CURRICULUM VITAE

OF
PHILIPPE RUKIMBIRA, MATHEMATICS

EDUCATION

Penn State University	Mathematics	Ph-D, 1991
National University of Rwanda	Mathematics-Physics	MS, 1983
National Pedagogical Institute	Mathematics-Physics	BS, 1981

FULL-TIME ACADEMIC EXPERIENCE

Florida International University	Full Professor	Mathematics	08/04-Present
Florida International University	Associate Professor	Mathematics	05/96-08/04
Florida International University	Assistant Professor	Mathematics	08/91-05/96
Penn State University	Teaching Assistant	Mathematics	08/86-08/91
National University of Rwanda	Principal Lecturer	Mathematics	10/83-08/86

MATHEMATICAL PUBLICATIONS

Papers in Professional Journals (all articles have been refereed)

1. Philippe Rukimbira (with Hamidou Dathe), *Contact deformations of nonsingular, closed 1-forms on torus bundles over the circle*, Advances in Geometry, no 1 (2011), 131-137.
2. Philippe Rukimbira, Volume and Energy of Reeb *vector fields*, Proceedings of the conference Geometry And Physics V, University Check Anta Diop, Dakar, Senegal. 2008.
3. Philippe Rukimbira, *The 1-nullity of sasakian manifolds*, Riemannian Topology and Geometric Structures on Manifolds: Galicki, Krzysztof; Simanca, Santiago (Eds.), Progress in Mathematics Vol. 271, Birkhäuser 2008, pp. 153-159.
4. Hamidou Dathe and Philippe Rukimbira, *Fibrations and contact structures*, International Journal of Mathematics and Mathematical Sciences **4** (2005), 555-560.
5. Philippe Rukimbira, *Rank and K-nullity of Contact Manifolds*, International Journal of Mathematics and Mathematical Sciences **20** (2004), 1025-1034.

6. Philippe Rukimbira, *Energy, volume and deformation of contact metrics*, Contemporary Mathematics, Recent Advances in Riemannian and Lorentzian Geometries, Contemporary Mathematics, vol. 337, American Mathematical Society, Rhode Island, 2003, pp. 129-143.
7. Hamidou Dathe and Philippe Rukimbira, *Foliations and contact structures*, Advances in Geometry **4** (2004), no 1, 75-81.
8. Philippe Rukimbira, *Criticality of contact unit vector fields*, Infinite dimensional Lie groups in geometry and representation theory (Washington, DC, 2000), 105-115, Word Scientific Publishing, River Edge, NJ, 2002.
9. Philippe Rukimbira, *Criticality of K-contact vector fields*, Journal of Geometry and Physics **40/3-4** (2001), 209--214.
10. Philippe Rukimbira, *Correction to Spherical rigidity via contact dynamics*, Bulletin of the Belgian Mathematical Society, Simon Stevin **8** (2001), no. 1, 147--153
11. Philippe Rukimbira, *Spherical rigidity via contact dynamics*, Bulletin of the Belgian Mathematical Society **,** Simon Stevin **7** (2000), no. 4, 563--569.
12. Philippe Rukimbira, *Contact metric geometry characterization of the odd-dimensional spheres*, Contemporary problems in Mathematical Physics (Cotonou, 1999), 138--141, World Scientific Publishing, River Edge, NJ, 2000.
13. Philippe Rukimbira, *Topology and characteristic closures of K-contact manifolds*, Differential geometry and its applications (Brno, 1998), 399--412, Masaryk University, Brno, 1999.
14. Philippe Rukimbira, *A characterization of flat contact metric geometry*, Houston Journal of Mathematics **24** (1998), 409--414.
15. Philippe Rukimbira, *On K-contact manifolds with minimal number of closed characteristics*, Proceedings of the American Mathematical Society **127** (1999), 3345--3351.
16. Philippe Rukimbira, *Topology and closed characteristics on K-contact manifolds*, Bulletin of the Belgian Mathematical Society, **2** (1995), 349--356.
17. Philippe Rukimbira, *Chern-Hamilton's conjecture and K-contactness*, Houston Journal of Mathematics **21, no 4** (1995), 709--718.
18. Philippe Rukimbira, *Vertical sectional curvature and K-contactness*, Journal of Geometry **53** (1995), 163--166.
19. Augustin Banyaga and Philippe Rukimbira, *On characteristics of circle invariant presymplectic forms,* Proceedings of the American Mathematical Society **123** (1995), no. 12, 3901--3906.
20. Philippe Rukimbira, *The dimension of leaf closures of K-contact flows,* Annals of Global Analysis and Geometry **12** (1994), 103--108.
21. Augustin Banyaga and Philippe Rukimbira, *Weak stability of almost regular contact foliations*, Journal of Geometry **50** (1994), 15--27.
22. Philippe Rukimbira, *Some remarks on R-contact flows,* Annals of Global Analysis and Geometry **11** (1993), 165--171.

Monographs

1. Augustin Banyaga and Philippe Rukimbira, *An invitation to Contact Geometry*, Mimeographed notes, 1991.

PRESENTED PAPERS AND LECTURES

1. May 2012, Invited Lecturer, CIMPA Dakar . Introduction to Sasakian Geometry.
2. Penn State University Topology and Geometry seminar: *The 1-nullity of sasakian manifolds*. December 10, 2009.
3. *Deformation of closed, nonsingular 1-forms into contact forms on torus bundles over the circle*. Special session of the AMS eastern sectional meeting at University Park PA, October 2009.
4. *Linear deformation of closed, nonsingular 1-forms into contact forms on torus bundles over the circle*, FIU Geometry seminar, June 12, 2009.
5. *Riemannian manifolds with multiple contact metric structures*, Penn State Symplectic Geometry seminar, December 11, 2008.
6. *The 1-nullity of sasakian manifolds*, AMS special session on riemannian and lorentzian geometries, Wesleyan University, Middletown, CT. October 11-12, 2008.
7. A brief history of contact geometry and topology, February 12, 2008. Miami Dade College, Wolfson Campus, Black History Month celebration.
8. *Sasakian Geometry*, Mini-course during the conference Geometry and Physics V, Dakar, Senegal. May 2007.
9. Analysis Seminar at FIU, *Torus fibrations and Contact structures*. April 06, 2007.
10. K-nullity interactions with contact metric geometry; 2004 Fall Western Section Meeting of AMS. Albuquerque, New Mexico, October 16-17, 2004. Invited speaker, AMS special session on Interactions in Riemannian Geometry.
11. *Some distributions on contact manifolds*. Two lectures, FIU Geometry seminar. Spring 2003.
12. *Harmonic sections in contact geometry*; Joint Mathematics Meetings, Baltimore, Maryland, 01/15-18, 2003. Invited speaker, AMS Special session on Recent advances in Riemannian and Lorentzian Geometries.
13. *Rank and K-nullity of contact manifolds*; Center for Geometry and Mathematical Physics, Penn State University, 03/19/2003.
14. *Energy of unit vector fields with isolated singularities*. Two lectures, FIU Geometry seminar. Fall 2002.
15. *Morse-Bott theory and contact geometry*; Three lectures in an advanced graduate course in Differential Topology, Department of Mathematics, Penn State University, 04/2002.
16. *Criticality of unit contact vector fields*; Two lectures in Geometry and Topology Seminar, Department of Mathematics, Penn State University, 01/2002.
17. *Criticality of contact vector fields*; Foliations and Geometry 2001, Rio De Janeiro, Brazil. 08/2-11, 2001.
18. *Critical unit vector fields*: a brief survey. One lecture, FIU Geometry seminar. Fall 2000.

19. *Critical unit vector fields: A brief survey*, International conference on Infinite dimensional Lie groups in geometry and representation theory, Howard University, 08/17-21, 2000.
20. *Contact metric geometry characterization of the odd-dimensional spheres.* One hour lecture in the Workshop on Contemporary Problems in Mathematical Physics. IMSP, Cotonou, Benin, 10/31-11/5, 1999.
21. *Trailing sphere theorems.* One lecture in FIU Analysis and geometry seminar. 1998-99.
22. *Topology and characteristic closures of K-contact manifolds*; Satellite conference of International Congress of Mathematicians (ICM) in Berlin. DGA 98, Brno, 08/10-14, 1998.
23. *A characterization of flat contact metric geometry*. One lecture in FIU Analysis and Geometry seminar. 1997-98.
24. *Harmonic instability in K-contact geometry*. Three lectures in the FIU Analysis and Geometry seminar. Spring 1996.
25. *Harmonic maps in contact geometry.* Two lectures in FIU Analysis and geometry seminar. Fall 1995.
26. *Topology and Characteristic closures on K-contact manifolds*; Howard University, Washington DC, 04/1995.
27. *Topology and closed characteristics of K*-contact manifolds. Three lectures in FIU Analysis and geometry seminar. Fall 1994.
28. *Vertical sectional curvature and K-contactness;* University of Miami, Geometry seminar. Fall 1993.
29. *The geometry of the Gauss map and the rigidity of the sphere.* Address to the Mathematical Society at FIU. Fall 1993.
30. *Vertical sectional curvature and K-contactness;* Two lectures in FIU Analysis and geometry seminar. Spring 1993.
31. *From contact to K-contact;* Penn State's Topology and Geometry seminar. June 1993.
32. *R-contact manifolds and flows;* Invited speaker, 879th meeting of the AMS, Special session on Variational Calculus on manifolds. Knoxville, Tennessee. March 25-27, 1993.
33. *R-contact manifolds and flows*; Howard University, Washington DC, 11/1992.
34. Five lectures in FIU Analysis and geometry seminar. *Some remarks on R-contact flows; Foliate vector fields and basic functions on contact manifolds; Contact geometry and Quantization (two lectures); Some nontrivial cohomology classes in Contact geometry*. Fall 1992.
35. *An invitation to contact geometry*. Three lectures in FIU Analysis and geometry seminar. Spring 1992.
36. *Hypersurfaces in Euclidean spaces,* California Polytechnic State University, San Luis Obispo, California. May 1991.
37. *Introduction to Symplectic Algebra*, Bowdoin College, Brunswick, Maine. April 1991.

WORK IN PROGRESS

Preprints

1. Contact deformations of closed 1-forms on torus bundles over the circle, 2008
2. Riemannian manifolds with multiple contact metric structures (with Draghici)

Research in Progress

1. Contact metric stability.
2. Deformability and hypo-ellipticity of closed nonsingular one-forms on contact manifolds.
3. Deformation of foliation forms into contact forms.

Grant Proposals

1. Co-principal Investigator, *NSF/CBMS regional conference in the mathematical sciences -The geometry of torus action on symplectic and contact manifolds*. National Science Foundation, 2002.
2. Co-principal Investigator, *Graduate Assistance in Areas of National Need*. US Department of Education, 2002.
3. FIU-Graduate Teaching Fellows in K-12 Education, NSF, 2005.
4. Co-principal investigator, *Get Educators in Mathematics and Science, (GEMS)*, NSF 2006.
5. Co-principal investigator, *Get Educators in Mathematics and Science, (GEMS)*, NSF 2007.
6. Principal Investigator, Mathematics Education in Geometry and Algebra for Middle School (MEGA-MS), NSF 2008.
7. Co-PI, Get educator in Mathematics and Science, GEMS. NSF 2008

Funded Research

1. Co-PI, Get Educators in Mathematics and Science, GEMS. NSF 01/01/2009-01/01/2014. $ 749,976.00
2. Co-principal Investigator, *CSEMS-CS, ENG and MATH Scholarship*s. National Science Foundation, 08/15/2004 to 08/15/2008. $400,000.00
3. Co-principal Investigator, *CSEMS-CS, ENG and MATH Scholarship*s. National Science Foundation, 08/2001 to 07/31/2006. $386,380.00

PROFESSIONAL HONORS, PRIZES, FELLOWSHIPS

1. UNESCO research fellowship at PSU. 1984-1985.

University

1. September 2008 to Present: Member of the College of Education's Professional Education Partnership Council (PEPC).
2. April 15, 2005: Appointment to Dissertation advisor Status within the Graduate Faculty of Florida International University.
3. April 2005 and May 2004, Student Conduct and Conflict Resolution: Certificate of Appreciation for Outstanding Service, Dedication and Commitment to the Judicial Hearing Committee for the 2004-2005 and 2003-2004 academic years.
4. December 2003: Presidential Merit Award. Base salary increase, $4,000.00
5. September 22, 2003: Appointment to the Graduate Faculty of Florida International University.
6. Spring 2002. One semester, full pay sabbatical leave.
7. April 1993. Certificate of Appreciation from FIU's Career Planning and Placement Center for my contribution to the Cooperative Education Program.

Community

1. *Certificate of Appreciation* for my Participation as a Special Awards Judge for National Aeronautics and Space Administration, 2004 Intel International Science and Engineering Fair.
2. *Certificate of Appreciation* in recognition of outstanding service and invaluable contributions as a judge for NASA in support of 2003 (26^{th}) NAACP ACT-SO Science Competition.
3. *Certificate of Appreciation* in recognition of my dedication to the students of Hialeah-Miami Lakes Senior in honor of Mathematics Collegiate Day, March 29, 2000.
4. *Certificate of Appreciation* for the dedication to the students of Barbara Goleman senior high school by my participation in *Mathematics Collegiate Day*. March 16, 1999.
5. *Certificate of Appreciation* in recognition of dedicated service to the *42^{nd} Annual State Science and Engineering Fair of Florida.* April 1997.

The profession

1. Member of the Editorial Board: African Diaspora Journal of Mathematics.
2. Member of the Scientific Council for the Doctoral School of Mathematics, University Cheikh Anta Diop, Dakar, Senegal.

OTHER PROFESSIONAL ACTIVITIES AND PUBLIC SERVICE

1. January 2012: Refereed a paper for ADJM
2. Member, Mathematics-Math-Education Hiring Committee, March-April 2012

3. Academic year 2011-2012: Chair, Department Hiring Committee
4. November 2011, One paper refereed for Afrika Mathematica.
5. July 2011: Refereed one paper for Kyungpook Mathematical Journal
6. June 2011: One paper refereed for Proceedings of Edinburgh Math. Society.
7. Mars 2011: One paper refereed for ADJM
8. Academic Year 2010-11: Chair, Departmental Hiring Committee
9. Member, Mathematics-Math-Education Hiring Committee, April, 2011
10. Academic year 2010-2011: Member of NCAA Governance & Compliance Subcommittee at FIU.
11. Participant: Cornell Topology Festival, May 7-10, 2010
12. Mars 2010, one review for Mathematical reviews
13. Co-organized the special session Symplectic, Contact and Complex structures on manifolds. AMS eastern sectional meeting #1052, Penn State University. October 24-25, 2009.
14. Refereed a paper for the Bulletin of the Malaysian Mathematical Sciences Society, August 2009
15. Participant: International Symposium on Differential Geometry in honor of Marcos Dajczer on his 60^{th} birthday, August 17-21, 2009; IMPA, Brasil.
16. Participant: Cornell Topology Festival, May 1-4, 2009.
17. Attended the Texas Geometry and Topology Conference, February 20-22, 2009; University of Houston, Texas.
18. Co-organizer of the AMS special session on Riemannian and Lorentzian Geometries, Middletown, CT; October 11-12, 2008.
19. Visitor, Université Cheikh Anta Diop, Dakar, Senegal. 08/5-08/22. Mini-course: *Introduction to sasakian geometry*.
20. Refereed three papers for African Diaspora Journal of Mathematics, March 2008.
21. Attended the Texas Geometry and Topology Conference, February 2008, Texas Tech University, Texas.
22. Refereed a paper for International Journal of Mathematics, February, 2008.
23. Refereed a thesis for University of Abidjan Cocody, February 2008.
24. Refereed an article for Differential Geometry and its Applications, 10/2007.
25. Grant proposal review for Georgian National Science Foundation, 10/2007.
26. TOKTEN-Rwanda consultant at NUR, funded by UNDP/UNV, June 2007.
27. Refereed an article for Afrika Mathematica, March 2007.
28. Refereed an article for Quaestiones Mathematicae, November 2006.
29. Refereed an article for Afrika Mathematica, November 2006.
30. Blackwell-Tapia Conference, Institute for Mathematics and Its Applications, University of Minnesota. November 3-5, 2006. Funded by IMA.
31. Conference on Geometric Structures on Manifolds, University of New Mexico, October 10-14, 2006
32. Since Fall 2006, Departmental mathematics advisor.
33. Acting Department of Mathematics Chairman, July-August 2006.
34. TOKTEN-Rwanda consultant at NUR, funded by UNDP/UNV, May 2006.
35. Co-organizer, AMS meeting: special session, Geometry of Riemannian manifolds with additional structures, April 1-2, 2006; Florida International University.

36. Co-organizer, AMS Spring Southeastern Meeting, April 1-2, 2006, Florida International University.
37. Refereed an article for IMHOTEP: Journal Africain de Mathe?matiques Pures et Appliquee?s. April 2006.
38. Refereed an article for The African Diaspora Journal of Mathematics, August 2005.
39. Attended the Cornell Topology Festival, May 6-9, 2005.
40. Refereed an article for Afrika Mathematica, April 2005.
41. Refereed an article for Vietnam Journal of Mathematics, January 2005.
42. Refereed an article for Quaestiones Mathematicae, November 2004.
43. Colloquium organizer and host. September 24, 2004. Extensions of the Hofer metric. Speaker: Professor Augustin Banyaga, Penn State University.
44. Refereed an article for International Journal of Mathematics and Mathematical Sciences, September 2004.
45. Member of the FIU Athletic Council, Fall 2004---.Present
46. Refereed a paper for Differential Geometry and its Applications, September 2004.
47. Developmental Review: Geometry with Geometry Explorer, by Hvidsten. May 2004.
48. NASA Judge for the 2004 Intel International Science and Engineering Fair (ISEF), Portland, Oregon, May 10-13, 2004.
49. Judge for Golden Drum Scholarship Program, University of Miami. March 13, 2004
50. Refereed an article for Afrika Mathematica, February, 2004.
51. Member of the American Mathematical Society.
52. Co-organizer of the AMS special session on Geometric Structures on Manifolds. Joint mathematics meetings, Phoenix, Arizona. January 2004.
53. Master's Thesis Committee member for Shaniqua Fernander, *Non-Cooperative Game Theory*. December 2003.
54. Master's Thesis Committee member for Lifeng Feng. *On Normal Families of Meromorphic Functions*. November 2003.
55. Individual studies, Anique Brown. MTG 3212: College Geometry. Fall 2003.
56. Refereed an article for International Journal of Mathematics and Mathematical Sciences. Fall 2003.
57. Have reviewed 8 papers for Mathematical Reviews.
58. NASA Judge for NAACP 26th National Afro-Academic, Cultural, Technological and Scientific Olympics (ACT-SO) Competition, Miami Beach, Florida. July 9-12, 2003.
59. Judge for Golden Drum Scholarship Program, University of Miami. March 15, 2003.
60. Faculty representative to the University Judicial Committee. 2002-Present.
61. Faculty advisor for the student's organization APAAC (Association for People of African Ancestry and Culture). 1996-2000.
62. Course coordinator: MTG 5326: Algebraic Topology.
63. Member Departmental Ph-D feasibility Committee. Spring 2003-present.
64. Member, departmental Merit Raises Committee. Summer 2003.
65. Graduate Program Director, Department of Mathematics. 2002-2004.

66. Master's Thesis Committee for Yoon Suk Yi. *Navier Stokes Equations and finite elements method*. April 2001.
67. Judge for MATHCOM 01, organized by The American Society for the Communication of Mathematics. Miami Museum of Science. April 07, 2001.
68. Colloquium organizer and host. March 09, 2001. An invitation to locally conformal symplectic geometry. Speaker: Professor Augustin Banyaga, Penn State University.
69. Judge, Mathematics section of South Florida Science and Engineering Fair. Cutler Ridge Mall. February 13, 2001.
70. Master's Thesis Committee member for Richard Whittaker. *A study of bifurcation*. December 2000.
71. Departmental recruitment committee. 2000-2001.
72. Acting Mathematics Department Chairman, July 2000.
73. Departmental Faculty Adviser, Summer 2000.
74. Chairman of the departmental Recruitment committee, 1999-2000.
75. Participated in the workshop: *''Forum on Mathematics in Africa: Problems and solutions"*. International Center for Theoretical Physics, Trieste, Italy, 10/5-6/1999.
76. Visit and speech to Hialeah Miami Lakes Senior High School in connection with Mathematics Collegiate Day. March 1999.
77. DEA (Advanced Studies Diploma) Thesis committee for Gilbert Hounkunou. IMSP, Cotonou, Benin. 1999.
78. Colloquium organizer and host. January 15, 1999. *The total scalar curvature as symplectic invariant and related results.* Speaker: Professor David E. Blair, Michigan State University.
79. Visit and speech to Barbara Goleman Senior High School in connection with Mathematics Collegiate Day. March 1998.
80. Refereed two papers for the mathematics journal Afrika Mathematica. Fall 1998.
81. Member of the Recruitment committee, 1998-1999.
82. Directed a Master's Thesis for Liang Liu. *On isomorphic unimodular groups*. 1997-1998.
83. Member of the departmental Human Resources Committee. 1997-1998
84. Refereed an article in book: Advances in Geometry, Summer 1997.
85. Attended the NSF-CBMS Conference, Florida Atlantic University. 07/9-07/13, 1997. *The Monge-Ampere Equation: Applications to Geometry and Optimization*. Principal lecturer: Professor Luis Caffarelli, University of Texas at Austin.
86. Judge for the 42nd Annual State Science and Engineering Fair of Florida. Broward Convention Center, Ft Lauderdale, Florida. April 4th, 1997
87. Visit and speech to Barbara Goleman Senior High School in connection with Mathematics Collegiate Day. February 1997.
88. Independent studies, Liu Liang. MTG 5326, Algebraic Topology. Summer 1997
89. Invited to and attended the Conference on Low Dimensional Topology, in honor of Professor Steve Armentrout, Penn State University, May 9-11, 1996.
90. Master's Thesis committee for Jose Luis Nabut. *Point proportional and convex clustering admissibility.* 1996.
91. Departmental library committee. 1996-1997.

92. Department recruitment committee. 1994-1995 and 1995-1996.
93. Independent studies, Nicole Murphy and Kimberly Shepard. MAA 4211: Advanced Calculus. Fall 1995.
94. Master's Thesis committee for Witny Librun. *Global integrability of a class of vector fields*. 1995.
95. Departmental Teaching Incentive Program (TIP) committee member. 1993-1994.
96. Visiting instructor's teaching evaluation. Ana Wlodarczyk. 11/10, 1994. Course: MGF 1202. Finite Mathematics.
97. Independent studies, Macky Manchola. MAA 3200, Introduction to Analysis. Spring 1993.
98. Departmental library representative committee. 1992-1993.
99. Departmental Analysis and Geometry Seminar coordinator. 1992-1994.
100. Successfully supervised a Master's thesis: Pontien Mbaraga, *Linearization of local transformations of Euclidean space. 1985-1986.*