

JUAN RIVERA-LETELIER

UR Mathematics, 811 Hylan Building University of Rochester
RC Box 270138 Rochester, NY 14627, U.S.A.
Telephone: + 1 585 276 3117 Fax: + 1 585 244 6631
Email: riveraletelier@gmail.com Website: <http://rivera-letelier.org>

Born July 19, 1975, Chile.
Married, 3 children.

Appointments

- *University of Rochester*. Professor (2015–present).
- *Pontificia Universidad Católica de Chile*. Associate professor (2009–2015), Assistant professor (2008).
- *Universidad Católica del Norte*. Associate professor (2002–2007).
- *Institute for Mathematical Sciences, Stony Brook University*. Postdoctoral position (2000–2002).

Long visiting appointments

- *Brown University*, July–December 2011 (Distinguished visiting associate professor).
- *Université de Provence*, June–July 2008.
- *Université de Genève*, April–July 2006.
- *Institute of Mathematics Polish Academy of Sciences (IMPAN)*, May–June 2005.
- *Pontificia Universidad Católica de Chile*, January 2005.
- *Centro de Modelamiento Matemático, Universidad de Chile*, December 2004.
- *Institut Mathématique de Jussieu*, October–November 2004.
- *Instituto de Matemática Pura e Aplicada (IMPA)*, November 2003–February 2004, January–February 1998.
- *Collège de France*, October 2003, March 2002, January 2001.
- *Institut Henri Poincaré*, September 2003.
- *Scuola Normale Superiore di Pisa*, April 2002.

Education

- *Doctorat en Mathématiques Pures* (equiv. Ph.D.), Université de Paris Sud, advisor J.-C. Yoccoz, 1997–2000.
- *Diplôme d'Études Approfondies (D.E.A.)* in Pure Mathematics, Université de Paris Sud, 1996–1997.
- *Mestrado em Matemática* (equiv. Master degree), Instituto de Matemática Pura e Aplicada (IMPA), 1994–1996.
- *Licenciatura en Matemática* (equiv. B.Sc. in Mathematics), Universidad Católica del Norte, second semester 1995.

Research papers

49. *Residue fixed point index and wildly ramified power series*,
with J. NORDQVIST, [arXiv: 1904.04494v1](https://arxiv.org/abs/1904.04494).
48. *p-Adic distribution of CM points and Hecke orbits. I. Convergence towards the Gauss point*,
with S. HERRERO, R. MENARES.
47. *Sensitive dependence of geometric Gibbs states at positive temperature*,
with D. CORONEL, *Comm. Math. Phys.* **368** (2019), 383–425.
46. *Sensitive dependence of geometric Gibbs states*,
with D. CORONEL, [arXiv: 1708.03965v2](https://arxiv.org/abs/1708.03965).

45. *Large deviation principle in one-dimensional dynamics*,
with Y.M. CHUNG, H. TAKAHASI, *Invent. Math.*, to appear. arXiv: 1610.00822v1.
44. *On the essential minimum of Faltings' height*,
with J. BURGOS GIL, R. MENARES, *Math. Comp.* **87** (2018), 2425–2459.
43. *The distribution of Galois orbits of points of small height in toric varieties*,
with J. BURGOS GIL, P. PHILIPPON, M. SOMBRA, *Amer. J. Math.* **141**, (2019), 309–381.
42. *Generic parabolic points are isolated in positive characteristic*,
with K.O. LINDAHL, *Nonlinearity* **29** (2016), 1596–1621.
41. *Sensitive dependence of Gibbs measures*,
with D. CORONEL, *J. Stat. Phys.* **160** (2015), 1658–1683.
40. *Geometric pressure for multimodal maps of the interval*,
with F. PRZYTYCKI, *Mem. Amer. Math. Soc.* **259** (2019), 1246, v+81 pp.
39. *Optimal cycles in ultrametric dynamics and minimally ramified power series*,
with K.O. LINDAHL, *Compositio Math.* **152** (2016), 1870–222.
38. *High-order phase transitions in the quadratic family*,
with D. CORONEL, *J. Eur. Math. Soc.* **17** (2015), 2725–2761.
37. *On Poincaré series of unicritical polynomials at the critical point*,
with W. SHEN, *Commun. Math. Stat.* **1** (2013), 1–17.
36. *Equilibrium states of weakly hyperbolic one-dimensional maps for Hölder potentials*,
with H. LI, *Comm. Math. Phys.* **328** (2014), 397–419.
35. *Equilibrium states of interval maps for hyperbolic potentials*,
with H. LI, *Nonlinearity* **27** (2014), 1779–1804.
34. *On the asymptotic expansion of maps with disconnected Julia set*,
arXiv: 1206.2376v1.
33. *Low-temperature phase transitions in the quadratic family*,
with D. CORONEL, *Adv. Math.* **248** (2013), 453–494.
32. *Asymptotic expansion of smooth interval maps*,
In *Astérisque* volume dedicated to the memory of J.C. Yoccoz, to appear. arXiv: 1204.3071v2.
31. *Topological orbit equivalence classes and numeration scales of logistic maps*,
with M.I. CORTEZ, *Ergodic Theory Dynam. Systems.* **32** (2012), 1501–1526.
30. *Lyapunov spectrum for exceptional rational maps*,
with K. GELFERT, F. PRZYTYCKI and M. RAMS, *Ann. Acad. Sci. Fenn. Math.* **38** (2013), 631–656.
29. *A characterization of hyperbolic potentials of rational maps*,
with I. INOQUIO-RENTERIA, *Bull. Braz. Math. Soc.* **43** (2012), 99–127.
28. *The maximal entropy measure detects non-uniform hyperbolicity*,
Math. Res. Lett. **17** (2010), 851–866.
27. *Statistical properties of one-dimensional maps under weak hyperbolicity assumptions*,
with W. SHEN, *Ann. Sci. École Norm. Sup.* **47** (2014), 1027–1083.
26. *Choquet simplices as spaces of invariant probability measures of post-critical sets*,
with M.I. CORTEZ, *Ann. Inst. H. Poincaré Anal. Non Linéaire* **107** (2010), 95–115.

25. *Large deviation principles for non-uniformly hyperbolic rational maps*,
with H. COMMAN, Ergodic Theory Dynam. Systems **31** (2011), 321–349.
24. *Nice inducing schemes and the thermodynamics of rational maps*,
with F. PRZYTYCKI, Comm. Math. Phys. **301** (2011), 661–707.
23. *Invariant measures of minimal post-critical sets of logistic maps*,
with M.I. CORTEZ, Israel J. Math. **176** (2010), 157–193.
22. *Théorie ergodique des fractions rationnelles sur un corps ultramétrique*,
with C. FAVRE, Proc. London Math. Soc. **100** (2010), 116–154.
21. *Large derivatives, backward contraction and invariant densities for interval maps*,
with H. BRUIN, W. SHEN and S. VAN STRIEN, Invent. Math. **172** (2008), 509–533.
20. *Notes sur la droite projective de Berkovich*,
arXiv:math.MG/0605676.
19. *Statistical properties of topological Collet-Eckmann maps*,
with F. PRZYTYCKI, Ann. Sci. École Norm. Sup. **40** (2007), 135–178.
18. *Wild Lorenz like attractors*,
with R. BAMÓN and J. KIWI, arXiv:math.DS/0508045.
17. *A connecting lemma for rational maps satisfying a no growth condition*,
Ergodic Theory Dynam. Systems **27** (2007), 595–636.
16. *Equidistribution quantitative des points de petite hauteur sur la droite projective*,
with C. FAVRE, Math. Ann. **335** (2006), 311–361.
15. *Wild recurrent critical points*,
J. London Math. Soc. **72** (2005), 305–326.
14. *On the topology of solenoidal attractors of the cylinder*,
with R. BAMÓN, J. KIWI and R. URZÚA, Ann. Inst. H. Poincaré Anal. Non Linéaire **23** (2006),
209–236.
13. *Théorème d'équidistribution de Brolin en dynamique p -adique*,
with C. FAVRE, C. R. Math. Acad. Sci. Paris **339** (2004), 271–276.
12. *Points périodiques des fonctions rationnelles dans l'espace hyperbolique p -adique*,
Comment. Math. Helv. **80** (2005), 593–629.
11. *Equality of pressures for rational functions*,
with F. PRZYTYCKI and S. SMIRNOV, Ergodic Theory Dynam. Systems **23** (2004), 891–914.
10. *Bi-analytic elements and partial isometries of hyperbolic space*,
Contemp. Math. **319** (2003), 319–343.
9. *Une caractérisation des fonctions holomorphes injectives en analyse ultramétrique*,
C. R. Math. Acad. Sci. Paris **335** (2002), 441–446.
8. *Weak hyperbolicity on periodic orbits for polynomials*,
C. R. Math. Acad. Sci. Paris **334** (2002), 1113–1118.
7. *Sur la structure des ensembles de Fatou p -adiques*,
arXiv:math.DS/0412180.

6. *Espace hyperbolique p -adique et dynamique de fonctions rationnelles*, *Compositio Math.* **138** (2003), 199–231.
5. *Equivalence and topological invariance of conditions for non-uniform hyperbolicity in the iteration of rational maps*, with F. PRZYTYCKI and S. SMIRNOV, *Invent. Math.* **151** (2003), 39–63.
4. *Dynamique des fonctions rationnelles sur des corps locaux*, *Astérisque* **287** (2003), 147–230.
3. *On the continuity of Hausdorff dimension of Julia sets and similarity between the Mandelbrot set and Julia sets*, *Fund. Math.* **170** (2001), 287–317.
2. *On the topological structure of the arithmetic sum of regular Cantor sets*, with C. MOREIRA and E. MUÑOZ, *Nonlinearity* **13** (2000), 2077–2087.
1. *Analytically rigid rotations of the circle*, with R. URZÚA, *Proceedings of the XI Brazilian Topology Meeting* (2000), 108–114.

Fellowships and distinctions

- 2009 *Special Lecture*, Third Latinoamerican Congress of Mathematicians, Chile.
- 2004 *Premio a la Mejor Investigación o Creación Artística*, Universidad Católica del Norte.
- 2000 *Special Lecture*, First Latinoamerican Congress of Mathematicians, Brazil.
- 1998–2000 *Beca Presidente de la República*, Ministerio de Planificación y Cooperación (Mideplan), Chile.
- 1998 Fundación Andes, Project C-53401.
- 1994–1996 *Bolsa de Mestrado*, Conselho Nacional Desenvolvimento Científico e Tecnológico (CNPq), Brazil.
- 1992 *Program in Mathematics for Young Scientists (PROMYS) fellowship*, Boston University.
- 1991–1994 Mathematical Olympiads medals. International: Silver 1994; Iberoamerican: Gold (perfect score) 1992, Silver 1993; Asia-Pacific: Gold 1993; Southern cone: Silver and Originality 1991; Chilean: Gold 1991, 1992, and 1993.

Grants

- 2017–2020 *Ergodic Theory of Smooth One-Dimensional Maps*.
NSF grant DMS-1700291, responsible researcher, 168.000 USD.
- 2014–2017 *Parameter dependence of physical measures and other dynamical objects and quantities*.
FONDECYT grant 1141091, responsible researcher, 82.160.000 CLP (equiv. 143.436 USD).
- 2010–2013 *Thermodynamic formalism of real and complex one dimensional dynamical systems*.
FONDECYT grant 1100922, responsible researcher, 70.544.000 CLP (equiv. 139.498 USD).
- 2008–2010 *Ultrametric dynamics and dynamical moduli spaces*.
ECOS/CONICYT grant Co7 Eo1, Chilean team leader.
- 2007–2010 *Conformal Structures and Dynamics*.
EU Research Training Network CODY, associated researcher, Warsaw team.

- 2007–2009 *Research network on low dimensional dynamics.*
Bicentennial program (CONICYT, Chile), ACT-17, director, 450.000.000 CLP (equiv. 845.785 USD).
- 2004–2006 *Geometric methods in ultrametric analysis and dynamics.*
FONDECYT grant 1040683, responsible researcher 24.225.000 CLP (equiv. 40.503 USD).
- 2003–2006 *Conformal dynamical systems and geometry of fractal sets.*
Polish KBN grant 2P03A 034 25, foreign researcher.

Postdoctoral supervision

- Bing GAO, 2014-2016, FONDECYT grant 3150279.
- Yiwei ZHANG, 2012-15, FONDECYT grant 3130622.
- Huaibin LI, 2010-2013, FONDECYT grant 3110060.
- Daniel CORONEL, 2009-2012, FONDECYT grant 3100092.
- Bartłomiej SKORULSKI, 2005-2006.

Ph.D. students advised

- Vanessa MATUS DE LA PARRA, 2019-present.
- Tritium SHEN, 2018-present.
- Shaosong LIU, 2018-present
- Jorge OLIVARES, 2018-present.
- Sebastián HERRERO, defended August 2016, in co-tutorship with Y. MARTIN.
- Irene INOQUIO-RENTERIA, defended July 2010, in co-tutorship with B. SKORULSKI.

Mathematical service

- *Wing lectures and Colloquium committee* (2015-present), Mathematics Department, U. of Rochester.
- *Graduate committee* (2017-present), Mathematics Department, U. of Rochester.
- NSF panel (2019, 2018 (twice), 2012).
- *Scientific Committee*, MATH-AmSud program of cooperation between France and South America, CONICYT representative (2008-15).
- *Scientific Committee*, Beyond uniform hyperbolicity (August 31–September 11, 2015), Chile.
- *Scientific Committee*, XX Coloquio Latinoamericano de Álgebra (December 8-12, 2014), Peru.
- *Scientific Committee*, Workshop on Dynamical Systems (October 17 - 21, 2011), U.F. Bahia, Brazil
- *Hiring Committee*, Mathematics Faculty, PUC (2010 and 2011).
- *Graduate Committee*, Mathematics Department, UCN, Chile (2003–2007).
- *Scientific Committee*, Ninth International Conference on p -Adic Functional Analysis (July 10–14, 2006), U. de Concepción, Chile.
- *Scientific Committee*, Congreso de Matemática Capricornio (COMCA), 2003-06.

Conference organization

- CIMPA-ICTP School "Toric methods in geometry, arithmetic, and dynamics" (January 11-22, 2016), PUC, Chile.
- Encuentro de Aritmética de Variedades Tóricas (March 19-21, 2014), PUC, Chile.
- Non-uniformly hyperbolic and neutral one-dimensional dynamics (April 23–27, 2012), NUS, Singapore
- Semester Program on "Complex and Arithmetic Dynamics" (January 30–May 04, 2012). ICERM, U.S.A.
- (*Chair*), Complex and p -adic Dynamics (February 13-17, 2012), ICERM, U.S.A.
- Bicentennial workshop on dynamical systems (May 24–June 04, 2010), San Pedro de Atacama, Chile.
- Non-uniformly hyperbolic days (January 18–29, 2010), PUC, Chile
- Dynamical systems at Valparaiso (September 07–11, 2009), PUCV, Chile.

- Ultrametric Dynamical Days (January 21–February 1, 2008), PUC, Chile.
- Dynamical Systems Days (December 3–14, 2007), UCN, Chile.
- VI Escuela Internacional de Sistemas Dinámicos (July 17–25, 2007), USaCh, Chile.
- Dynamical Systems Days (July 17–28, 2006), PUC, Chile.
- Workshop/School Non-uniform hyperbolicity in one dimensional dynamics (April 3–7, 2006), Banach center, Poland.
- III & IV Workshop on Dynamical Systems (August 2003 & August 2005), UCN, San Pedro de Atacama, Chile.
- V Escuela Internacional de Sistemas Dinámicos (January 2005), U. de Chile, Chile.
- XIII Congreso de Matemática Capricornio (COMCA) (August 2003), UCN, Chile.
- Around Dynamics, a conference in honor of J. MILNOR's 70-th birthday (March 2001), SUNY at Stony Brook, U.S.A.