JULIA MARCHETTI

PERSONAL DATA

Name:	**Julia Marchetti**
ID:	D.N.I. 36777798
Date and place of Birth:	March 13, 1992 - La Plata, Buenos Aires.
Nationality:	Argentina
Marital Status:	Single
Address:	Diag. 682. Nro 16. La Plata
e-mail:	**julimarchetti@gmail.com**|jmarchetti@biol.unlp.edu.ar

PROFESSIONAL SPECIALTIES

Computational Biologist with university training in Biotechnology. Research on models of evolution of proteins using computational methods

Experience in the development and application of software for the management, analysis and visualization of data types, especially biological types. Advanced user of applications and databases for protein sequence analysis, prediction and characterization of molecular models, phylogenetic inference, etc.

Knowledge of different programming and scripting languages such as R, Python and UNIX shell. Ability to analyze and visualyze large volumes of data.

EDUCATION

(08/2017-). **Specialization in University Teaching.** UNLP*[1]

(04/2015-) **PhD in Science and Technology.** UNQ*[2], Buenos Aires, Argentina. Thesis: Development of bioinformatic tools based on evolutionary and structural methods for the study of proteins. Advisor: Dr. Gustavo Parisi; UNQ. Co-Advisor: Dra. María Silvina Fornasari

(03/2010-04/2015) **Licenciate in Biotechnology and Molecular Biology**. National University of La Plata. Facultad de Ciencias Exactas. Five years completed Plan 2001. Grade point average: 8,88. Thesis: Prediction of mutations related to diseases and polymorphic mutations using evolutionary methods. Advisor: Dr. Gustavo Parisi. Qualification: Sobresaliente (10/10).

(for international equivalence see http://en.wikipedia.org/wiki/Licentiate#Argentina).

(03/2004-12/2009).**Bachiller.** Colegio Nacional "Rafael Hernández" UNLP. Plan: 1977-2006. Grade point average: 9.57.

RESEARCH

(2019-2020) **Visiting Researcher Student as part of Marie Curie Rise 2020 "REFRACT".** Microbiology's platypus (PI: Damien Devos). Universidad Pablo de Olavide. Sevillle. Spain

(08/2018–11/2018) **Visiting Researcher Student**. PI Laboratory: Peter Tompa, VIB-VUB Center for Structural Biology, Brussels, Belgium.

(04/2015–) **PhD Student**. SBG*[3]. Department of Science and Technology, UNQ. Project: Development of bioinformatic tools based on evolutionary and structural methods for the study of protein. Advisor: Dr. Gustavo Parisi. Co-Advisor: Dra. María Silvina Fornasari. Funding: Beca Doctoral interna de CONICET.

(2009) **Undergraduate internship: Training in scientific research.** Instituto de Investigaciones Bioquímicas de La Plata (INIBIOLP-CONICET). Project: Protein characterization of spider eggs. Advisor: Lic. Aldana Laino. Co-Advisor: Dr. Fernando García. Institution: Facultad de Ciencias Médicas. (UNLP).

(2009) **Undergraduate internship: Training in scientific research.** Cátedra de Citología, Histología y Embriología "A". Facultad de Ciencias Médicas (UNLP). Project: Immunohistochemistry applied to cell proliferation. Advisor: Dra. Marcela García. Institution: Facultad de Ciencias Médicas. (UNLP).

Additional Funding

(2020-) **Student Research group member: Proyecto de Investigación Orientado por la Práctica Profesional**. UNQ 2020. Title: Short linear motivs study in protein-protein interactions for the development of therapeutic solutions.

(2019–) **Research group member**. Program *. H2020-Marie Curie Rise. MSCA-RIse. "Refract".* Amount: €2226400.00 (2019-2022). Referencia: H2020-EU.1.3.3. *Project* ID 823886.

(2018–) **Research group member**. Program *Marie Skłodowska-Curie Research and Innovation Staff Exchange*: IDPfun - *Driving the functional characterization of intrinsically disordered proteins.* Amount: €1.291.500 (2018-2022). Reference: H2020-EU.1.3.3. *Project* ID 778247.

(2015–2019) **Research group member**. Programa Prioritario de Investigación UNQ: Simulation of molecular processes of physicochemical and biological relevance.Annual financed amount: ARS$320.000 (2015–2019). Reference: 53/3003 (2007–2015), 1402/15 (2015–2019).

(2012) **Scholarship for Degree Studies.** Fundación YPF. Granted by merit.

(2011) **Scholarship for Degree Studies.** Fundación YPF. Granted by merit.

Award and Honors

(2015 – 2020). **PhD fellowship** from National Council for Scientific and Technical Research (CONICET), Argentina.

(2010) **Prize: Profesor Emérito Dr. Bernardo E. Manzino, otorgado al mejor promedio del Colegio Nacional "Rafael Hernández" (UNLP).** Dr. Bernardo E. Manzino Foundation. (U$S2000).

Academic teaching activities

(09/2019-). **Teacher.** Liceo Víctor Mercante, UNLP. School Lecture: 2nd year Chemistry. Lecture Hours: 2 HC/week.

(09/2019-). **Teacher.** Bachillerato de Bellas Artes, UNLP. School Lecture: 5th year Chemistry. Lecture Hours: 4 HC/week.

(03/2019-). **Teacher.** Colegio Nacional "Rafael Hernández" , UNLP. School Lecture: 5th year Chemistry. Lecture Hours: 6 HC/week.

(03/2019-06/2019). **Teacher.** Colegio Nacional "Rafael Hernández" , UNLP. School Lecture: 1st year Life Science. Lecture Hours: 6 HC/week.

(03/2018-12/2018). **Teacher.** Bachillerato de Bellas Artes, UNLP. School Lecture: 4th year Chemistry. Lecture Hours: 4 HC/week.

(02/2016-) **Teaching Assistant.** Facultad de Cs. Exactas, UNLP. Undergraduate course: Biología. Lecture Hours: 9 hours/week.

(02/2018-03/2018) **Teaching Assistant.** Facultad de Cs. Exactas, UNLP. Undergraduate course: Curso de Ingreso de la Facultad de Cs. Exactas, UNLP. Lecture Hours: 20 hours/week.

(06/2017-07/2017) **Teaching Assistant.** Facultad de Cs. Exactas, UNLP. Undergraduate course: Curso de Ingreso de la Facultad de Cs. Exactas, UNLP. Lecture Hours: 20 hours/week.

(08/2016-10/2016).**Teacher.** Colegio Nacional "Rafael Hernández" , UNLP. School Lecture: 4th year Chemistry. Lecture Hours: 4 HC/week.

(07/2015-12/2015) **Teaching Assistant.** Facultad de Cs. Exactas, UNLP. Undergraduate course: Introducción a la Química/Química general. Lecture Hours: 9 hours/week.

(02/2015-03/2015) **Teaching Assistant.** Facultad de Cs. Exactas, UNLP. Undergraduate course: Curso de Ingreso de la Facultad de Cs. Exactas, UNLP. Lecture Hours: 20 hours/week.

(02/2014-03/2014) **Teaching Assistant.** Facultad de Cs. Exactas, UNLP. Undergraduate course: Curso de Ingreso de la Facultad de Cs. Exactas, UNLP. Lecture Hours: 20 hours/week.

University Extension

(2017-) **Bioinformatics goes to School.** Department of Science and Technology, UNQ. Advisor: Dra.Gustavo Parisi. Hours: 4 hours/week.

(2011-2015) **Activities for the teaching and learning of Chemistry. An integration link between the school level and the university level.** Facultad de Cs. Exactas, UNLP. Advisor: Dra. Laura Villata. Hours: 4 hours/week.

Management Positions in Organizations and Scientific Meetings

(2017) **Organising Committee Member.** *"Las primeras jornadas sobre Enseñanza y Aprendizaje en el nivel superior en Ciencias Exactas y Naturales".* Facultad de Cs. Exactas. UNLP

Institutional Management Charges

(2014-2015) **Student Councillor.** Student Councillor Biological Science Department. Facultad de Cs. Exactas. UNLP

Publications

Tamas Lazar, Elizabeth Martínez-Pérez, Federica Quaglia, András Hatos, Lucia B. Chemes, Javier A. Iserte, Nicolás A. Méndez, Nicolás A. Garrone, Tadeo E. Saldaño, Julia Marchetti, Ana Julia Velez Rueda, Pau Bernado, Martin Blackledge, Tiago N. Cordeiro, Eric Fagerberg, Julie Forman-Kay, Maria Silvina Fornasari, Toby J. Gibson, Gregory-Neal W. Gomes, Claudiu C. Gradinaru, Teresa Head-Gordon, Malene R. Jensen, Edward Lemke, Sonia Longhi, Cristina Marino-Buslje, Giovanni Minervini, Tanja Mittag, Alexander Miguel Monzon, Rohit Pappu, Gustavo Parisi, Sylvie Ricard-Blum, Kiersten M. Ruff, Edoardo Salladini, Marie Skepö, Dmitri Svergun, Sylvain D. Vallet, Mihaly Varadi, Peter Tompa, Silvio C.E. Tosatto, Damiano Piovesan. **PED in 2021: a major update of the Protein Ensemble Database for intrinsically disordered proteins.** NAR Nucleic Acids Research **(under revision).**

Palopoli N*, Marchetti J^***,** Monzon A, Zea D, Maria Silvina Fornasari, Silvio C.E. Tosatto and Gustavo Parisi. **Intrinsically disordered protein ensembles shape evolutionary rates revealing conformational patterns.** JMB. **(under revision).**
*ambos autores contribuyeron de igual manera en la producción y elaboración del trabajo. doi: https://doi.org/10.1101/2020.07.29.227363

Marchetti J^*, Fornasari MS, Monzon A, Tosatto S, Parisi G. **Ensembles from ordered and disordered proteins reveal similar structural constraints during evolution**.Journal of Molecular Evolution. DOI: 10.1016/j.jmb.2019.01.031

Velez Rueda AJ*, Benítez GI, Marchetti J, Hasenahuer MA, Fornasari MS, Palopoli N, Parisi G. **Bioinformatics calls the school: use of smartphones to introduce Python for Bioinformatics in High Schools**. PLoS Comput Biol. DOI: https://doi.org/10.1371/journal.pcbi.1006473

Presentations of Works and Oral Exhibitions in Scientific Meetings

(2020) Marchetti J^, Palopoli, N; Monzon, A; Zea, D; Tosato, S; Fornasari MS, Parisi G. **Conformational ensembles shape evolutionary rate heterogeneity in intrinsically disordered proteins.** Póster. 1st Congress of Women in Bioinformatics and Data Science Latin America ; Buenos Aires.

(2020) Marchetti J^, Palopoli, N; Monzon, A; Zea, D; Tosato, S; Fornasari MS, Parisi G. **Ensambles de proteínas intrínsecamente desordenadas modulan velocidades de evolución, dando lugar a patrones conformacionales específicos.** Poster. V SAJIB; Buenos Aires.

(2018) Marchetti J^, Monzon A, Fornasari MS, Parisi G. **Ensembles from ordered and disordered proteins reveal similar structural constraints** Oral presentaton. 4th NPG-Net. Druskininkai, Lituania.

(2018) Marchetti J^, Monzon A, Fornasari MS, Parisi G. **Ensembles from ordered and disordered proteins reveal similar structural constraints** poster and flash talk. III SAJIB*[4]; Buenos Aires.

(2017) Marchetti J^, Monzon A, Fornasari MS, Parisi G. **Ensembles from ordered and disordered proteins reveal similar structural constraints** poster and flash talk. VIII CAB2C*[5]; Posadas & II SAJIB; Buenos Aires.

(2017) Vélez Rueda AJ^, Benítez GI, Marchetti J, Palopoli N, Fornasari MS, Parisi G. **Bioinformatics goes to school: A way to rethink the teaching of biology.** Poster. VIII CAB2C; Posadas & II SAJIB; Buenos Aires.

(2017) Marchetti J^, Monzon A, Fornasari MS, Parisi G. **Assessing structural constraints in intrinsically disordered proteins using evolutionary methods.** poster. III *Symposium on Non-Globular Proteins* (NGP-Net); Košice, Eslovaquia.

(2016) Marchetti J^, Fornasari MS, Parisi G. **Analyses of present proteins with reduce number of amino acids support the origin of first proteins from random sequences.** Poster. *2016 ISCB Latin America Conference* & "2nd Latin American Student Symposium" ISCB*.* Puerto Madero, Buenos Aires. Póster y Oral: *2do Simposio Argentino de Jóvenes Investigadores en Bioinformática.* Facultad de Ciencias Exactas y Naturales. Universidad Nacional de Buenos Aires (UBA)

(2016) Pardo MF^, Cimino C, Marchetti J, Biedma M, Salvador R, Ves Losada A,. **"Concepciones alternativas sobre "grandes ideas" en Biología en estudiantes universitarios del Ciclo Básico Común de la Facultad de Ciencias Exactas"** Poster. XII National Days and VII International Congress of Teaching of Biology III International Congress of Teaching of Sciences. Organized by: "Asociación de Docentes de Ciencias Biológicas de la Argentina" (Association of Teachers of Biological Sciences of Argentina) (ABDIA).Ciudad Autónoma de Buenos Aires, Argentina.

(2016) Marchetti J^, Fornasari MS, Parisi G. **Analyses of present proteins with reduce number of amino acids support the origin of first proteins from random sequences.** poster. *2016 ISCB Latin America Conference* & "2nd Latin American Student Symposium" ISCB*.* Puerto Madero, Buenos Aires. poster and flash talk: *2do Simposio Argentino de Jóvenes Investigadores en Bioinformática.* Facultad de Ciencias Exactas y Naturales. Universidad Nacional de Buenos Aires (UBA)

(2015) Marchetti J^, Benítez G, Fornasari MS, Parisi G. **Analyses of present proteins with reduce number of amino acids support the origin of first proteins from random sequences.** Poster. VI CAB2C. Bahía Blanca.

(2015) Marchetti J^, Fornasari MS, Parisi G. **Utilización de herramientas y métodos bioinformáticos para el estudio del origen y evolución de las proteínas.** poster. *VI One Day Conference of young researchers and young extensionists.* Facultad de Ciencias Naturales y Museo- Facultad de Ciencias Exactas. UNLP.

Languages

Spanish. Level: native.

English. Level: full professional proficiency. Title: *First Certificate Examination*; University of Cambridge ESOL. Grade: B.

Stays and Attends to Scientific Meetings

(2020) **Workshop.** "*Machine Learning Classification techniques"* .V SAJIB; Buenos Aires.

(2020) **Workshop.** "*Machine Learning Using Tidymodels"*.1st Congress of Women in Bioinformatics and Data Science Latin America.

(2019) **One Day Conference.** "*4to Simposio Argentino de Jóvenes Investigadores en Bioinformática"*. Universidad Nacional de Quilmes. Attendant

(2018) **One Day Conference.** "*Structural Dynamics in Cellular Communication (2nd edition)"* Brussels. Belgium

(2017) **One Day Conference.** *"2nd Symposium on teaching practices in higher education"*. UNLP. Attendant.

(2017) **Congress.** *"XXIII Argentine Congress of Computer Science CACIC"*. Facultad de Ciencias Informáticas. UNLP. Attendant

(2017) **One Day Conference.** *"2nd Protein Biophysics at the End of the World"*. Facultad de Ciencias Exactas y Naturales UBA. Attendant

(2016) ***Workshop***. *Data Visualisation Methods and Tools - A Practical Guide*; II ISCB-LA-SCS, Buenos Aires. Sin calificación. Lecture Hours: 8 hours.

(2015) **Jornada.** *"IV Educational Teaching and Research Seminars in the field of Exact and Natural Sciences"*. Facultad de Humanidades y Ciencias de Educación. UNLP. Attendant.

(2015) ***Workshop***. *A day with (the) Julia Language*; VI CAB2C, Bahía Blanca, Buenos Aires. Sin calificación. Lecture Hours: 4 hours.

(2014) **Meeting.** *"1st meeting of students of bioinformatics and computational biology"*. Fundación Instituto Leloir. Argentina. Attendant.

(2014) **One Day Conference. "***Jornada sobre Políticas de Ingreso, Permanencia y Egreso"*. Facultad de Ciencias Exactas. UNLP. Attendant.

(2014) **Conference.**"*The mystery of stem cells: latest applications in health"* by Dr. Ricardo Dewey. Facultad de Ciencias Exactas. UNLP. Attendant.

(2013) **Conference.**"*Double life bacteria spied from the modern tools of the omics"* by Dr. Antonio Lagares. Facultad de Ciencias Exactas. UNLP. Attendant.

(2013) **Conference.**"*Applied Biotechnology: Cloning and Transgenesis"* by Dr. Adrián Mutto. Facultad de Ciencias Exactas. UNLP. Attendant.

(2013) **Congress.** *"First National Congress of Exact Sciences Students (CoNECEx): For a transformative science".* Facultad de Ciencias Exactas. UNLP. Attendant

(2011) **Congress.** *"First Regional Congress of Students of Exact Sciences (CRECEX)".* Facultad de Ciencias Exactas. UNLP. Attendant

POSTGRADUATE COURSES AND SPECIAL TRAINING

(2017) **Postgraduate Course**. *Elements of scientific and technological production*; DCyT*[6], UNQ. Grade: 9. Lecture Hours: 40 hours.

(2016) **Postgraduate Course**. *Science Technology and Society*; DCyT, UNQ. Grade: 9. Lecture Hours: 40 hours.

(2016) **Postgraduate Course**. *Molecular modeling of systems of biological interest: fundamentals and applications*; DCyT, UNQ. Grade: 10. Lecture Hours: 40 hours.

(2016) **Postgraduate Course**. *Introduction to evolutionary biology*; DCyT, UNQ. Grade: 10. Lecture Hours: 40 hours.

(2016) **Postgraduate Course**. *Bioethics*; DCyT, UNQ. Grade: 10. Lecture Hours: 40 hours.

(2015) **Postgraduate Course**. *3rd Quilmes School for Advanced Bioinformatics: Computational Methods for Protein Function Prediction*; DCyT, UNQ. Sin calificación. Lecture Hours: 40 hours.

(2013) **Teacher Training Course.** *Teacher Training Workshop. Level I.* Organized by Espacio Pedagógico. Facultad de Ciencias Exactas. UNLP. Without evaluation. Lecture Hours: 12 hours.

(2013) **Teacher Training Course.** *Teacher Training Workshops for the 2014 entry course.* Organized by Espacio Pedagógico. Facultad de Ciencias Exactas. UNLP. Without evaluation. Lecture Hours: 12 hours.

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1. UNLP: Universidad Nacional de La Plata / National University of La Plata
2. UNQ: Universidad Nacional de Quilmes / National University of Quilmes
3. SBG: Structural Bioinformatics Group http://ufq.unq.edu.ar/sbg

4. SAJIB: Simposio Argentino de Jóvenes Investigadores de Bioinformática/Argentinian Symposium of Young Bioinformatics Researchers
5. CAB2C: Congreso Argentino de Bioinformática y Biología Computacional/ Argentinian Conference on Bioinformatics and Computational Biology
6. DCyT: Doctorado en Ciencia y Tecnología / Doctorate in Science and Technology