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CURRICULUM VITAE
Karina Fabiana Laneri

Place of birth: Buenos Aires, Capital Federal, Argentina.
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Working address: Statistics and Interdisciplinary Physics Division, Centro Atómico Bariloche, Av. Exequiel Bustillo 9500, Bariloche, Río Negro, Argentina.
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Research topics: The design and development of devices to measure animal behavior with a focus on conservation, followed by data analysis. The study of fundamental processes governing the organization and functioning of ecological systems, using interdisciplinary approaches from physics, ecology, mathematics, and computer science.
Key words: population ecology, animal movement, forest fires, stochastic processes, non-linear interactions and complex systems.

Academic Degrees

- National Scientific and Technical Research Council (CONICET), Independent Researcher in the Statistical Physics and Interdisciplinary Division, Centro Atómico Bariloche, Argentina, from 1/6/2022 to the present.
- National Scientific and Technical Research Council (CONICET), Associated Researcher in the Statistical Physics and Interdisciplinary Division, Centro Atómico Bariloche, Argentina, from 10/4/2013 to 31/5/2022.
- Postdoctoral reinsertion from abroad fellow of CONICET, Statistical Physics and Interdisciplinary Division, Centro Atómico Bariloche, Argentina, from 25/7/2012 to 24/2/2013.
- Postdoctoral fellow, Fundació Institut Català de Ciències del Clima (IC3), Barcelona, Spain, from 9/2010 to 2/2012.
- Postdoctoral fellow, University of Michigan, Department of Ecology and Evolutionary Biology (EEB), Theoretical Ecology Group, Ann Arbor Michigan, US, from 3/2008 to 8/2010.
- Postdoctoral fellow, Population Ecology Group, Institut Mediterrani de Estudis Avançats (IMEDEA), Mallorca, Spain, from 03/2005 to 12/2007.

• Postdoctoral fellow, The Biophysical Interdisciplinary Jerome Schottenstein Center for the Early Detection of Cancer, Physics Department, Bar-Ilan University, Israel, from 5/2004 to 12/2004.

• PhD in Physics, Physics Department, La Plata National University (UNLP), Argentina, 23/12/2003.

• Licenciada in Physics (Msc.), La Plata National University (UNLP), Argentina, 12/5/1999.

Invited visits abroad:

• Participant of the Summer School on Mathematics of Movement, 5th July to 23rd July 2023, in the framework of the program: "Mathematics of movement: an interdisciplinary approach to mutual challenges in animal ecology and cell biology", Isaac Newton Institute for Mathematical Sciences, Cambridge, UK., 5th July to 20th December 2023.

• Scientific collaboration, ICTP-SAIFR Sao Paulo Brazil, 26/3/2017 to 5/4/2017.

• Scientific collaboration, ICTP-SAIFR Sao Paulo Brazil, 16/9/2017 to 30/9/2017.

• ECOS Project invited stay, Paris, France 5/2014.

• Invited visit by Universidad Politécnica de Catalunya (UPC), Barcelona, Spain, at the end of my PhD. with a CONICET scholarship 1/09/2001 to 1/12/2001.

Teaching Positions

• Teaching assistant, Balseiro Institute, Cuyo University, Bariloche, February 2024 to the present.

• Teaching assistant, Fundamentals of machine learning, Balseiro Institute, Cuyo University, Bariloche, July-October 2022.

• Teacher in the RLadies-Bariloche workshop: "R as a programming language", INIBIOMA, Bariloche, December 2nd 2019.

• Teaching assistant, Introduction to scientific programming in graphic processing units, Instituto Balseiro, Cuyo University, Bariloche, February-June 2016 and February-June 2017.

• Teacher in the workshop: "CUDA applications to current problems in bioinformatics", Centro Atómico Bariloche, in the framework of the V Argentinian Conference on Bioinformatics and Computational Biology, 20 y 21 September 2014.

• Graduate teaching assistant, General Physics, Ciencias Exactas Faculty, UNLP, Argentina, from 7/2002 to 2/2003 and from 7/2003 to 2/2004.

- Graduate teaching assistant, Electromagnetic Experiments, Ciencias Exactas Faculty UNLP, Argentina, from 4/2002 to 7/2002 and from 3/2003 to 5/2003.
- Graduate teaching assistant, Engineering Faculty UNLP, Argentina, introductory courses in Mathematics February and. March 2002.
- Principal Instructor, Physics I, Arts Faculty, UNLP, Argentina, from 1/5/2001 to 1/9/2001.
- Graduate teaching assistant, Thermodynamics, Engineering Faculty La Plata University, Argentina, from 4/2001 to 5/2001.
- Student teaching assistant, Mathematical Analysis I and II Engineering Faculty UNLP, Argentina, from 3/1999 to 4/2001.
- Student teaching assistant, Introductory courses on Mathematics, Cs. Exactas Faculty UNLP, Argentina February- March 1997, February- March 1999.
- Student teaching assistant, Physics II, Cs. Exactas Faculty, La Plata University ,UNLP, Argentina, 1995/96.

Fellowships

- Postdoctoral fellowship associated to an European Project (7th framework program), Fundació Institut Català de Ciències del Clima (IC3), Barcelona, Spain, from 9/2010 to 2/2012.
- Postdoctoral fellowship associated to a US project, University of Michigan, Department of Ecology and Evolutionary Biology (EEB), Theoretical Ecology Group, Ann Arbor Michigan, US, from 3/2008 to 8/2010.
- Postdoctoral fellowship, Ministerio de Educación y Ciencia de España (MEC), National Program for the mobility of young foreign doctors, Mallorca-Spain, from 1/6/2006 to 30/11/2008.
- Postdoctoral fellowship associated to an NIH project, The Biophysical Interdisciplinary Jerome Schottenstein Center for the Early Detection of Cancer, Physics Department, Bar-Ilan University, Israel, from 5/2004 to 12/2004.
- Research Fellowship to achieve a PhD, National Research Council (CONICET), Argentina, from 1/4/2000 to 1/4/2004.
- Research Fellowship to achieve a PhD, National Agency for Scientific and Technique Promotion (ANPCyT), Argentina, from 1/6/99 to 1/4/2000.
- Research Fellowship for outstanding university students, Antorchas Foundation, Argentina, from 30/03/98 to 30/03/99

Training of human resources

1) Advisor MSc. Physics Thesis Carlos Callenbach Tellechea, Balseiro Institute, "Clasification of animal behavior with machine learning techniques", February 2025 to the present.

2) Advisor asignature "Research I" Luciano Lopez Bertazza, Balseiro Institute, "Spatial distribution patterns in complex systems: application to the case of colonial birds' nest distributions.", February 2025 to the present.

3) Advisor Msc. Physics Thesis, Lucas Becerra, Balseiro Institute,"Simulaciones computacionales y visualización de la propagación de incendios forestales en la región patagónica", August 2024 to the present.

4) Co-advisor Final Project Electronic Engineer, Rio Negro National University (Advisor: Eng. Jorge Cogo), "Implementation of receptor stations to monitor animal movement", Gabriel Garcés February-December 2024.

5) Advisor asignature "Research I" Carlos Callenbach Tellechea, Balseiro Institute, "Observation and measurement of tortoises behavior in their natural habitat", February-June 2024.

6) Advisor PhD Thesis of MSc. María Eugenia Echave (Co-advisor: Dr. Erika Kubisch), with a CONICET scholarship, "Effect of environmental disturbances on the population viability of the Argentinian tortoise *Chelonoidis chilensis*, April 2023 to the present.

7) Master Thesis Advisor of Marco Madile Hjelt (co-advisor: Dr. Luis Moyano), Balseiro Institute, "Study of animal movement populations: complex networks of interactions driven by field data." August 2022 – December 2023.

8) Advisor Advanced Laboratory Marco Madile Hjelt, course of the Msc. Physics of Balseiro Institute, "Study of the interactions in a vulnerable tortoise population" Feb-Jun 2022.

9) Co-advisor of Lucas J. Díaz Míguez, sholarship from the project PI UNRN 2018 40-B-745, "Dynamic data handling in the forest fire simulator", EVC – CIN 2020 al 2022.

10) Master Physics Thesis advisor of David Córdova Mora, scholarship from Balseiro Institute, "Mathematical models and machine learning techniques for the study of animal movement" Jun 2020 to Dec 2022.

11) Master Engeneering Thesis advisor of Andrés Oliva Trevisan scholarship from Balseiro Institute (Co-advisor Eng. Nicolás Catalano), "Development of a device with integrated sensors for the study of animal behavior" Jun 2020- Jun 2023.

12) Master Physics Thesis advisor of Denise Cammarota, sholarship from Balseiro Institute, "Epidemiological models of COVID-19: computer simulations, bayesian statistics and machine learning techniques", Jun 2019 to Feb 2022.

13) Advisor of Eng. Sofía Jason research scholarship in the framework of the “Summer scholarship program Instituto Balseiro” February 2020, “Low power navigation unit to monitor animal movement” (Co-advisor Ing. Nicolás Catalano).

14) Advisor of MSc. Andrés Bertoni, research scholarship in the framework of the “Summer scholarship program Instituto Balseiro” February 2019. Topic: “Signal analysis and development of an algorithm for the radio-tracking of a vulnerable marsupial in the Patagonian forest”.

15) Master Physics Thesis advisor of Bruno Kaufman with a Balseiro Institute scholarship, Topic:”Dynamically forced systems: application to the study of dengue”, June 2016 to December 2017.

16) Co-advisor PhD Thesis of MSc. Javier Gutierrez (Advisor: Dr. Juan Aparicio) April 2013 to March 2018, with a CONICET scholarship, ”Forced stochastic systems: application to the study of the influence of environmental variables in the dynamics and re-emergence of dengue in Argentina”.

Scientific publications

1. Laila Daniela Kazimierski, Erika Kubisch, Julien Joseph, María Eugenia Echave, Nicolás Catalano, Guillermo Abramson, **Karina Laneri**, *Study of the movement of the vulnerable tortoise Chelonoidis chilensis complementing monitoring techniques*, accepted (available preprint at: https://www.newton.ac.uk/event/mmv/).

2. Marco Madile Hjelt, Luis Moyano, María Eugenia Echave, Erika Kubisch, Laila, Daniela Kazimierski, Nicolás Catalano, Guillermo Abramson, **Karina Laneri,** Social networks of threatened Chaco tortoises (Chelonoidis chilensis) in the wild, Biological Journal of the Linnean Society, in press (2024).

3. Renzo Zagarra, **Karina Laneri**, Alejandro B. Kolton, *Infection fronts in randomly varying transmission-rate media*, PRE, in press (2024).

4. Kazimierski, L.D.; Oliva Trevisan, A.; Kubisch, E.; **Laneri, K.**; Catalano, N. Design and *Development of a Family of Integrated Devices to Monitor Animal Movement in the Wild*. *Sensors*, *23*, 3684, (2023) https://doi.org/10.3390/.

5. Javier Armando Gutierrez, **Karina Laneri**, Juan Pablo Aparicio, Gustavo Javier Sibona, *Meteorological indicators of dengue epidemics in non-endemic Northwest Argentina*, Infectious Disease Modelling (2022), https://doi.org/10.1016/j.idm.

6. Ana Alicia Gramajo, Fabiana Laguna, **Karina Laneri**, *Mosquito populations and human social behavior: A spatially explicit agent-based model*, Phys. Rev. E 106, 034405 (2022), https://doi.org/10.1103/PhysRevE.106.034405.

7. Monica M. Denham, Sigfrido Waidelich, **Karina Laneri**, *Visualization and Modelling of forest fire propagation in Patagonia*, Environmental Modelling & Software (2022), https://doi.org/10.1016/j.envsoft.2022.105526.

8. J. Pedrana, A. Gorosábel, L. Kazimierski, K. Pütz, L. Bernad, **K. Laneri**, *Weather conditions affect spring migration departure of Ruddy-headed Goose in the southern Pampas, Argentina*, Austral Ornithology (2022), https://doi.org/10.1080/01584197.2022.2075395.

9. M. Gurevitz, J. Antman, **K. Laneri**, J.M. Morales, *Temperature, traveling, slums, and housing drive dengue transmission in a non-endemic metropolis*, PLOS Neglected Tropical Diseases (2021), https://doi.org/10.1371/journal.pntd.0009465..

10. Kazimierski L., Catalano N., **Laneri K**., Balazote A., Joseph J., Amico G., Abramson G., *Trajectory assessment of the vulnerable marsupial D. gliroides in the Patagonian temperate forest*. Mammalian Biology (2021) https://doi.org/10.1007/s42991-021-00106-5.

11. Karina Laneri, Sigfrido Waidelich, Viviana Zimmerman and Mónica Denham, *First steps towards a dynamical model for forest fire behaviour in Argentinian landscapes*, Journal of Computer Science & Technology (2020) , **https://doi.org/10.24215/16666038.20.e09.**

12. **Karina Laneri,** Brenno Cabella, Paulo Inácio Prado, Renato Mendes Coutinho, Roberto André Kraenkel, Climate drivers of malaria at its southern fringe in the Americas. PLOS ONE (2019) 14(7): e0219249.https://doi.org/10.1371/journal.pone.0219249

13. Alejandro B. Kolton, **Karina Laneri**, *Rough infection fronts in a random medium*, Eur. Phys. J. B (2019) 92: 126, https://doi.org/10.1140/epjb/e2019-90582-3. (Highlighted paper by EPJB June 2019 - https://epjb.epj.org/epjb-news)

14. Sigfrido Waidelich, **Karina Laneri**, Mónica Denham, Fire propagation visualization in real time, Journal of Computer Science & Technology (2018), Volume 18, Number 3, http://dx.doi.org/10.24215/16666038.18.e27.

15. Mónica Denham, **Karina Laneri**, *Using efficient parallelization in Graphic Processing Units to parameterize stochastic fire propagation models*, Journal of Computational Science (2018) , Volume 25, 76-88, ISSN 1877-7503, https://doi.org/10.1016/j.jocs.2018.02.007 .

16. **Laneri K.**, Paul R.E., Tall A., Faye J., Diene-Sarr F., Sokhna C., Trape J.F. and Rodó X.. *Dynamical malaria models reveal how immunity buffers effect of climate variability*, PNAS, USA, (2015), vol. 112 no. 28, 8786-8791, doi: 10.1073/pnas.1419047112.

17. Anindya Bhadra, Edward L. Ionides, **Karina Laneri**, Mercedes Pascual, Menno Bouma, and Ramesh C. Dhiman, *Malaria in Northwest India: Data analysis via partially observed stochastic differential equation models driven by Lévy noise*, Journal of the American Statistical Association, .Vol. 106, No. 494, 440-451. (Highlighted paper by JASA June 2011).

18. Mercedes Pascual, Manojit Roy, **Karina Laneri,** *Simple models for complex systems: exploiting the relationship between local and global densities,* Theor Ecol (2011) 4:211–222**,** DOI 10.1007/s12080-011-0116-2.

19. **K. Laneri**, A. Bhadra, E. Ionides, M. Bouma, R. Dhiman, R. S. Yadav, M. Pascual, *Forcing Versus Feedback: Epidemic Malaria and Monsoon Rains in Northwest India*, PLoS Comput Biol (2010) 6(9): e1000898. doi:10.1371/journal.pcbi.1000898

20. **K. Laneri**, M. Louzao, A. Martínez-Abraín, J.M. Arcos, E.J. Belda, J. Guallart, A. Sánchez, M. Giménez, R. Maestre and D. Oro., *Trawling regime influences longline seabird bycatch in the Mediterranean: new insights from a small-scale fishery*, Marine Ecology Progress Series (2010) Vol. 420: 241–252 doi: 10.3354/meps08847.

21. **Laneri, K.**, P. Bruna and D. Crespo. *Microstructural characterization and kinetics modelling of vermicular cast iron.* Materials Science and Technology (2008), **24(10)**:1220.

22. Maite Louzao, José Manuel Arcos, **Karina Laneri**, Eduardo Belda, Javier Guallart, Antonio Sánchez, Mario Giménez, Raquel Maestre and Daniel Oro. *Evidencias de la captura incidental de pardela balear en el mar / Evidence of the incidental capture of the Balearic Shearwater at sea*, Actas del 6º Congreso del GIAM y del Taller internacional

sobre la Ecología de Paiños y Pardelas en el sur de Europa, Boletin del GIAM (2007), pp34-37.

23. A. Rozenfeld, **K. Laneri**, E. Albano, *Critical dynamic approach to stationary states in complex systems*, J Eur. Phys. J. Special Topics 143, (2007) 3–8.

24. **K. Laneri**, A. Rozenfeld, E. Albano, *Dynamic critical approach to self-organized criticality,* Rapid Communication Physical Review E 72 (2005) 065105 (R) .

25. L. Vergara, J. Desimoni, **K. Laneri**, A. Fernández Guillermet and G. J. Zarragoicoechea, *Distribution of interstitial atoms in Fe-N alloys: A Mössbauer, Thermodynamic and Monte Carlo approach*, Physica B 363 (2005) 178-189.

26. R. W. Gregorutti, **K. Laneri**, J. Desimoni and R. C. Mercader, *Study of the austempering transformation kinetics in compacted graphite cast irons*, Metallurgical and Materials Transactions A, 35 (2004) 103.

27. **K. Laneri**, J. Desimoni, G. J. Zarragoicoechea and A. Fernández Guillermet, *Distribution of carbon atoms in iron carbon austenite: an experimental and theoretical study*, Phys. Rev.B 66 (2002) 134201.

28. P. Bruna, **K. F. Laneri**, D. Crespo, R. W. Gregorutti, J. Desimoni,, *Microstructural characterization of vermicular cast iron with low Mn content*, Proceedings, II Encuentro franco-español de química y física del estado sólido, Sant Feliu de Guíxols, Girona, Spain, 20-23 March 2002.

29. **K. Laneri**, J. Desimoni, R. C. Mercader, R. W. Gregorutti, J. L. Sarutti, *Thermal Dependence of Austempering Transformation Kinetics of Compacted Graphite Cast Iron*, Metallurgical and Materials Transactions A, 32(2001) 51.

30. **K. F. Laneri**, J. Desimoni and G. J. Zarragoicoechea, *Monte Carlo Simulations of Mossbauer results in Fe-C Austenite*, Hyperfine Interactions 34 (2001) 171.

31. **K. Laneri**, J. Desimoni, R. C Mercader, R. W. Gregorutti and J. L. Sarutti, *Austempering transformation in 0.11wt\% Mn Vermicular Cast Iron*, Hyperfine Interactions (C) 5 (2001) 539.

32. R. Gregorutti, J. Sarutti, **K. Laneri**, J. Desimoni and J. Sikora, *Stability and transformations of Retained Austenite in Ductile and Vermicular cast Irons*, Proceedings 20th Heat Treating Society Conf.: First International Conference on Retained Austenite, St. Louis, Missouri, USA, ASM International 1 (2000) 586.

33. **K. Laneri**, J. Desimoni, R. C. Mercader., R. W. Gregorutti, J. L. Sarutti , *Influence on the Mn content on the kinetics of Austempering Transformation in Compacted Graphite Cast Iron*, Metallurgical and Materials Transactions A, vol 30A (1999) 2745.

34. **K. Laneri**, J. Desimoni, R. C. Mercader, R. W. Gregorutti, J. L. Sarutti, *Dependencia de la cinética de Transformación con la temperatura de austemperizado en fundiciones vermiculares*, Anales A.F.A , Tucumán 11 (1999) 171.

35. **K. Laneri**, J. Desimoni, R. C. Mercader, R. W. Gregorutti and J. L. Sarutti, *Austenite Carbon concentration after 640K austempering of compacted graphite cast irons*, Hyperfine Interactions(C) (1998) 305.

Publications in preparation

• Denise Cammarota, Alejandro Kolton, Karina Laneri, *The beginnings of COVID-19 spatial propagation in Argentina*.

Poster and talk presentations

• *Study of animal movement for conservation in Patagonia Argentina,* Workshop in collective animal behavior, Paris, Francia, Nov 2022, (Invited virtual talk).

• *Poblaciones de mosquitos y comportamiento social humano: un modelo de agentes espacialmente explícito*, A A Gramajo , M F Laguna , K Laneri, Fisica Estadistica e Interdisciplinaria CAB, TREFEMAC May de 2022.

• *¿Qué podemos aportar desde la física al estudio del movimiento y comportamiento animal?* K. Laneri, TREFEMAC May de 2022 (Invited talk).

• *Movimiento animal de especies con interés en conservación*, K. Laneri, Seminarios del grupo de Física Estadística e Interdisciplinaria, CAB, April 2022 (Talk).

• *Sistema de monitoreo para estudiar el movimiento y actividad de la tortuga terrestre argentina Chelonoidis chilensis*, Kubisch Erika, Kazimierski Laila, Catalano Nicolás, Echave María Eugenia, Ibáñez Molina Mora, Joseph Julien, Laneri Karina, Congreso de la Asociación Herpetológica Argentina 2021 (poster).

• *Campañas de prevención y comportamiento social: modelado poblacional del mosquito transmisor del dengue*, Gramajo A. A, Laneri K., Laguna M.F, TREFEMAC 2021.

• *Forest Fire Simulation in High Performance Computing*, Mónica Denham, Sigfrido Waidelich, Viviana Zimmerman, Karina Laneri, Proceedings IX Conference on Cloud Computing, Big Data & Emerging Topics (2021).

• *Diagramas de riesgo COVID-19 aplicados a Argentina*, Karina Laneri, Alejandro Kolton, 105a Reunión AFA, Septiembre 2020, modalidad virtual, Córdoba, Argentina (Oral).

• *Cálculo y visualización del índice meteorológico del fuego*, Sigfrido Waidelich, Viviana Zimmerman, Karina Laneri, Mónica Denham, XXV Congreso Argentino de Ciencias de la Computación CACIC 2019, Rio Cuarto Córdoba, 14-18 de October 2019 (Oral).

• *Infection front propagation roughness of a spatial explicit SIR model on a random surface*, K. Laneri, A. B. Kolton, StatPhys 2019, CABA, 8-12 July 2019 (Poster).

• *Spatio-temporal dengue model with social interaction: humans, mosquitoes, virus and environment*, Fabiana Laguna, Karina Laneri, StatPhys 2019, CABA, 8-12 July 2019 (Poster).

• *Relevamiento de las condiciones laborales de las mujeres del Centro Atómico Bariloche y Complejo Tecnológico Pilcaniyeu (CAB-CTP)*, Grupo de mujeres trabajadoras del CAB-CTP, Congreso Internacional de Género en Ciencia Tecnología e Innovación, Santa Fe, 6 y 7 de June 2019 (Written).

• *Humanos, mosquitos y ambiente: un modelo para el dengue*, Fabiana Laguna , Karina Laneri, Trefemac 2019, 24 al 26 de April, San Luis Trefemac 2019, (Oral, presented by Fabiana Laguna).

• *Modelización espacio-temporal del dengue: humanos, mosquitos, virus y ambiente,* Karina Laneri, Fabiana Laguna, Reunión Argentina de Ecología, September 2018, Mar del Plata, Argentina (Talk).

• *Enfermedades infecciosas*, Charla para 7mo grado del Colegio del Sol, September 2018, Bariloche, Argentina.

• *Sistema de seguimiento de fauna silvestre*, Nicolás Catalano, Laila Kazimierski, Cristian Roddick, Leonardo Morbidel, Karina Laneri, Pablo A. Costanzo Caso, Guillermo Abramson, IEEE ARGENCON 2018, San Miguel de Tucumán, Argentina, June 6-8, 2018 (Presented by Nicolás Catalano).

• *Fire propagation visualization in real time*, Sigfrido Waidelich, Karina Laneri, Mónica Denham, VI Jornadas de Cloud Computing & Big Data, June 2018, La Plata, Argentina (Talk presented by M. Denham).

• *Influencia social, mosquitos y propaganda: un modelo para el dengue*, Karina Laneri y Fabiana Laguna, 102a Reunión AFA, 26-29 de September, 2017, La Plata, Argentina (Poster).

• *Malaria and climate in the North of Argentina*, working meetings with ICTP SAIFR collaborators, 1 week in March and September 2017, São Paulo, Brazil.

• *Mathematical models for malaria transmission: climate and immunity*, K. Laneri, ICTP-SAIFR ICTP-SAIFR 5th Anniversary Symposium: Advancement of Science in South America, November 6 – 8, 2016, São Paulo, Brazil (Plenary invited talk).

• *Epidemiological models with human mobility based on dengue time series from Northern Argentina*, K. Laneri, B. Kaufman, Latin American School and Workshop on Data Analysis and Mathematical Modeling of Social Sciences (SoFiA), 7-11 November 2016, Buenos Aires, Agentina (Talk).

• *Modelización matemática de la incidencia de dengue en el norte argentino* K. Laneri, M. Kuperman, J. Gurevitz, T. Varela, J. Antman, Reunión Binacional Argentina-Chile de Ecología, September de 2016, Misiones Argentina (Talk).

• *Sueñan las Ovejas con androides eléctricos?* Agustina di Virgilio, Karina F. Laneri, Pablo M. Gleiser, Juan Manuel Morales, Carola Dreidemie, XIV Congreso Regional de Física Estadística y Aplicaciones a la Materia Condensada (XIV TREFEMAC 2016), 4-6 May 2016, Instituto Balseiro, Bariloche, Argentina (Poster).

• *Oscilaciones auto-sostenidas en un modelo epidemiológico simple con dinámica vital realista*, Ciclo de Seminarios del grupo de Materia Condensada, Centro Atómico Bariloche, April 2016, (Talk).

• *Modelos matemáticos de transmisión de malaria: Inmunidad vs. Clima*, Coloquio del Instituto Balseiro, Centro Atómico Bariloche, 11/9/2015 (Plenary invited talk).

• *Modelización de enfermedades transmitidas por vectores: malaria en el Noroeste Argentino*, Reunión Nacional de Física Argentina (AFA) , Merlo San Luis, Argentina September de 2015, (Talk).

• *Modelos de Incendios Forestales en GPGPU* , Ciclo de Seminarios del grupo de Física Estadistica e Interdisciplinaria, Centro Atómico Bariloche, December 2014, (Talk).

• *Malaria en el Noroeste Argentino: modelos dinámicos de transmisión para Plasmodium vivax*, Reunión Argentina de Ecología, Comodoro Rivadavia, November 2014, (Oral).

• *Modelización de procesos parcialmente observados: malaria en dos cohortes de Senegal* , Reunión Nacional de Física Argentina (AFA) , Bariloche, September 2013, (Oral).

• *Procesos parcialmente observados: Malaria en dos pueblos de Senegal*, Ciclo de Seminarios del grupo de Física Estadistica e Interdisciplinaria, Centro Atómico Bariloche, April 2013, (Talk).

• *Dynamical models for Malaria in Senegal*, Summer School on Climate Impacts Modelling for Developing Countries: Water, Agriculture and Health jointly with the QWeCI first project workshop, ICTP Trieste Italy 14th-16th September 2011, (Talk).

• *Transient dynamics and geometrical properties in an spatial predator-prey model*, Karina Laneri , Alejandro Kolton , Manojit Roy and Mercedes Pascual, XVII Congreso de Física Estadística (FisEs2011), Edificio de Física y Química, Universidad de Barcelona, Barcelona, 2-4 June de 2011, (Poster).

• *Dengue models in Iquitos Peru*, group project talk for the Ecology and Evolution of Infectious Diseases 8th Annual Workshop, Cornell University, 1-6 June 2010. (Talk)

• *Estudio Monte Carlo del bloqueo de los sitios intersticiales fcc de las soluciones sólidas FeX (X= C, N)*, J. Desimoni, K. Laneri, G. J. Zarragoicoechea, A. Fernández Guillermet, 8 TREFEMAC, Mar del Plata, Argentina, May 5-7 2010, (Poster).

• *Epidemic malaria and Monsoon rains in North-West India*, Department Seminar EEB, University of Michigan, US, April 2010, (Talk).

• *Epidemic malaria dynamics and rainfall variability in North-West India*, invited talk for the Ecological Society of America annual meeting, Alburquerque, US, 2-8 August 2009, (Talk).

• *Modelling mosquito abundance in West Nile virus endemic areas*, Ecology and Evolution of Infectious Disease 6th Annual Workshop, Colorado State University, US, 1-6 June 2008, (Talk).

• *Conspecific attraction and the scaling of animal aggregation patterns*, Ciclo de Seminarios Espresso del IMEDEA, IMEDEA, Esporles, Mallorca, España, April 2007, (Talk).

• *Short time dynamics and Self Organized criticality*, charla como parte del Workshop on Quantitative Ecology, ICTP, Trieste, Italia, 9-20 May 2005, (Talk).

• *Phase quantification and modelling in cast iron austemperization*, Karina F. Laneri, Pere Bruna and Daniel Crespo, ISIAME 2004, Madrid, Spain 2004 (Poster).

• *Fundiciones de Fe: Caracterización, Modelos y Simulaciones Monte Carlo*, Ciclo de seminarios del Dpto. de Física, UNLP , August 2003. (Talk).

• *Distribución de intersticiales en la fase fcc de la austenita Fe-C: Monte Carlo y espectroscopía Mössbauer*, Ciclo de seminarios del laboratorio 2002, UNLP, August 2002, (Talk).

• *On the Mössbauer Pattern of fcc Fe-C austenite phase and Fe8C model,* K. Laneri, J. Desimoni and J. M. Genin, L.A.C.A.M.E. Panamá, 22-27 September 2002, (Poster).

• *Microestructural Characterization of vermicular cast iron with low Mn content,* P. Bruna, K. F. Laneri, D. Crespo, R. W. Gregorutti, J. Desimoni, II Encuentro Franco Español de Química y Física del Estado Solido, Girona, Spain, 20-23 March 2002, (Poster).

• *Austempering transformation in 0.11wt% Mn Vermicular Cast Iron*, K. Laneri, J. Desimoni, R. C. Mercader, R. W. Gregorutti, J. L. Sarutti, I.C.A.M.E. Oxford, UK, September 2-7 2001, (Poster).

• *El tippe top*, Ciclo de charlas de divulgación del Departamento de Física, UNLP, April 2001, (Talk).

• *Stability and transformations of Retained Austenite in Ductile and Vermicular Cast Irons*, R. Gregorutti, J. Sarutti, K. Laneri, J. Desimoni , Sikora, *Poster*, First International Conference on Retained Austenite, The 20 th Heat Treating Society Conference, St. Louis, Missouri, US, October 9-12 de 2000, (Poster presented by R. Gregorutti.).

• *Simulaciones Monte Carlo en la fase fcc del sistema Fe-C*, K. F. Laneri, J. Desimoni , G. J. Zarragoicoechea, A.F.A 85 Reunión Nacional de Física, Buenos Aires 2000, (Poster).

• *Influencia de la Temperatura y del contenido de Mn en la cinética de austemperizado de fundiciones vermiculares*, K. Laneri, J. Desimoni, R. C. Mercader, R. W. Gregorutti, J.

L. Sarutti, A.F.A 85 Reunión Nacional de Física, Buenos Aires, 2000, (Poster).

- *Fundiciones vermiculares: Dependencia con la temperatura de austemperizado de la transformación austenita/ferrita*, Ciclo de seminarios del laboratorio 2000, UNLP, Abril 2000, (Talk).

- *Dependencia de la cinética de transformación con la temperatura de austemperizado en fundiciones vermiculares,* K. Laneri, J. Desimoni, R. C. Mercader, R. W. Gregorutti, J. L. Sarutti, A.F.A 84 Reunión Nacional de Física, Tucumán, 1999, (Poster) .

- *Influencia del contenido de Mn en la cinética de Austemperizado de fundiciones de Fe*, K. Laneri, J. Desimoni, R. C. Mercader , R. W. Gregorutti, J. L. Sarutti , A.F.A 83 Reunión Nacional de Física, La Plata, 1998, (Poster).

- *Cinética de austemperizado en fundiciones de alto y bajo Mn*, K. Laneri, J. Desimoni, R. C. Mercader, R. W. Gregorutti, J. L. Sarutti, SAM 98- Iberomet V, Rosario, Septiembre de 1998, (Poster).

- *Cinéticas de austemperización en fundiciones de Fe,* K. Laneri, J. Desimoni, R. C. .Mercader, R. W. Gregorutti, J. L. Sarutti , A.F.A 80 Reunión Nacional de Física-Bariloche 1995, (Poster).

Recent workshops and courses

- Summer School on Mathematics of Movement, 5th July to 23rd July 2023, Isaac Newton Institute for Mathematical Sciences, Cambridge, UK.

- Tiny Machine Learning course October 18th-22nd 2021, in the framework of the TinyML Academic Network, International Center for Theoretical Physics, Trieste, Italia (ICTP) http://indico.ictp.it/event/9622/, https://tinyml.seas.harvard.edu/.

- Tiny Machine Learning course, July 4th - 8th 2022, Latin American regional workshop on SciTinyML: Scientific Use of Machine Learning on Low-Power Devices | (smr 3721) http://indico.ictp.it/event/9811/.

- Introduction to Python for Physics and Engineering, Instituto Balseiro, grade: 9/10, duration: 64 horas, February-May 2019.

- On-line course on QGIS, Information Geographic Systems, level I, Cambalache Cooperativa Geográfica, duration: 45 horas, August-October 2017.

- Postgraduate course “Visual computing with Processing, Shaders & Proscene”, by Dr. Andrés Colubri, Research Scientist, Harvard University, Broad Institute of MIT & Harvard y Senior Developer, Processing Foundation, Boston MA, USA, Instituto Balseiro, Bariloche, Argentina, 20 hs, 31st October to 4th November 2016.

• Co-Organization 3rd School on General Purpose Graphic Processing Units (3GPGPU) for scientific applications, Centro Atómico Bariloche, Argentina, 5-9 May 2014 .

• Introduction to computing on graphic processing units (ICNPG 2012), Centro Atómico Bariloche, Argentina, duration: 64 horas, March-May 2012.

Scientific agreements and services

• Participant on the "Technical advice on municipal public policies in Bariloche, in the context of the Covid-19 pandemic.", Program for the articulation and federal strengthening of capacities in science and technology COVID-19 (RESOL-2020-170-APN-MCT / RN20), National Ministry of Science and Technology.

• Co-Responsible of Technological Service (STAN): ST4121, "Traducción de planillas de cálculo a leguaje C", CONICET 2018.

• Responsible Member of the Technical Asistance Agreement between CONICETand the Sanitary Plannification Subsecretary CABA-UNCOMA, Docket number: 4352/17, Objective: to apply statistical space-time techniques to characterize recent dengue outbreaks in Buenos Aires City and search for transmission patterns to help on dengue control 2019.

Technical reports

1) Technical report for the National Atomic Energy Comission, Laila Kazimierski Guillermo Abramson, Karina Laneri, Nicolás Catalano, Cristian Roddick, Leonardo Morbidel, Guillermo Amico, Agustina Balazote, Pablo Constanzo Caso, Development of a monitoring system to track small animals in the Patagonian forest, June 2018.

2) Technical report for the National Atomic Energy Comission, Nicolás Catalano, Cristian Roddick, Pablo Constanzo Caso, Laila Kazimierski, Karina Laneri, Guillermo Abramson, Develpment of a system form the estimation of direction of arrival using signals phase difference, December 2018.

Scholarships

• Postdoctoral scholarship CONICET for the repatriation of scientists (previous to my insertion in the Research Scientific Career of CONICET), 25/7/2012 to 24/2/2013.

• Postdoctoral scholarship for young foreign doctors, Ministerio de Educación y Ciencia de España (MEC), Mallorca, 6/2006-12/2007.

• Postdoctoral fellowship associated to an NIH project, The Biophysical Interdisciplinary Jerome Schottenstein Center for the Early Detection of Cancer, Physics Department, Bar-Ilan University, Israel, from 5/2004 to 12/2004.

- PhD scholarship, CONICET, Argentina,1/4/2000 - 1/4/2004.
- PhD scholarship, National Agency for the Promotion of Science and Tecnology (ANPCyT), Argentina, 1/6/99 - 1/4/2000.
- Scholarship for outstanding university students, Antorchas Foundation, Argentina, 30/03/98 – 30/03/99

Awards:

- *"IoT into the Wild Contest for a Sustainable Planet 2022"* sponsored by SEEED in Hackster.io, for the project: "Study of Animal Movement: Equipment Design and Development", "Innovative and Creative Project Award", the prize was a coupon for US$ 500 to buy Seeed equipment, October 2022, https://www.hackster.io/471203/study-of-animal-movement-equipment-design-and-development-febb17.

Projects with current funding:

- Responsable member of PICT-2020- SERIE A-01142, Movement patterns of the tortoise *Chelonoidis chilensis* and its ecological significance in the ecosystem, February 2022-February 2025, $ARS 1.410.000 for 3 years, Funding Institution: Agency for Scientific and Technological Promotion (ANPCyT).
- Responsable member of PIP 11220200101646CO 2021-2023 GI, "Study of the movement of tortoise *Chelonoidis chilensis* and it role in the ecosystem", $ARS 1.110.000 for 3 years, Funding Institution: CONICET.
- Responsable member of PICT-2019-03558 Plan Argentina Innovadora 2020: "Infectious diseases transmitted by vectors in Argentina: mathematical models, computer simulations, and data-based statistical inference", 2019-2021, $ARS 1.063.125 for 3 years, Funding Institution: Agency for Scientific and Technological Promotion (ANPCyT).

Other data of interest

- **Languages**: Spanish, English, French, Catalan (level B), Hebrew (initial level), German (level A1).
- **Programming languages**: Latex, R, FORTRAN, C++, CUDA/C, Python.
- Member of the Master in Science Committee for the Complex Systems Orientation, Balseiro Institute Feb 2020 to the present.
- State Working Union (ATE) representative in Centro Atómico Bariloche May 2017-August 2019.
- Member of the "Women workers group of Centro Atómico Bariloche and Centro Tecnológico Pilcaniyeu" from 2018 to the present.

- Participation in several assessor commissions of the Physics Department, La Plata National University, Argentina, from 1995 to 2003.
- Head of the Statistical and Interdisciplinary Group, Bariloche, Argentina, December 2024 to the present.