

BERNARDO GABRIEL MINDLIN
CURRICULUM VITAE

Bernardo Gabriel Mindlin

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Estudios:

- Ph. D. In Physics, Drexel University, Philadelphia (1991)
- Licenciado en Ciencias Físicas (Master), Universidad de La Plata, Argentina (1987)

Áreas de interés:

Dinámica no lineal, sistemas complejos, biofísica. Neurociencia y biomecánica de la producción vocal aviar. Inteligencia artificial.

Empleos:

- Profesor, Departamento de Física, , FCEyN, Universidad de Buenos Aires, desde agosto de 1993 hasta el presente. Categoría actual: profesor titular.
- Investigador del CONICET, Argentina, Ingreso en 1993. Cargo actual, Investigador superior.
- Investigador asociado, INLS, University of California, San Diego, febrero 2003- marzo 2004 (licencia sabática de los cargos de Argentina)
- Profesor, Universidad de Navarra, Pamplona, España, Octubre 1992 - Julio 1993.
- Profesor asistente, Universidad de Navarra, Pamplona, España, Diciembre 1991 - Octubre 1992.
- Chercheur associe, CNRS, France (Mayo 1997- Agosto 1997, Diciembre 2001-Marzo 2002)
- Teaching Assistant, Drexel University, Philadelphia, Julio 1988 - Diciembre 1991.

Responsabilidades en cargos de gestión: Secretario de Postgrado de la Facultad de ciencias exactas y Naturales, UBA, 2018-2021.

Responsabilidades editoriales:

- **Editor** Chaos, Solitons and Fractals (2019-presente)
- **Advisory board.** Chaos: and Interdisciplinary journal of nonlinear science. (AIP) (2018-presente)

Libros:

Nonlinear Dynamics: a two way trip from Physics to Math, H. Solari, M. Natiello and G. B. Mindlin, IOP, London (1996)

The Physics of Birdsong, Gabriel B. Mindlin, Rodrigo Laje, Springer, Heidelberg ISBN 3-540-25399-8 (2005)

Causas y Azares: historia del caos y los sistemas complejos, Gabriel Mindlin, Editorial Siglo XXI, Bs As, Argentina, colección Ciencia que Ladra (2008).

Dinamica No lineal, Gabriel B. Mindlin, Editorial Universidad Nacional de Quilmes, (2018) ISBN. 978-987-558-503-4.

Premios:

- **De Robertis**, Secretaría de Ciencia y técnica de la Nación Argentina, 1994.
- **Ernersto Galloni**, Academia Nacional de Ciencias Exactas y Naturales (Argentina), 1997.
- **Senior Fellow**, Santa Fe institute, New Mexico, USA, 2002-2004
- **Premio estímulo Científico Joven, Fundación Bunge y Born 2004**
- **Arthur Taylor Winfree award, ICTP, Trieste 2004**
- **Fellow AAAS, 2010.**
- **Miembro de la Academia de Ciencias Latinoamericanas, 2020**
- **Diploma de honor KONEX 2023**

Dirección de tesis doctorales

1. **“Mecanismos de transición a la complejidad espacio-temporal en fluidos”:** 10/05/2000, Darío Krmpotic, UNLP.
2. **“Estructura topologica de flujos caóticos”:** 6/6/2001. Denisse Sciamarella, UBA.
3. **“Sistemas Ópticos Excitables”:** 12/12/2002, Alejandro Yacomotti, UBA.
4. **“Estadística y procesamiento de información en sistemas excitables con ruido”:** 10/10/2002, Manuel Eguia, UBA.
5. **“Generalización de la resonancia estocástica”**, 14/12/2004, J. Mendez, UBA
6. **“La física del canto de las aves”**, Laje, R. 01/10/2005, UBA
7. **“Producción de voz, control neuronal y biometría”**, Marcos Trevisan, 26 de julio de 2006
8. **“Efectos no lineales en la generación del canto de las aves”**, Ana Amador, UBA, mayo 2009
9. **“Efectos hormonales en la maduración del canto de las aves”**, Jorge Alliende, 10/2/2010
10. **“Biomimética vocal”**, Jacobo Sitt, 15/2/2010, UBA
11. **“Oscilaciones no lineales en el canto de las aves”**, Leandro Alonso, 15/6/2012, UBA
12. **“Modelos de baja dimensión para canto de aves y aplicación a interfaces cerebro maquina”** Ezequiel Arneodo, 12/03/2012, UBA

13. “Enfriamiento de núcleos telencefálicos para testear la relación de escalas temporales en un modelo de canto de las aves”, Matias Goldin, 03/2014, UBA
14. "Análisis de modelos macroscópicos para retratar la dinámica del sistema del canto en aves" . Dima, Germán César. (2018). UBA.
15. "Un modelo integrado para el control motor del canto en canarios domésticos" . Rodrigo Alonso (2018). UBA
16. “Dinámica no lineal y redes complejas”, Gonzalo Uribarri (2021)
17. “Biomecánica y dinámica de la producción vocal en aves suboscinas”, Juan Doppler (2021)

Tesis doctorales en curso:

18. “Aprendizaje profundo aplicado a la neuroetología del canto aviar”, Roberto Bistel (defensa estimada 2024)
19. “Mecanismos físicos en la respiración aviar” Facundo Fainstein (defensa estimada 2025)
20. “Actividad media en núcleos neuronales del sistema del canto” Leandro Fernandez (defensa estimada 2026)

Trabajos seleccionados:

- Bush, A., Döppler, J. F., Goller, F., & Mindlin, G. B. (2018). Syringeal EMGs and synthetic stimuli reveal a switch-like activation of the songbird’s vocal motor program. *Proceedings of the National Academy of Sciences*, *115*(33), 8436-8441.
- T. Gardner, G. Cecchi, M. Magnasco, R. Laje and G. B. Mindlin “Simple gestures for birdsongs”, *Phys. Rev. Letts.* **87** art 208101 (2001)
- Amador, Ana, et al. "Elemental gesture dynamics are encoded by song premotor cortical neurons" *Nature* (2013).

Patentes:

1. “Topological voiceprints for speaker identification”, G. B. Mindlin, M. Trevisan, and M. Eguía, UCSD-UBA-UNQ Patent application filed by UCSD, application number 60/497,007 Priority date, Aug 20, 2003. Agosto 20, 2004.
2. “Procedimiento para el reconocimiento de la identidad de un hablante por medio de la reconstrucción de propiedades ergonómicas mediante el uso de la voz”, inventores G. B. Mindlin, M. Trevisan and M. Eguía, CONICET; INPI, Argentina, 22 diciembre 2009, Nro. AR 047710 B1

Artículos en revistas con arbitraje:

- 1 H. Vucetich, R. Mercader, G. Lozano, G.B. Mindlin, A. López García, J. Desimoni. "Mossbauer Null Redshift Experiment", *Phys. Rev. D* 38 n. 10 (1988).

- 2 D.L. González, M.O. Magnasco, G.B. Mindlin, H. Larrondo and L. Romanelli. "Gyration Number and Topology of the Period Doubling Bifurcation", J. Opt. Soc. Am. B, 5 n. 5 (1988).
- 3 González, M.O. Magnasco, G.B. Mindlin, H. Larrondo and L. Romanelli. "A Universal Departure From the Classical Period Doubling Spectrum, Physica D 39 (1989).
- 4 **G.B. Mindlin, X Hou, H. Solari, R. Gilmore and N.B. Tuffiaro. "Classification of Strange Attractors by Integers", Phys. Rev. Letts. 64 n. 20 (1990).**
- 5 X. Hou, R. Gilmore, G.B. Mindlin and H. Solari. "An Efficient Algorithm for Fast $O(N \ln N)$ Box Counting", Phys. Letts. A 151 n. 1,2 (1990).
- 6 **C. Green, G.B. Mindlin, E. D'Angelo, H. Solari and J.R. Tredicce. "Spontaneous Symmetry Breaking in a Laser The Experimental Side", Phys. Rev. Letts. 65 n. 25 (1990).**
- 7 G.B. Mindlin, H. Solari, M. Natiello, R. Gilmore and X. Hou. "Topological Analysis of Chaotic Time Series Data From the Belousov Zhabotinskii reaction", J. Nonlinear Sci. 1 147-173 (1991).
- 8 F. Papoff, A. Fioretti, E. Arimondo, G.B. Mindlin, H. Solari and R. Gilmore. "Structure of Chaos in the Laser with Saturable Absorber", Phys. Rev. Letts. 68, n. 8, 1128-1131 (1992).
- 9 E. D'Angelo, E. Izaguirre, G.B. Mindlin, G. Huyat, L. Gil, J. Tredicce. "Spatio Temporal Dynamics in the Presence of An Imperfect $O(2)$ Symmetry", Phys. Rev. Letts. 68, n.25, 3702-3705 (1992).
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- 12 G.A. Cecchi, D.L. González, M. Magnasco, G.B. Mindlin, O. Piro, A. Santillan, "Periodically Kicked Hard Oscillators", Chaos, vol. 3, number 1, 51 (1993).
- 13 R. Lopez Ruiz, G. B. Mindlin, C. Perez Garcia, J. Tredicce, "A Mode-Mode Interaction for a CO₂Laser with Imperfect $O(2)$ Symmetry", Phys. Rev. A, vol. 47, number 1, 500-509 (1993).
- 14 T. Ondarcuhu, G. B. Mindlin, H. Mancini, C. Perez Garcia, "Dynamical Patterns in Benard Marangoni Container with Square Symmetry", Phys. Rev. Letts., vol. 70, 3892-3895 (1993).
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- 19 Lopez Ruiz, G. B. Mindlin, C. Perez Garcia, J. Tredicce, "Nonlinear Interaction of Transversal Modes in a CO₂ Laser", Phys. Rev. A, 49, 4916 (1994)

- 20 M. Huerta, D. Krmpotic, G. B. Mindlin, H. Mancini, D. Mazza, C. Perez "Dynamics of Patterns in a Benard Marangoni Experiment", *Physica D*, vol. 96 200 (1996)
- 21 G. B. Mindlin and H. G. Solari, "Topologically Inequivalent Embeddings", *Phys. Rev. E*, 52, 1497 (1995)
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- 23 G. B. Mindlin, H. G. Solari, "Torii and Klein Bottles in 4 Dimensional Chaotic Flows", *Physica D*, 102, 177 (1997)
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- 30 Yacomotti, O. Martinez, G. B. Mindlin, "Quantitative information from time series: Cr:yttrium-aluminum-garnet cross-section measurement", *Phys. Rev. A*, in press (scheduled for A01jly 99) (1999)
- 31 M. Eguia, G. B. Mindlin, "From excitability to determinism in low frequency fluctuations", *Phys. Rev. E.*, 60 (2) 1551-1557 (1999)
- 32 D. Sciamarella and G. B. Mindlin, "Topological structure of chaotic flows from human speech chaotic data", *Phys. Rev. Letters*, 82, 1450 (1999)
- 33 Yacomotti, M. Eguia, J. Aliaga, O. Martinez, G. B. Mindlin, and A. Lipsich, "Interspike time distribution in noise driven excitable systems", *Phys. Rev. Letts.*, 83 (2) 292-295 (1999)
- 34 D. Strier, A. Duarte, H. Ferrari and G. B. Mindlin, "Nitrogen stars: Morphogenesis of a liquid drop", *Phys. Rev. . Physica A* 283 262-266 (2000)
- 35 Eguia M. C. Y G. B. Mindlin, "Distribution of Interspike times in noise driven excitable systems", *Phys. Rev. E.*, 61, 6490-6499 (2000)
- 36 Sigman M. And G. B. Mindlin " Dynamics of three coupled excitable cells with D3 symmetry", *IJBC*, 10, 1709-1728 (2000)
- 37 P. Mininni, D. Gomez and G. B. Mindlin, "Stochastic Relaxation Oscillator Model for the Solar Cycle", *Physical Review Letters*, 85, 5476 (2000)
- 38 Trevisán M., Eguía M., Mindlin G. B., "Nonlinear aspects of análisis and síntesis of speech time series", *Phys., Rev. E* 6302 6216 (2001).
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- 42 R. Laje, T. Gardner and G. B. Mindlin, “The effect of feedback in the dynamics of the vocal folds”, Phys Rev. E, 64 art 056201 (2001)
- 43 T. Gardner, G. Cecchi, M. Magnasco, R. Laje and G. B. Mindlin “Simple gestures for birdsongs”, Phys. Rev. Letts. 87 art 208101 (2001)**
- 44 M. C. Eguia, S. Ponce Dawson and G. B. Mindlin, “Computing with excitable systems in a noisy environment”, Phys. Rev. E **65** art 047201 (2002)
- 45 A. Ventura, G. B. Mindlin and S. Ponce Dawson, “A generic model for 2d excitability”, Physical Review E, 65, 046231 (2002)
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- 48 P. Mininni, D. Gomez, G. B. Mindlin, “Bi orthogonal decomposition unveils the nature of irregularities in the sun spot numbers” Phys. Rev. Letts. 89, 061101 (2002) cover, 5th agosto 2002
- 49 Jorge M. Mendez, J. Aliaga, and G. B. Mindlin, “Topologically inequivalent orbits induced by noise”, J. Mendez, J. Aliaga and G. B. Mindlin, Phys. Rev. Letts. , 89, 160601 (2002)
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- 52 G. B. Mindlin, T. Gardner, F. Goller, R. Suthers, “Experimental test of a model for birdsong production”, Phys. Rev. E, 68, 041908 (2003)
- 53 R. Laje and G. B. Mindlin, “Highly structured duets in the song of the South American Hornero”, Physical Review Letters, 91, 258104 (2003)
- 54 H. Abarbanel, L. Gibb, G. B. Mindlin, S. Talathi, “Mapping neural architectures onto acoustical features of birdsong”, J. Neurophysiol 92:96-110 (2004)
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- 56 H. Abarbanel, S.Talathi, G. B. Mindlin, M. Rabinovich, L. Gibb, “Dynamical model of birdsong maintenance and control” 051911, 1-16, Phys. Rev. E 70 (2004)
- 57 S. Bouzat, H. Wio and G. B. Mindlin, “Characterization of spatiotemporal chaos in an inhomogeneous active medium”, Physica D 199, 185-193 (2004) 1.
- 58 [Limits on the excitable behavior of a semiconductor laser with optical feedback](#)
J. M. Méndez, J. Aliaga, and G. B. Mindlin, Phys. Rev. E **71**, 026231 (2005)
- 59 Trevisan M., Eguia M. and Mindlin G. B., “Topological voiceprints for speaker identification”, Physica D 200, 75-80 (2005).
- 60 P. E. Jercog, M. A. Trevisan, G. B. Mindlin, Physica A, Subharmonics in the solutions of a model of the song motor nuclei in songbirds, 145-150, 356, 2005
- 61 M. A. Trevisan, S. Bouzat, I. Samengo, G. B. Mindlin, Physical Review E, Dynamics of learning in coupled oscillators tutored with delayed reinforcements, 011907-1/7, 72, 2005

- 62 A. Amador, M. A. Trevisan, and G. B. Mindlin. Simple neural substrate predicts complex rhythmic structure in duetting birds. *Phys. Rev. E* 72, 031905 (2005)
- 63 Zysman D., Méndez J., Aliaga J and G. B. Mindlin, "Synthesizing birdsong", *Phys. Rev. E*, 72, 261-264 (2005)
- 64 R. Laje and G. B. Mindlin, *Physical Review E*, "Modeling source-source and source-filter acoustic interaction in birdsong". Volumen 72 036218 (2005)
- 65 A. Granada^a, M. Gabitto^a, G. García^a, J. Alliende^a, J. Méndez^a, M.A. Trevisana^a and G.B. Mindlin, [Physica A: Volume 371, Issue 1](#) , 84-87, The generation of respiratory rhythms in birds (2006)
- 66 M. Trevisan, G. B. Mindlin and F. Goller, Nonlinear model predicts diverse respiratory patterns of birdsong, *Phys. Rev. Letts* ,**96**, art 054102 (2006)
- 67 Respiratory patterns in oscine birds during normal respiration and song production
M. A. Trevisan, J. M. Mendez, and G. B. Mindlin
Phys. Rev. E **73**, 061911 (2006)
- 68 [Dynamical systems techniques reveal the sexual dimorphic nature of motor patterns in birdsong](#)
J. M. Mendez, J. A. Alliende, A. Amador, and G. B. Mindlin
Phys. Rev. E **74**, 041917 (2006)
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- 70 Lateralization as a symmetry breaking process in birdsong, Trevisan M, Cooper B, Goller F and Mindlin G. B., *Physical Review E*, *Phys. Rev. E* **75**, 031908 (2007)
- 71 [Bilateral source acoustic interaction in a syrinx model of an oscine bird](#) , Rodrigo Laje, Denisse Sciamarella, Juan Zanella, and Gabriel B. Mindlin, *Phys. Rev. E* **77**, 011912 (2008)
- 72 The dynamical origin of physiological instructions used in birdsong production, E. Arneodo, L. Alonso, J. Alliende and G. B. Mindlin, *Pranama* 70, 6, 1-9 (2008)
- 73 Frequency modulation during song in a suboscine does not require vocal muscles, A. A,ador, F. Goller and G. B. Mindlin, *J. Neurophysiol.*, 99, 2383-2389 (2008)
- 74 [Dynamical origin of spectrally rich vocalizations in birdsong](#) , J. D. Sitt, A. Amador, F. Goller, and G. B. Mindlin, *Phys. Rev. E* 78, 011905 (2008)
- 75 Beyond Harmonic Sounds in Birdsong, A. Amador and G. B. Mindlin, *CHAOS* 18, 043123 1-6 (2008)
- 76 New Perspectives on the physics of Birdsong , M. A. Trevisan and G. B. Mindlin, *Phil. Trans. R. Soc. A* 28 Agosto 2009 vol. 367 no. 1901 3239-3254 (2009)
- 77 Neurophysiological Bases of Exponential Sensory Decay and Top-Down Memory Retrieval: A Model. Ariel Zylberberg,¹ Stanislas Dehaene,^{2,3*} Gabriel B. Mindlin,¹ and Mariano Sigman¹ *Front Comput Neurosci.* 2009; 3: 4 (2009)
- 78 Low-dimensional dynamical model for the diversity of pressure patterns used in canary song, Leandro M. Alonso,¹ Jorge A. Alliende,¹ F. Goller,² and Gabriel B. Mindlin¹, *Phys. Rev. E* 79, 041929 (2009)
- 79 Source-tract coupling in birdsong production, Ezequiel M. Arneodo and Gabriel B. Mindlin, *Phys. Rev. E* 79, 061921 (2009)
- 80 [Physiologically driven avian vocal synthesizer](#), Jacobo D. Sitt, Ezequiel M. Arneodo, Franz Goller, and Gabriel B. Mindlin *Phys. Rev. E* 81, 031927 (2010)

- 81 Dynamical origin of complex motor patterns, Alonso Leandro, Alliende J., Gabriel B. Mindlin, EPJD, invited paper, colloquium, Eur. Phys. J. D, [Volume 60, Number 2](#), 361-367, DOI: 10.1140/epjd/e2010-00225-2
- 82 Hormonal acceleration of song development illuminates motor control mechanism in canaries, Jorge A. Alliende, Jorge M. Méndez, Franz Goller, Gabriel B. Mindlin, *Developmental Neurobiology* [Volume 70, Issue 14](#), pages 943–960, Diciembre 2010
- 83 Smooth Operator: Avoidance of Subharmonic Bifurcations through Mechanical Mechanisms simplifies Song Motor Control in Adult Zebra Finches, Coen Elemans, Rodrigo Laje, Gabriel Mindlin, and Franz Goller, *The Journal of Neuroscience*, October 6, 2010, 30(40):13246-13253; doi:10.1523/JNEUROSCI.1130-10.2010
- 84 Average dynamics of a driven set of globally coupled excitable units, Alonso L. and Mindlin G. B., *Chaos* 21, 023102 (2011); doi:10.1063/1.3574030 (5 pages) Online Publication Date: 7 Abril 2011
- 85 Acoustic signatures of sound source-tract coupling, Ezequiel M. Arneodo, Yonatan Sanz Perl, and Gabriel B. Mindlin, *Phys. Rev. E* 83, 041920 (2011) [9 pages]
- 86 Reconstruction of physiological instructions from Zebra finch song, Yonatan Sanz Perl, E. M. Arneodo, A. Amador, F. Goller and G. B. Mindlin, *Phys. Rev. E, Phys. Rev. E* 84, 051909 (2011)**
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- 107 Young, B. K., Mindlin, G. B., Arneodo, E., & Goller, F. (2017). Adult zebra finches rehearse highly variable song patterns during sleep. *PeerJ*, 5, e4052.
- 108 M. Garcia, Cecilia Kopuchian, Gabriel B. Mindlin, Matthew J. Fuxjager, Pablo L. Tubaro, Franz Goller Evolution of Vocal Diversity through Morphological Adaptation without Vocal Learning or Complex Neural Control - *Current Biology* (2017) DOI: <http://dx.doi.org/10.1016/j.cub.2017.07.059>
- 109 Dima, G. C., Goldin, M. A., & Mindlin, G. B. (2018). Modeling temperature manipulations in a circular model of birdsong production. *Papers in Physics*, 10.
- 110 Amador, A., & Mindlin, G. B. (2018). Correction to: Low dimensional dynamics in birdsong production. *The European Physical Journal B*, 91(10), 230.
- 111 Döppler, J. F., Bush, A., Goller, F., & Mindlin, G. B. (2018). From electromyographic activity to frequency modulation in zebra finch song. *Journal of Comparative Physiology A*, 204(2), 209-217. Sarah Mindlin GB (2018) Towards an integrated view of vocal development. *PLoS Biol* 16(3): e2005544. <https://doi.org/10.1371/journal.pbio.2005544>
- 112 Mindlin, G. B. (2018). Towards an integrated view of vocal development. *PLoS biology*, 16(3), e2005544.
- 113 Dima, G. C., Copelli, M., & Mindlin, G. B. (2018). Anticipated Synchronization and Zero-Lag Phases in Population Neural Models. *International Journal of Bifurcation and Chaos*, 28(08), 1830025.

- 114Döppler, J. F., Bush, A., Amador, A., Goller, F., & Mindlin, G. B. (2018). Gating related activity in a syringeal muscle allows the reconstruction of zebra finches songs. *Chaos: An Interdisciplinary Journal of Nonlinear Science*, 28(7), 075517.
- 115Bush, A., Döppler, J. F., Goller, F., & Mindlin, G. B. (2018). Syringeal EMGs and synthetic stimuli reveal a switch-like activation of the songbird's vocal motor program. *Proceedings of the National Academy of Sciences*, 115(33), 8436-8441.
- 116Boari, S., Uribarri, G., Amador, A., & Mindlin, G. B. Observable for a Large System of Globally Coupled Excitable Units. *Mathematical and Computational Applications*, 24(2), 37 (2019).
- 117N. E. Sujovolsky, G. B. Mindlin, and P. D. Mininni, Invariant manifolds in stratified turbulence, *Phys. Rev. Fluids* 4, 052402(R) (2019)
- 118Shalom, Diego E., et al. "Fading of collective attention shapes the evolution of linguistic variants." *Physical Review E* 100.2 (2019): 020102.
- 119Discrete Anatomical Coordinates for Speech Production and Synthesis, Florencia Assaneo, Daniela Ramirez Butavand, Marcos A. Trevisan¹ and Gabriel Mindlin. *Front. Commun.*, 17 April 2019 | <https://doi.org/10.3389/fcomm.2019.00013> (2019)
- 120Lassa Ortiz, J. N., Herbert, C. T., Mindlin, G. B., & Amador, A. (2019). Significant instances in motor gestures of different songbird species. *Frontiers in Physics*, 7, 142.
- 121Tubaro, P. L., & Mindlin, G. B. (2019). A dynamical system as the source of augmentation in a deep learning problem. *Chaos, Solitons & Fractals: X*, 100012.
- 122Uribarri, Gonzalo, et al. "Unusual Avian Vocal Mechanism Facilitates Encoding of Body Size." *Physical Review Letters* 124.9 (2020): 098101.
- 123Boccaletti, Stefano, et al. "Modeling and forecasting of epidemic spreading: The case of Covid-19 and beyond." *Chaos, Solitons, and Fractals* 135 (2020): 109794.
- 124Herbert, Cecilia T., et al. "Dynamical model for the neural activity of singing *Serinus canaria*." *Chaos: An Interdisciplinary Journal of Nonlinear Science* 30.5 (2020): 053134.
- 125Tagliacucchi, E., et al. "Lessons from being challenged by COVID-19." *Chaos, Solitons & Fractals* 137 (2020): 109923.
- 126Uribarri, G., & Mindlin, G. B. (2020). The structure of reconstructed flows in latent spaces. *Chaos: An Interdisciplinary Journal of Nonlinear Science*, 30(9), 093109.
- 127Döppler, J. F., Amador, A., Goller, F., & Mindlin, G. B. (2020). Dynamics behind rough sounds in the song of the *Pitangus sulphuratus*. *Physical Review E*, 102(6), 062415.
- 128Uribarri, G., Rodríguez-Cajarville, M. J., Tubaro, P. L., Goller, F., & Mindlin, G. B. (2020). Unusual avian vocal mechanism facilitates encoding of body size. *Physical Review Letters*, 124(9), 098101.
- 129Goller, F., Love, J., & Mindlin, G. (2021). Different frequency control mechanisms and the exploitation of frequency space in passerines. *Ecology and evolution*, 11(11), 6569-6578.
- 130Amador, A., & Mindlin, G. B. (2021). Synthetic Birdsongs as a Tool to Induce, and Listen to, Replay Activity in Sleeping Birds. *Frontiers in Neuroscience*, 835.
- 131Döppler, J. F., Peltier, M., Amador, A., Goller, F., & Mindlin, G. B. (2021). Replay of innate vocal patterns during night sleep in suboscines. *Proceedings of the Royal Society B*, 288(1953), 20210610.

- 132Bistel, Roberto A., Alejandro Martinez, and Gabriel B. Mindlin. "Neural networks that locate and identify birds through their songs." *The European Physical Journal Special Topics* 231.3 (2022): 185-194.
- 133Fainstein, F., Geli, S. M., Amador, A., Goller, F., & Mindlin, G. B. (2021). Birds breathe at an aerodynamic resonance. *Chaos: An Interdisciplinary Journal of Nonlinear Science*, 31(12), 123132.
- 134Bishal, R., Mindlin, G. B., & Gupte, N. (2022). Multifractal analysis of birdsong and its correlation structure. *Physical Review E*, 105(1), 014118.
- 135Boari, S., Mindlin, G. B., & Amador, A. (2022). Neural oscillations are locked to birdsong rhythms in canaries. *European Journal of Neuroscience*, 55(2), 549-565.
- 136Uribarri, G., & Mindlin, G. B. (2022). Dynamical time series embeddings in recurrent neural networks. *Chaos, Solitons & Fractals*, 154, 111612.
- 137Pintos, A. P., Shalom, D. E., Tagliazucchi, E., Mindlin, G., & Trevisan, M. (2022). Cognitive forces shape the dynamics of word usage across multiple languages. *Chaos, Solitons & Fractals*, 161, 112327.
- 138Bistel, R., Martinez, A., & Mindlin, G. B. (2022). An analysis of the persistence of *Zonotrichia capensis* themes using dynamical systems and machine learning tools. *Chaos, Solitons & Fractals*, 165, 112803.
- 139Fernández, Ximena, Eugenio Borghini, Gabriel Mindlin, and Pablo Groisman. "Intrinsic Persistent Homology via Density-based Metric Learning." *Journal of Machine Learning Research* 24, no. 75 (2023): 1-42.

Consultorias:

1. Cancillería de la Nación Argentina and Wild Life Foundation, "El impacto sonoro de los helicópteros turísticos en las cataratas del Iguazu" (2001).
2. Identificación de edición en cintas grabadas, ordenada por el Juez Bonadio (2002)

Dirección de Estudiantes e Investigadores:

Doctorados, defendidos:

- *Dario Krmpotic, Ph. D.* UNLP (2000)
- *Denisse Sciamarella, Ph. D.*, U. Buenos Aires (2001)
- *Manuel Eguia, Ph. D.* U. Buenos Aires (2002)
- *Alejandro Yacomotti, Ph. D.* U. Buenos Aires (2002)
- Jorge Mendez, Ph. D U. Buenos Aires (2004)
- Rodrigo Laje, Ph. D. Buenos Aires (2005)
- Marcos Trevisan, Ph. D., Buenos Aires (2006)

- Ana Amador, Ph. D, Buenos Aires (2008)
- Jorge aliende, Ph. D, BsAs (2010)
- Jacobo Sitt, Ph.D, BsAs (2010) 15/02/2010 biomimetica vocal
- Alonso Leandro, PhD, Buenos Aires (2012)
- Ezequiel Arneodo, Ph. D., Buenos Aires (2012)
- Yonatan Sanz, Ph. D. Thesis in progress (2014)
- Matias Goldin, Ph.D, Buenos Aires (2014)
- Rodrigo Alonso (2018)
- German Dima (2018)
- Juan Doppler (2022)
- Gonzalo Uribarri (2022)

Tesis de Licenciatura, defendidas:

- Marina Huerta, tesis de licenciatura (1994), U. Buenos Aires
- José Caminos, tesis de licenciatura (1995), UNLP
- Nicolás Merener, tesis de licenciatura (1997), U. Buenos Aires
- Mariano Sigman, tesis de licenciatura (1997), U. Buenos Aires
- Manuel Eguia, tesis de licenciatura (1998), U. Buenos Aires
- Alejandro Yacomotti, tesis de licenciatura (1998) U. Buenos Aires
- Marcos Trevisán, tesis de licenciatura (2000), U. Buenos Aires
- Jorge Brea, tesis de licenciatura (2002), U. Buenos Aires
- Pablo Jercog, tesis de licenciatura (2002), U. Buenos Aires
- Adrián Granada, tesis de licenciatura (2005)
- Ana Amador, tesis de licenciatura (2004)
- Adrián Granada, tesis de licenciatura (2005)
- Jorge Alliende, tesis de licenciatura (2006)
- Mariano Gabitto, tesis de Licenciatura (2007)
- Leandro Alonso, tesis de licenciatura (2007)
- Rodrigo Alonso, tesis de licenciatura (2012)
- Nicolas Adreani, tesis de licenciatura (2012)
- German Dima, tesis de licenciatura (2013)
- Javier Roulet, tesis de licenciatura (2016)
- Agustin Sanchez, tesis de licenciatura (2016)
- Cecilia Herbert, tesis de licenciatura (2016)
- Gonzalo Uribarri, tesis de licenciatura (2016)
- Juan Doppler, tesis de licenciatura (2017)
- Marcos Wappner, tesis de licenciatura (2020)
- Camilo Cappagli, tesis de licenciatura (2020)
- Facundo Fainstein, tesis de licenciatura (2020)
- Sebastian Geli (2020)
- Josefina Catoni (2022)

Dirección de investigadores invitados y post-docs

- Ana Macho, Estudiante de la Universidad de Navarra, invitada a Buenos Aires (1996)
- Tim Gardner, Ph. D. Student de Rockefeller University, Invitado a Buenos Aires (2000)
- Mendez Jorge, post doc, CONICET (2006)
- Ezequiel Arneodo, post doc, Fundacion Bunge y Born, 2012-2014)
- Cecilia Jarne, post doc Conicet (2015-2017)
- Alan Bush, post doc Conicet (2016-2019)
- Hernan Bocaccio (2021-)

Presentaciones seleccionadas en conferencias:

1. Measures in Spatio Temporal Complexity, Bryn Mawr, USA 1995, "Low dimensional chaos in a Benard Marangoni Convection Experiment", G. B. Mindlin.
2. Chaos in Gravitational N-Body Systems, La Plata, Argentina, 1995. "Topological Analysis of Data", G. B. Mindlin and P. Boyd (Invited talk)
3. Medyfinol-96, Tucuman, Septiembre 1996, From Time Series to Physical Models: the Case of a Pulsating star, G. B. Mindlin (Invited talk)
4. Instabilities and Nonequilibrium Structures, Valparaiso, Chile (1997), "RoAp pulsating stars" (Invited talk)
5. LAWNP 99, Cordoba, October 1999 (Invited talk "Logic gates using noise driven excitable units").
6. SIAM dynamical systems meeting, Snowbird, Utah (USA), May 1999 (co organizer of a mini symposium , presentation of "Interspike Time Distribution in Noise Driven dynamical Systems").
7. SIAM dynamical systems meeting, Snowbird, Utah (USA), May 2001, Contributed presentation, "simple motor gestures in birdsong", T. Gardner and G. B. Mindlin
8. Society for Neuroscience's 31 annual meeting, San Diego, California, Noviembre 10 2001, T. Garner, G. Cecchi, M. Magnasco, R. Laje and G. B. Mindlin, "Simple motor gestures in birdsong"
9. Rencontre du non lineaire 2002, I. H. Poincare, Paris, D. Sciamarella and G. B. Mindlin, "Technique d'homologie pour la description topologique de flots chaotiques", Rencontre du non lineaire 2002, 243-248 (2002)
10. School on Nonlinear dynamics, IMCB, Brasilia, 1-5 Julio 2002 (invited lecturer, course on Normal forms)
11. Plenary Talk, Argentinean association of Physicists, Huerta Grande, Sept. 2002, " The physics of Birdsong".
12. Argentinean Biophysical Society meeting, SAB 2002, Buenos Aires, 5 Dec, Plenary talk
13. Medyfinol 2002, 9-13 Dec 2002, Colonia, Uruguay, Invited talk
14. SIAM dynamical systems meeting, Snowbird, Utah (USA), May 2003, Contributed presentation "Diversity within birdsong"
15. Meeting of the NE-Brasilian society of Physics, Plenary talk, Nov. 2003.

16. Internacional conference on voice physiology and biomechanics: modelling complexity. Marsella. Aug. 2004
17. Workshop TOCS, Porto Alegre, Brasil agosto 2004 (charla invitada “Physics and neural control of birdsong”)
18. Medyfinol 2004, La Serena, Chile, Diciembre 5-10, 2004 (invited talk: Sub harmonics and rhythms in birdsong)
19. Lawnp 05, Bariloche, Oct. 2005, (invited talk , “Complexity of behavior with simple neural sustrates in birdsong”)
20. X congress of the Panamerican Association for Biochemistry and Molecular Biology, Pinamar, Argentina, Dec. 2005. “Synthesizing birdsong” (Zysman, Mendez, Aliaga and Mindlin)
21. 8vo TALLER ARGENTINO DE NEUROCIENCIAS
5 AL 9 DE ABRIL DE 2006, Córdoba, organizador de mini simposio (invitados, Goller F. and Margoliash D.)
22. Experimental Chaos conference, San Pablo, Brasil, 29/05/2006-01/06/2006. “Simple neural architectures leading to diversity in birdsong”, with M. Trevisan.
23. PNLD, (Perspectives in Nonlinear Dynamics) Trieste (16-27 julio 2007). Course “physics and neural control of birdsong” in the workshop, Invited speaker.
24. Neuroscience meeting, Noviembre 2007, San Diego, USA (presentation of two posters) (924.18/QQ8) Frequency control during song does not require syringeal muscles in the Great Kiskadee
(Wednesday, Nov 7 2007 2:00 PM - 3:00 PM) *A. AMADOR¹, F. GOLLER², G. B. MINDLIN and
(926.1/RR15) Constraints between motor patterns in birdsong (Wednesday, Nov 7 2007 1:00 PM - 2:00 PM), G. B. MINDLIN¹, J. A. ALLIENDE², A. AMADOR², J. M. MENDEZ², M. A. TREVISAN², F. GOLLER
25. Neurotaller, Abril 2008, La Falda, Cordoba, Argentina, (presentation of two posters)
26. 1st CAPES and ELS-IINN/UFRN Summer School, 2nd Julio, 29 Agosto 2008, Natal, Brazil. Course on “The Physical and neural control of birdsong”.
27. Summer school 2009, Physics Department UFPE, Recife, Brazil (February 2009), School on Nonlinear Dynamics
28. Neuroscience meeting, Noviembre 2008, Washington, USA, , *Mon, Nov 17, 4:00 - 5:00 PM
492.8/UU6 - Beyond harmonic sounds in a simple model for birdsong production A. AMADOR^{1,2}, J. D. SITT², F. GOLLER³, G. B. MINDLIN²
29. Invited talk, Meeting of the Acoustical Society of America, 18-22 May 2009, Portland, Oregon, USA. 3aSC2. Source-filter interactions in birds—Theory and experimental evidence. Gabriel Mindlin, Ezequiel Arneodo _Dept. of Phys., Univ. of Buenos Aires, gabo.mindlin@gmail.com_, and Franz Goller _Univ. of Utah, Salt Lake City, UT, goller@biology.utah.edu_
30. Neuroscience meeting, October 2009, Chicago, Mon, Oct 19, 3:00 - 4:00 PM
483.3/GG68 - Hormonal acceleration of song development in canaries, *J. ALLIENDE GONZALEZ¹, J. M. MÉNDEZ^{1,2}, F. GOLLER², G. B. MINDLIN¹;
31. Real time birdsong synthesizer driven by physiological instructions, A. Amador and G. B. Mindlin, Neuromechanics symposium, University of Chicago, may 17-18 2010, Chicago.

32. XXII REUNIÓN NACIONAL DE FÍSICA SOCIEDAD BOLIVIANA DE FÍSICA, curso de sistemas complejos, G. B. Mindlin, 25-30/10/2010, Potosi, Bolivia
33. Dynamical origin of physiological gestures in birdsong, Plenary talk, Dynamics days Southamerica 2010, San Pablo, Brasil (25-30 Julio 2010)
34. XII Latin American Workshop on Nonlinear Phenomena (LAWNP-2011), October 10 to October 14, 2011, San Luis Potosi, Mexico (Plenary talk)
35. Motor Systems Poster Number 160 | Session 1 "Subject-controlled bioprothetic avian vocal organ" Ezequiel M. Arneodo, Yonatan Sanz Perl, Gabriel B. Mindlin XXVI congreso annual, Huerta grande, Cordoba, 18-22 octubre 2011
36. Motor Systems Poster Number 161 | Session 2 "Acoustic observables of sound source-tract coupling" Ezequiel M. Arneodo, Yonatan Sanz Perl, Gabriel B. Mindlin XXVI congreso annual, Huerta grande, Cordoba, 18-22 octubre 2011
37. Motor Systems Poster Number 164 | Session 2 "Syllable breaking after cooling telencephalic nuclei unveils the presence of a second timescale in the birdsong motor pathway" Matías A Goldin, Jorge A Allende, Gabriel B Mindlin
38. Sun, Nov 13, 4:00 - 5:00 PM 303.04/XX37 - Cooling telencephalic nuclei to test the interplay between timescales in a birdsong model, M. A. GOLDIN, J. A. ALLIENDE, G. B. MINDLIN, SFN 2011, Nov 12-16 Washington DC.
39. Mon, Nov 14, 4:00 - 5:00 PM 517.04/ZZ11 - Using a song production model to study tuning properties of selective neurons in zebra finches, A. AMADOR, Y. SANZ PERL, G. B. MINDLIN, D. MARGOLIASH, SFN 2011, Nov 12-16 Washington DC.
40. Bio-prothetic avian vocal organ based on a model of the biomechanics ". Meeting: 12Th Experimental Chaos and Complexity Conference. May 2012, Ann Arbor (MI), USA. Authors: Ezequiel M. Arneodo, Yonatan Sanz Perl, Franz Goller, Gabriel B. Mindlin.
41. A. Amador, Y. Sanz Perl, G.B. Mindlin and D Margoliash. "Motor coding unveiled by a low dimensional model of song production". 10th International Congress of Neuroethology, College Park, MD, USA, Agosto 5-10, 2012.
42. TREFEMAC La falda, cordoba 2012. La fisica del canto de la aves en neurociencias, GB Mindlin, charla planaria invitada, 2-4 mayo 2012
43. Congreso Internacional FENS Forum of Neuroscience. M.A.Goldin, L.M. Alonso, J.A.Alliende, F.Goller, G.B.Mindlin. "Testing a dynamical model of birdsong motor control with telencephalic cooling". Barcelona, España. 14 al 18 de Julio de 2012
44. A. AMADOR, Y. SANZ PERL, G.B. MINDLIN AND D. MARGOLIASH
45. Descifrando códigos neuronales con un modelo físico de canto de aves
46. XI Congreso Regional de Física Estadística y Aplicaciones a la Materia Condensada: TREFEMAC 2013
Lugar: La Plata Año: 2013
47. "Gesture dynamics are encoded by premotor cortical neurons in birdsong production", A. Amador, Y. Sanz Perl, Margoliash. D, Mindlin G. B., Plenary talk XVII Conference on Nonequilibrium Statistical Mechanics and Nonlinear Physics, Diciembre 3-7 2012, Santiago, Chile
48. XII Latin American Symposium on chronobiology, "Mathematical models and biological clocks", Chair, Tunuyan, Mendoza, Argentina October 29 (2013)

49. Society for Neuroscience, KKK19 196.08 Predictive and preceding motor activity in biophysical models of vocal production in songbirds, K. Brown, G. B. Mindlin and Margoliash D. Noviembre 10 (2013)
50. 47. A. AMADOR, Y. SANZ PERL, G.B. MINDLIN AND D. MARGOLIASH Using a low-dimensional birdsong model to unveil neural coding in zebra finches Annual Main Meeting of the Society for Experimental Biology Lugar: Valencia, España; Año: 2013;
51. A model for the song system in Serinus Canaria. G. Alonso, Goller F., Gabriel B. Mindlin, ICN, Montevideo, Uruguay 2016, March 30, Abril 3
52. Birdsong in Motor coordinates, Invited talk at StatPhys 2016, Lyon, France (Lyon 18-22 Julio 2016)
53. Listening to a bird's dream, invited talk, Medyfinol, Valdivia, Chile, Diciembre 5th to 9th, 2016
54. "Physics and neuroscience of birdsong" invited talk. "Fronteras en Biociencia", Instituto de Biomedicina de Buenos Aires (IBioBA) y Max Planck Institute, Noviembre 2016, Buenos Aires.
55. Workshop on dynamical Modeling, Cologne (3rd International Workshop on Dynamic Modeling: Cologne, 18-19 Julio 2017) Gabriel Mindlin: "A dynamical system's approach to birdsong production"
56. Dynamics of Complex Systems - 2017 (20 Junio 2017) Bangalore, India "The physics of birdsong"
57. ENFE, Brazil, 17 through Septiembre 20, 2017 Ilheus. Plenary talk: listening to the dreams of birds.
58. Dynamics days 2018, Punta del Este, Uruguay. Inducing dreams in oscine birds. (26-30 Noviembre 2018), plenary talk
59. Manifesting Intelligence 2020 (Chaos, meet Artificial Intelligence) (originally Madrid, finally virtual), plenary talk.
60. "Advanced Computational and Experimental Techniques in Nonlinear Dynamics" October 26 - 30, 2020 (plenary). Originally, Cuernavaca, Mexico. Finally virtual. Plenary talk.
61. "wavecomplexity international networking even", Universidad de Niza, plenary talk (1 june 2021)
62. "Neuroscience, Data Science and Dynamics", Bengaluru, India, Plenary talk (Feb 07 2022)
63. "Third workshop on nonlinear dynamics in biological systems" (09/06/2022) plenary talk

Coloquios, seminarios y otras charlas invitadas seleccionadas:

1. INSA, Rouen, France (1994) "Templates and Torii", invitado por G. Gouesbett
2. University of Navarra, Spain (1994) "Hidden Symmetries", invitado por C. Perez-García
3. Universidad Complutense, Spain (1995) Dept. Of applied math. invitado por H. Herrero
4. INLN, Nice invitado por J. Tredicce (1996)
5. U. de Navarra, invitado por H. Mancini (1997)

6. KTH, Universitet Stockholms, invitado por M. Natiello (1997)
7. Princeton University, Applied Math. Department, Invitado por P. Holmes (1999)
8. INLS, University of California at San Diego, (USA) invitado por H. Abarbanel (1999)
9. I. Balseiro at Bariloche (ARG), invitado por H. Wio (2000)
10. Drexel University (USA), invitado por Michel Vallieres (2001)
11. INLN (Nice, France), invitado por J. Tredicce (Enero 2002)
12. LIMSI (Orsay, France) invitado por D. Sciamarella (Febrero 2002)
13. UCSD, Neuroscience division, Department of Biology (USA), invitado por Nick Spitzer (Abril 2003)
14. UCSD, INLS, (USA), Invitado por H. Abarbanel.
15. University of Chicago, invitado por D. Margoliash, (October 2003)
16. Encontro de Fisica Nordeste Brasil – Fortaleza Brazil. (plenary talk) (Noviembre 2003.)
17. The physics of and neural control of Birdsong, IB, Centro atomico Bariloche, Oct. 2004
18. Escuela CAB-IB 2004 Bariloche, Argentina (Lecturer, course: the behavior as emergent of excitable systems) October 2004
19. INLN, Nice, invitado por J. Tredicce (Enero 2005)
20. Techtips, UCSD “Voiceprints for voice identification”, invitado por Laura Wolszon, Enero 2005
21. Experimental and Computational Neurodynamics Summer School, Agosto 15 - 26, 2005, UCSD, La Jolla, CA. A four lectures course for graduate students in neuroscience
22. Experimental Chaos conference, San Pablo, Brasil, invited lecture, 29/05/2006-01/06/2006
23. invited talk, 8th taller argentine de nuerociencias, Córdoba (2006)
24. BIOMAT, Córdoba, Argentina (2007). Birdsong and computational neuroscience.
25. BIOMAT, Córdoba, Argentina (2008). Low dimensional dynamics in the physiological gestures controlling birdsong.
26. Invited talk, Meeting of the Acoustical Society of America, 18-22 May 2009, Portland, Oregon, USA.
27. XXII REUNIÓN NACIONAL DE FÍSICA SOCIEDAD BOLIVIANA DE FÍSICA, Plenary, G. B. Mindlin, 25-30/10/2010, Potosi, Bolivia
28. Dynamical origin of physiological gestures in birdsong, Plenary talk, Dynamics days Southamerica 2010, San Pablo, Brasil (25-30 Julio 2010)
29. XII Latin American Workshop on Nonlinear Phenomena (LAWNP-2011), October 10 to October 14, 2011, San Luis Potosi, Mexico (Plenary talk)
30. TREFEMAC 2012 (10° Congreso Regional de Física Estadística y Aplicaciones a la Materia Condensada) La Falda, 2-4 May 2012 (Plenary Talk)
31. Medyfinol 2012, Santiago de Chile, Charla plenaria, 7/12/12, Santiago de Chile
32. Elemental motor gesture dynamics are encoded by song premotor cortical neurons in songbirds by *Gabriel B. Mindlin*, BCCN/BFNT AG-Seminar , Max Planck Institute for Complex Systems 18/12/12, 2013 MPI for Dynamics and Self-Organization Göttingen, Nonlinear Dynamics Group
33. Friday, 15 February 2013 Perception, motor control, and learning: Theory and experiment in bird song Neuromechanics of birdsong production: A new sensorimotor model. Daniel Margoliash, The University of Chicago and Gabriel Mindlin, Universidad de Buenos Aires Chained melody: “Sequence generation in the songbird forebrain and the emergence of higher-order syntactical structure”, Graduate center, CUNY, NY, USA

34. Faculty at 2nd Caribbean School of Neuroethology, 2013 IBRO-LARC_ISN School of Neuroscience, May 12-25 2013
35. Invited colloquium, Instituto Balseiro, Bariloche, Arg, 2014.
36. Course ICTP San Pablo, 4 lectures “Birdsong as a model for learning” 4/05/2014-9/05/2014, San Pablo, Brazil. IFT-UNESP. Mini school on Dynamical systems in Biology.
37. 99 RNF AFA, Tandil, 2014, Charla plenaria: “Canto en coordenadas motoras”, 22 al 25 de septiembre de 2014 Tandil, Buenos Aires. Centro Cultural Universitario.
38. **Ranwel Caputto Plenary Lecture Chair: Arturo Romano**, Instituto de Fisiología Biología Molecular y Neurociencias, Universidad de Buenos Aires **“Motor coordinates to study birdsong” Gabriel Mindlin, 3 october 2014, Huerta Grande, Cordoba Argentina.**
39. Birdsong: rhythms and clues, from neurons to behavior. Washington 14 Noviembre 2014, Washington DC, USA. Birdsong in Motor coordinates, G. B. Mindlin, invited talk.
40. Winter school in quantitative biology , ICTP, Trieste 1-12 Dec 2014 (invited series of lectures)
41. MURI winter school 2015: dynamics of multifunction brain networks”, UCSD , Enero 7-9 2015, G. B. Mindlin, invited course.
42. Seewiesen Colloquia, Max Planck Institute fur Ornithologie, Jan 22 2015 (Germany)
43. Seminario Cardini, Instituto Leloir, Buenos Aires, 25 Noviembre 2015
44. ICN, Montevideo, Uruguay 2016, 30 abril, marzo 3. Abril 3, Listening to the dreams of birds, Invited satellite II meeting, Neuroethology of Southern Cone
45. ICN, satellite auditory processing, song production and motor control, Abril 29th, Montevideo Uruguay.
46. StatPhys Lyon, France, Julio 2016, Invited speaker.
47. Medyfinol, Valdivia, Chile, Nov 2016, Invited talk
48. Colloquium Insrtituto Balseiro, “Escuchando los sueños de un ave” Feb 2017.
49. StatPhys, Buenos Aires, Argentina, closing outreach talk, “Listening to the dreams... and nightmares of birds”, 2019.
50. Giambiaggi school of physics, Physics Department, UBA (Nov 9th 2020) Virtual
51. Physics Colloquium Yasheva University, NT (Oct 27th 2020) Virtual
52. Sof math group, Physics Department, Harvard, (dec 11th 2020) Virtual

Organización de Conferencias y escuelas seleccionadas:

1. Argentine-French school of Nonlinear dynamics and lasers (I) 1996. Courses by J. Tredicce and P. Couillet
2. Argentine-French school of Nonlinear dynamics and lasers (II) 1998. Courses by J. Tredicce and S. Balle
3. Minisymposium "Observation, analysis and modeling of excitable systems", in the SIAM conference on Applications of Dynamical systems, Utah (1999)
4. Third Giambiaggi school of Physics, Physics Department, University of Buenos Aires (Physics and Biology). Courses by A. Winfree, H. Abarbanel, R. Do Santos and W. Kristan, Julio 2001.

5. 8vo TALLER ARGENTINO DE NEUROCIENCIAS
5 AL 9 DE ABRIL DE 2006, simposio (F. Goller, D. Margoliash)
6. PNLD, (Trieste, 2007) Internacional comité.
7. Dynamics Days (2008), Internacional advisory comité.
8. SAN-TAN (soeciedad argetnina de neuro ciencias- taller argentine de neurociencias),
primera reunion conjunta 2009, comite organizador.
9. Dynamics days asia, international advisory committee (2014)
10. School on Physics Applications in Biology (Enero 2016, San Pablo, Brazil, ICTP-
SAIFR)
11. Preparatory school for Statphys 2019 (ICTP, SAIFR, San Pablo, Brazil)

Comentarios sobre mi trabajo de investigación en la prensa especializada internacional:

- **Nature Science Update**, 2 nov 2001, “Canaries change their tune” by P. Ball
- **Physics News update**, 14 Nov 2001, “Singing Like a Canary” by Phil Schewe, James Riordon, and Ben Stein
- **Mathematical American association, Math trek**, Canary Songs, by Ivars Peterson, Noviembre 26, 2001
- **New Scientist**, 10 Nov. 2001
- **New Scientist**, by Muir 8 Enero 2003 (on the work “Diversity within a birdsong”, PRL 89, 288102)
- **Physical Review Focus**, 8 Enero 2003, by JR Minkel, “Deconstructing Birdsong”, on the work “Diversity within a birdsong”)
- **AAS science hour**, broadcasted on Feb 2003
- **On the same work: ABC news, CNN, Reuters, Boston Globe, Clarin, Granma and others.**
- **Nature Science Update**, 2 Jan 2004, songbird duets resonate to beat, by P. Ball
- **PhysicsWeb**, **Canaries sing simple harmonics**, nov 2001, by Katie Pennicott
- **PhysicsWeb**, **Physicists look at birdsong**, February 2006, by Belle Dumé.
- **Songbirds' brains coordinate singing with intricate timing, study shows**, February 27 2013 | UChicago News
- **Songbird Brain Activity Sheds Light On Complex Human Behavior, February**
Describen en pájaros cómo el cerebro controla el canto, 28 Febrero 2013 | Noticias Exactas.
- **Neuroscience: The units of a song**, Nature (2013) doi:10.1038/nature11957 | Nature News and Views
- **Songbirds' brains coordinate singing with intricate timing**, February 27 2013 | Science Codex
- **Songbirds' Brains Coordinate Singing With Intricate Timing**, February 27 2013 | Science Daily
- **Las neuronas de los pájaros se encienden con su propio canto**, 27 de Febrero 2013 | SINC

- 28 2013 | Red Orbit
- **Editor's choice 2013, Nature, The units on Song, by T. Troyer.**
- **F1000 Prime**, on “ Temperature induced syllable breaking unveils interacting timescales in birdsong motor pathway”, by Goldin Alonso Alliende, Goller and Mindlin G. B., **by John Lisman**
- **Physics Today**, “**Birds can recognize a model' s reproduction of their own song**”, by Johanna L. Miller. **Physics Today 66(5) 16 (2013)**
- **F1000Prime on ” Elemental gesture dynamics are encoded by song premotor cortical neurons”**, by Amador et al, **Nature 2013**, written on **Abril 19 2016** by **Leonard Maler**
- **Physics Today**, Specialized vocal organs give some birds their unique songs 5/9/17 by Melisa Baldwin
- **AIP press release** Nonlinear physics bridges thoughts to sounds, by Julia Majors, Septiembre 19, 2017
- **Science update**, “**Birdsong dreams**”
<http://www.scienceupdate.com/2018/08/dream-4/> (abril 2018)
- **The Smithsonian** <https://www.smithsonianmag.com/science-nature/zebra-finches-dream-little-dream-melody-180969925/> (**zebra finches dream a little dream of melody**, by **Katherine Wu**) Agosto 2018
- Artículo synopsis en **Physics, de la APS** by Erika Carlson “ Measuring bird size with birdsong” <https://physics.aps.org/synopsis-for/10.1103/PhysRevLett.124.098101>
- Artículo en **Phys.org** “Researchers estimate size of bird with unusual vocal biomechanics with its song” by Bob Yirka <https://phys.org/news/2020-03-size-bird-unusual-vocal-biomechanics.html>

Enseñanza en la Universidad de Buenos Aires:

(Dos cuatrimestres al año, desde 1993, exceptuando el periodo sabático en UCSD, 2003-2004)

1. Mecánica Cuántica
2. Física Moderna
3. Física I y II para Químicos
4. Física I y II para Biólogos
5. Mecánica clásica (para estudiantes de Física)
6. *Dinámica No lineal*
7. *Sistemas dinámicos e inteligencia artificial aplicada al modelado de datos*

De estos dos cursos, la versión online en el canal de youtube del Departamento de Física de la FCEyN, UBA

Proyectos de Investigación financiados en los últimos años:

1. UBA X099 (2004-2007) director y UBA X208 (2001-2003) director
2. CONICET PIP 2089, director
3. Antorchas (inicio de carrera) (1999-2001)
4. FONCyT pict 03-08133 (2002-2005) Researcher.
5. NIH. The production of complex sounds in birdsong, period 2005-2010, PI Franz Goller, University of Utah. PI subcontract, Gabriel Mindlin, RO1 DC-006876, renewed 2010-2015
6. X145 DINAMICA NO LINEAL APLICADA A LA BIOFISICA 30 de mayo 2008
7. UBACYT Dinamica no lineal aplicada a la biofisica, 2011-2013
8. Bicentennial PICT, ANCyT, 2010-2014
9. Neuromechanics of learned sensorimotor vocal integration, NIH (PI Dan Margoliash), 2013-2017
10. UBACYT 2014-2017 20020130100094BA, Biofisica de la produccion vocal. (UBA)
11. PICT 2014 1802-E2 (Mindlin) MINCyT
12. PUE (responsable Cientifico) "Bio-prostética integrada" 2017-
13. PICT-2018-00619 denominado "La biomecánica de la producción aviar como una ventana al estudio de los sueños." (MINCyT) 2018-2021 (director)
14. PICT-Max Planck 2018 80-APN-DANPCYT#ANPCYT "Multidisciplinary approach to study motor control in songbirds" (MINCyT, Max Planck) 2018-2021 (director)
15. PIP 2022-2024 Sincronizacion neuronal y dinamica de baja dimension durante un comportamiento completo KE3- 11220210100475CO (grupo responsable)
16. PICT 2021 IA0965 (2022-2026) Dinamica neuronal de baja dimension durante la generacion de un comportamiento biofisico complejo" (MINCYT) 2022-2025 (grupo responsable)