iowa City, IA
- Organizer for Davenport Schools System: SECME - Accurate Reckoning Program Fall 2003 - 2005
- Judge: L-AMP, STEM Conference, Baton Rouge, LA (Nov. 2002)
- Invited Talk: "The Nature of Physical Theories," John Hersey High School, Arlington, IL (May, 2001)
- Invited Talk: "The Nature of Physical Theories," Northwest Junior High, Coralville, IA (1999 - 2004)
- Job Shadowing: Jessica Till, Northwest Junior High, Iowa City, IA (May, 1998)
- Job Shadowing: Thomas Cox, Muscatine High School, Muscatine, IA (May, 1997)
- Commencement Address: John Baptist De Sable High School (with Prof. Victor Rodgers), Chicago, IL (June, 1995)
- Invited Talk: "The Nature of Physical Theories," Regina High school, Iowa City, IA (May, 1995)
- Science Fair Judge, Columbia, MS (March, 1994)
- Pen-Pal Partnership Participant: University of Iowa (1990-1993)
- Invited Talk: King-Perkins Elementary School, Des Moines, IA (Mar. 1992)
- Invited Talk: "A Brief History of Science and Society", Great Books Workshop, Iowa City, IA (June, 1993)
- Invited Talk: Invention Convention, Des Moines Area Schools (March, 1991)
- Invited Talk: King-Perkins Elementary School, Des Moines, IA (March, 1991)

- Invited Talk: Burlington High School, Burlington, IA. (April, 1991)
- Invited Talk: Burlington High School, Burlington, IA. (Apr. 1992)
- Invited Talk: Donnelson High School, Donnelson, IA, (May, 1991)
- Invited Talk: J. Phillip Randolph High School, NY, NY (Sept. 1988)
- Mentor Program Participant: SUNY Stony Brook (1987-1989)
- Peer-Tutor, Higher Educational Opportunity Program: Syracuse University (1981-1982)