

# Personal Resume

## PERSONAL INFORMATION Lorand-Gabriel Parajdi



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## PROFESSIONAL BACKGROUND

- Aug. 2021 - present    Postdoctoral Research Associate at:  
▶ West Virginia University, Eberly College of Arts and Sciences, Morgantown, USA  
▪ Teaching Courses: Math 124 – Algebra with Applications; Math 261 - Elementary Differential Equations; Math 322 - Introduction to Programming and Computational Mathematics; Math 522-Numerical Solution of PDE's
- Oct. 2020 - present    Assistant Professor at:  
▶ "Babeş-Bolyai" University, Faculty of Mathematics and Computer Science, Cluj–Napoca  
▪ Teaching Laboratory Classes: Dynamical Systems, Differential Equations (in Romanian and English language); Numerical Analysis (in English language); Probability and Statistics (in English language)
- Oct. 2019 – Oct. 2020    Associate Assistant Professor at:  
▶ "Babeş-Bolyai" University, Faculty of Mathematics and Computer Science, Cluj–Napoca  
▪ Teaching Seminars: Mathematical Analysis, Differential Equations (in Romanian language); Dynamical Systems, Partial Differential Equations (in Romanian and English language).  
▪ Teaching Laboratory Classes: Public Key Cryptography (in English language); Dynamical Systems, Differential Equations (in Romanian and English language).
- Oct. 2018 – Oct. 2020    Associate Assistant Professor / Associate Teaching Assistant at:  
▶ Technical University of Cluj–Napoca, Faculty of Automation and Computer Science  
▪ Teaching Laboratory Classes: Numerical Analysis / Numerical Calculus (in Romanian and English language).
- Oct. 2011 – Jun. 2021    Network System Engineer at "Babeş-Bolyai" University, Faculty of Mathematics and Computer Science, Cluj–Napoca  
▪ Managing and monitoring all installed systems and network infrastructure of the Department of Mathematics and Computer Science.
- Oct. 2020 – Jun. 2021    Tutor at:  
▶ Romanian Secondary Education Project (ROSE): Stop Abandoning Math and Computer Science! Yes to your future! (STAY!) 2  
▪ Weekly attending group meetings and individual meetings with students from the target group of the project (students from the first year, who have some difficulties understanding maths) in order to discuss and solve some mathematical problems from Basic Mathematics and Linear Algebra.
- Sept. 2017 – Sept. 2021    Volunteer at:  
▶ Erasmus + project Math & Languages (M&L) organized by "Emil Racoviță" National College in collaboration with the Faculty of Mathematics and Computer Science, "Babeş-Bolyai" University.  
▪ Attend weekly Maths and Languages workshops involving volunteer high school children, mathematics and languages teachers and math researchers in order to solve and discuss research problems proposed by Math.en.Jeans association from France.  
▪ Participations at International congress organized by Math.en.Jeans association.

Research fields: Ordinary Differential Equations, Mathematical Modelling in Medicine and Biology, Chemical Reaction Networks, Partial Differential Equations, Nonlinear Dynamics.

## STUDIES AND ACADEMIC DEGREES

University Education:	2022 – 2023	<p>Postdoctoral Fellowship in Mathematics at: <a href="#">Doctoral School of Mathematics and Computer Science, “Babeş-Bolyai” University, Cluj-Napoca, Romania</a></p> <p>► Member of the project: POCU 153310 / Development of Advanced and Applied Research Competencies in STEM + HEALTH Logic. The title of the proposed project is: “Optimal Control Problems in Cell Dynamics with Applications in Hematology”, mentor: Prof. Ph.D. Radu Precup Corresponding Member of the Romanian Academy and MD. Ph.D. Ciprian Ionuț Tomuleasa</p>
	2015 – 2019	<p>Ph.D. in Mathematics at: <a href="#">Doctoral School of Mathematics and Computer Science, “Babeş-Bolyai” University, Cluj-Napoca, Romania</a></p> <p>► Title of the thesis: “Analysis of Some Mathematical Models of Cell Dynamics in Hematology” supervised by Prof. Ph.D. Radu Precup. This thesis was ranked in the top three best doctoral theses of the 2019 Reinhart-Heinrich Award offered by the European Society for Mathematical and Theoretical Biology.</p>
	2013 – 2015	<p>Master Degree in Applied Mathematics at: <a href="#">Faculty of Mathematics and Computer Science, “Babeş-Bolyai” University, Cluj-Napoca, Romania</a></p> <p>► Title of the dissertation: “Mathematical Models Applied in Medicine” supervised by Assoc. Prof. Ph.D. Marcel-Adrian Șerban</p>
	2010 – 2013	<p>Bachelor Degree in Pure Mathematics at: <a href="#">Faculty of Mathematics and Computer Science, “Babeş-Bolyai” University, Cluj-Napoca, Romania</a></p> <p>► Title of the diploma thesis: “Dynamical Systems with Applications in Maple” supervised by Lect. Prof. Ph.D. Marcel-Adrian Șerban</p>
High School:	2006 – 2010	<p>High School, “Petru Maior”, Theoretical High School, Gherla, Cluj County.</p> <p>► Class of Mathematics and Computer Science</p>

## PERSONAL SKILLS

- Computer skills:**
- High level of knowledge in Operating Systems: **Windows** and **Linux**
  - High level of programming skills in **Matlab, Octave, Mathematica, Maple** and **SageMath**
  - High level of knowledge in **LaTeX** programming language for text editor
  - High level of knowledge in Web Programming: **HTML, CSS, PHP, JavaScript** and **WEB design**
  - Medium programming skills in **C/C++, C#** and **Python**
  - Medium level of knowledge in **Adobe Photoshop**

**Native language** Romanian

Other languages	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C1	C1	C1	C1	C1
German	A2	A1	A1	A1	A1

- Key skills**
- Determined
  - Organized
  - Goal-oriented
  - Creative
  - Cooperative
  - Ambitious
  - Good analytical skills
  - Hardworking
  - Conscientiousness
  - Broad-minded
  - Reliable
  - Team spirit

## OTHER ACTIVITIES

### PUBLICATIONS: Articles in Journals

1. L.G. Parajdi, R. Precup and I.Ș. Haplea, *Method of lower and upper solutions for control problems and application to a model of bone marrow transplantation*, **International Journal of Applied Mathematics and Computer Science AMCS**, (2023), 33(3), 409-418.
2. L.G. Parajdi, F. Pătrulescu, R. Precup and I.Ș. Haplea, *Two numerical methods for solving a nonlinear system of integral equations of mixed Volterra-Fredholm type arising from a control problem related to leukemia*, **Journal of Applied Analysis & Computation JAAC**, (2023), 13(4), 1797-1812.
3. I.Ș. Haplea, L.G. Parajdi and R. Precup, *On the controllability of a system modeling cell dynamics related to leukemia*, **MDPI Symmetry**, (2021), 13(10), 1867.
4. L.G. Parajdi, R. Precup, M.-A. Șerban and I.Ș. Haplea, *Analysis of the effectiveness of the treatment of solid tumors in two cases of drug administration*. **AIMS Mathematical Biosciences and Engineering**, (2021), 18(2), 1845-1863.
5. L.G. Parajdi, R. Precup, E.A. Bonci and C. Tomuleasa, *A mathematical model of the transition from the normal hematopoiesis to the chronic and accelerated acute stages in myeloid leukemia*, **MDPI Mathematics**, (2020), 8(3), 376.
6. L.G. Parajdi, R. Precup, D. Dima, V. Moisoiu and C. Tomuleasa, *Theoretical basis of optimal therapy for individual patients in chronic myeloid leukemia: A mathematical approach*, **Journal of Interdisciplinary Mathematics** (2020), 23(3), 669-690.
7. L.G. Parajdi, *Stability of the equilibria of a dynamic system modeling stem cell transplantation*, **Springer Ricerche di Matematica**, (2020), 69, 579-601.
8. V. Moisoiu, P. Teodorescu, L. Parajdi, S. Pasca, M. Zdrengea, D. Dima, R. Precup, C. Tomuleasa and S. Soverini, *Assessment of measurable residual disease in chronic myeloid leukemia. BCR-ABL1 IS in the avant-garde of molecular hematology*, **Frontiers in Oncology** (2019) 9:863.
9. R. Precup, D. Dima, C. Tomuleasa, M.A. Șerban and L.G. Parajdi, *Theoretical models of hematopoietic cell dynamics related to bone marrow transplantation*, **In Frontiers in Stem Cell and Regenerative Medicine Research**, Bentham Science Publishers-Sharjah, (2018), 8, 202-241.
10. L.G. Parajdi and R. Precup, *Analysis of a planar differential system arising from hematology*, **Studia Universitatis Babeș-Bolyai Mathematica** (2018), 63(2), 235-244.
11. L. Parajdi, *Modeling the treatment of tumor cells in a solid tumor*, **Journal of Nonlinear Sciences and Applications JNSA**, (2014), 7(3), 188-195.

### Books

1. L.G. Parajdi, *Analysis of Some Mathematical Models of Cell Dynamics in Hematology*, **Casa Cărții de Știință**, Cluj-Napoca, 2021.

### Submitted / In Preparation Articles

1. L.G. Parajdi, R. Precup and C. Tomuleasa, *A planning algorithm for optimizing corrective therapies following allogeneic stem cell transplantation in CML and AML*, **in preparation**.
2. C. Pantea, G. Voitiuk, L.G. Parajdi and Y. Polly, *DSR Cycles and Multistationarity in Biochemical Reaction Networks*, **in preparation**.
3. L.G. Parajdi and C. Pantea, *On the existence and absence of Hopf bifurcation in some chemical reaction networks derived from distributive phosphorylation and dephosphorylation network*, **in preparation**.

### CONFERENCES: Communications at Scientific Conferences (selected)

- 40<sup>th</sup> Southeastern-Atlantic Regional Conference on Differential Equations (SEARCDE) – (Contributed talk), North Carolina State University, Raleigh NC, USA, November 12-13, 2022.
- Workshop for Young Researchers in Mathematics 11<sup>th</sup> edition (WYRM) – Virtual Conference, Bucharest, Romania, May 19-20, 2022.
- 13<sup>th</sup> International Conference Dynamical Systems Applied to Biology and Natural Sciences (DSABNS) – Virtual Conference (Contributed talk), Bilbao, Spain, February 8-11, 2022.
- Conference of Doctoral Schools from the Universitaria Consortium, 3<sup>rd</sup> edition, (CSDCU-MIF), Virtual Conference (Invited speaker), Organized by the “Alexandru Ioan Cuza” University, Iași, Romania, October 22-24, 2020.

- 10<sup>th</sup> International Conference Dynamical Systems Applied to Biology and Natural Sciences (DSABNS) Napoli, Italy, February 3-6, 2019.
- 11<sup>th</sup> European Conference on Mathematical and Theoretical Biology (ECMTB), Lisbon, Portugal, July 23-27, 2018.
- 6<sup>th</sup> International Conference on Mathematics and Informatics, Târgu Mureş, Romania, September 7-9, 2017.
- Workshop “Geometry and PDE’s”, West University of Timișoara, Romania, June 13-14, 2017.
- Workshop for Young Researchers in Mathematics 7<sup>th</sup> edition (WYRM), Bucharest, Romania, May 17-20, 2017.
- The 15<sup>th</sup> International Conference on Applied Mathematics and Computer Science (Theodor Anghelută Seminar), Cluj-Napoca, Romania, July 5-7, 2016.
- International Conference on Nonlinear Operators, Differential Equations and Applications (ICNODEA), Cluj-Napoca, Romania, July 14-17, 2015.

#### Communications at Research Seminars

- Math Biology Seminar at Virginia Tech, Virginia Polytechnic Institute and State University, Blacksburg VA, USA, March 22, 2023, with the title: “*Mathematical Modeling and Control of Chronic Myeloid Leukemia: Advancing Strategies for Disease Understanding and Treatment Optimization.*”
- Seminar of the Research Group in Nonlinear Operators and Differential Equations, “Babeş-Bolyai” University, Cluj-Napoca, Romania, June 9, 2022, with the title: “*Two numerical methods for solving a nonlinear system of integral equations of mixed Volterra-Fredholm type arising from a control problem related to leukemia.*”
- Applied Mathematics Seminar, West Virginia University, Morgantown WV, USA, October 6, 2021, with the title: “*On the controllability of some systems modeling cell dynamics related to leukemia.*”
- Seminar of the Research Group in Nonlinear Operators and Differential Equations, “Babeş-Bolyai” University, Cluj-Napoca, Romania, February 25, 2021, with the title: “*Analysis of the effectiveness of the treatment of solid tumors in two cases of drug administration.*”
- Seminar of the Research Group in Nonlinear Operators and Differential Equations, “Babeş-Bolyai” University, Cluj-Napoca, Romania, May 23, 2019, with the title: “*Analysis of some mathematical models of cell dynamics in hematology.*”
- Seminar of the Research Group in Nonlinear Operators and Differential Equations, “Babeş-Bolyai” University, Cluj-Napoca, Romania, March 14, 2019, with the title: “*Stability of the equilibria of a dynamic system modeling stem cell transplantation.*”
- Seminar of the Research Group in Nonlinear Operators and Differential Equations, “Babeş-Bolyai” University, Cluj-Napoca, Romania, March 1, 2018, with the title: “*Analysis of a planar differential system arising from hematology.*”
- Seminar of the Research Group in Nonlinear Operators and Differential Equations, “Babeş-Bolyai” University, Cluj-Napoca, Romania, November 9, 2017, with the title: “*Optimization problems in chronic leukemia therapy.*”
- Seminar of the Research Group in Nonlinear Operators and Differential Equations, “Babeş-Bolyai” University, Cluj-Napoca, Romania, October 27, 2016, with the title: “*A mathematical model of the transition from the normal hematopoiesis to the chronic and acceleration-accute stages in myeloid leukemia.*”
- Differential Equations Seminar, Bolyai Institute of the University of Szeged, Hungary, September 8, 2016, with the title: “*A mathematical model of the transition from normal hematopoiesis to the chronic and acute stages in myeloid leukemia.*”

#### Participation at Scientific Conferences (selected)

- PDEs in Fluid Mechanics and Atmospheric Sciences, Conference, West Virginia University, Morgantown WV, USA, April 13-14, 2024.
- Annual Meeting of the Society for Mathematical Biology (SMB2021), Virtual Conference, June 13-17, 2021.
- 4<sup>th</sup> International Conference on Numerical Analysis and Approximation Theory (NAAT2018), Cluj-Napoca, Romania, September 6-9, 2018.
- Romanian Itinerant Seminar on Mathematical Analysis and its Applications, (RISMAA), Cluj-Napoca, Romania, April 20-21, 2018.

- DAAD Project: Center of Excellence for Applications of Mathematics, Vrnjacka Banja, Serbia, August 28 – September 3, 2012.
- The 10<sup>th</sup> International Conference on Fixed Point Theory and Its Applications, (ICFPTA), Cluj-Napoca, Romania, July 9-15, 2012.

PROJECTS:  
Math & Languages (M&L)

Participations as invited researcher at:

- The Math.en.Jeans International Congress, Marseille, France, March 21-23, 2019.
- The Math.en.Jeans International Congress, Lyon, France, March 22-24, 2018.
- The Math.en.Jeans International Congress, Cluj-Napoca, Romania, April 7-8, 2017.
- The Math.en.Jeans International Congress, Marseille, France, March 23-25, 2017.

Researcher coordinator of publications at Math.en.Jeans web-site:  
<https://www.mathenjeans.fr/publications>

**2020-2021:**

- Title of the paper: "*Volume and density of a tree*". The full paper is available on the Math.en.Jeans website: <https://www.mathenjeans.fr/sites/default/files/comptes-rendus/volumeanddensityofatree.pdf>
- Title of the paper: "*Modeling of Plant Growth*". The full paper is available on the Math.en.Jeans website: <https://www.mathenjeans.fr/sites/default/files/comptes-rendus/modeling-plant-growth-cluj-2021.pdf>

**2019-2020:**

- Title of the paper: "*Tower of Hanoi*". The full paper is available on the Math.en.Jeans website: [https://www.mathenjeans.fr/sites/default/files/comptes-rendus/tower\\_of\\_hanoi\\_article\\_ml\\_completed.pdf](https://www.mathenjeans.fr/sites/default/files/comptes-rendus/tower_of_hanoi_article_ml_completed.pdf)
- Title of the paper: "*The Mathematics of Paper Folding*". The full paper is available on the Math.en.Jeans website: <https://www.mathenjeans.fr/sites/default/files/comptes-rendus/mathematics-paper-folding-cluj-2020.pdf>

**2018-2019:**

- Title of the paper: "*Don't cross the streams*". The full paper is available on the Math.en.Jeans website: [https://www.mathenjeans.fr/sites/default/files/comptes-rendus/do\\_not\\_cross\\_the\\_streams\\_cluj\\_2019.pdf](https://www.mathenjeans.fr/sites/default/files/comptes-rendus/do_not_cross_the_streams_cluj_2019.pdf)
- Title of the paper: "*Locks and letters*". The full paper is available on the Math.en.Jeans website: [https://www.mathenjeans.fr/sites/default/files/comptes-rendus/locks\\_and\\_letters\\_final.pdf](https://www.mathenjeans.fr/sites/default/files/comptes-rendus/locks_and_letters_final.pdf)
- Title of the paper: "*The Burrow of the Marmots*". The full paper is available on the Math.en.Jeans website: [https://www.mathenjeans.fr/sites/default/files/comptes-rendus/the\\_burrow\\_of\\_the\\_marmots.pdf](https://www.mathenjeans.fr/sites/default/files/comptes-rendus/the_burrow_of_the_marmots.pdf)

**2017-2018:**

- Title of the paper: "*Modelling the flight of birds in groups*". The full paper is available on the Math.en.Jeans website: [https://www.mathenjeans.fr/sites/default/files/comptes-rendus/modelling\\_the\\_flight\\_of\\_birds\\_in\\_groups\\_colegiul\\_national\\_emil\\_racovita.pdf](https://www.mathenjeans.fr/sites/default/files/comptes-rendus/modelling_the_flight_of_birds_in_groups_colegiul_national_emil_racovita.pdf)
- Title of the paper: "*The path of ants*". The full paper is available on the Math.en.Jeans website: [https://www.mathenjeans.fr/sites/default/files/comptes-rendus/la\\_route\\_des\\_fourmis\\_colegiul\\_national\\_emil\\_racovita.pdf](https://www.mathenjeans.fr/sites/default/files/comptes-rendus/la_route_des_fourmis_colegiul_national_emil_racovita.pdf)
- Title of the paper: "*The elections*" (in French). The full paper is available on the Math.en.Jeans website: [https://www.mathenjeans.fr/sites/default/files/comptes-rendus/elections-col-racovita-cluj\\_2018.pdf](https://www.mathenjeans.fr/sites/default/files/comptes-rendus/elections-col-racovita-cluj_2018.pdf)