Rafael Antonio Aparicio Cuello.

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ORCID: https://orcid.org/0000-0003-4541-2685

Research Gate:https://www.researchgate.net/profile/Rafael-Aparicio-Cuello-2

Google Scholar:https://scholar.google.com/citations?hl=en&user=kboGL2sAAAAJ

Academia: https://urrp.academia.edu/RafaelAparicio

Research interests: Evolution equations, Integral equations, Operator theory.

INSTITUTION

University of Puerto Rico Río Piedras Campus   **Puerto Rico**
Assistant professor and Subdirector

− Statistical Institute and Computerized Information Systems
College of Business Administration
15 Av Universidad STE 1501, San Juan, PR 00925-2535, USA

WORK EXPERIENCE

University of Puerto Rico Río Piedras Campus   **Puerto Rico**
Assistant professor   08/2016 − Present

− Department: Statistical Institute and Computerized Information Systems,
Faculty: College of Business Administration

Assistant professor   08/2015 − 12/2015

− Department: Mathematics,
Faculty: College of Natural Sciences

Teaching assistant   08/2009 − 05/2012

− Department: Mathematics
Faculty: College of Natural Sciences

University of Puerto Rico at Carolina   **Puerto Rico**
Assistant professor   07/2016 − 08/2016

University of Puerto Rico at Arecibo   **Puerto Rico**
Assistant professor   01/2016 − 06/2016

Instructor (Summer courses)   06/2012 − 06/2015

Instructor   08/2008 − 06/2009

University of Puerto Rico at Utuado   **Puerto Rico**
  Instructor (Summer courses)   06/2011 – 07/2011
  Instructor (Summer courses)   06/2009 – 06/2009

University of Puerto Rico Mayagüez Campus   **Puerto Rico**
  Mathematics communicator   08/2008 – 12/2008
  – AFAMaC Mathematics Group

  Mathematics communicator   06/2008 – 07/2008
  – Mathematics Olympics Puerto Rico

  Mathematics communicator   01/2008 – 05/2008
  – AFAMaC Mathematics Group

  Teaching assistant   08/2005 – 05/2008
  Mathematics communicator   01/2007 – 05/2007
  – AFAMaC Mathematics Group

University of Antioquia   **Colombia**
  Professor at the Mathematics Department   08/2002 – 07/2005
  Instructor student   05/2005 – 07/2005
  Mathematics communicator   08/2002 – 12/2004
  – Semillero de Matemáticas

  Monitor Fellow   01/2002 – 12/2003

Education

University of Puerto Rico Río Piedras Campus   **Puerto Rico**
  Doctor of Philosophy in Mathematics   2015
  – Thesis: "*Well-Posedness of Degenerate Integro-Differential Equations with Infinite Delay
    in Banach Spaces.* "
    Adviser: Valentin Keyantuo and Mahamadi Warma

University of Puerto Rico Mayagüez Campus   **Puerto Rico**
  Master of Science in Mathematics   2008
  – Thesis: "*Traslaciones y Semigrupos C_0 Topologicamente Mezclantes.*"
    Advisers: Héctor Salas

University of Antioquia   **Colombia**
  Bachelor of Mathematics.   2004
  – Thesis: "*Variedades Invariantes.*"
    Adviser: Carlos Marin

Publications

[1] R. Aparicio and V. Keyantuo, "Besov maximal regularity for a class of degenerate integro-differential equations with infinite delay in Banach spaces", *Mathematical Methods in the Applied Sciences*, vol. 43, no. 12, pp. 7239–7268, 2020.

[2] R. Aparicio and V. Keyantuo, "Lp-maximal regularity for a class of degenerate integro-differential equations with infinite delay in Banach spaces.", *Journal of Fourier Analysis and Applications*, vol. 26, no. 34, 2020.

[3] R. Aparicio and V. Keyantuo, "Well-posedness of a class of degenerate integro-differential equations in function spaces.", *Electronic Journal of Differential Equations*, vol. 2018, no. 79, pp. 1–31, 2018.

Submitted

- R. Aparicio, V. Keyantuo and C. Lizama, *"A characterization of uniform well posedness for degenerate second-order abstract differential equations."* (2022).

- R. Aparicio and V. Keyantuo, *"Maximal regularity for degenerate multi-term fractional integro-differential equations and applications."* (2022).

- R. Aparicio and V. Keyantuo, *"Maximal regularity for degenerate fractional integro-differential equations in Lp spaces."* (2021).

In preparation

- R. Aparicio and V. Keyantuo, *"Maximal regularity for fractional integro-differential equations in Besov spaces."* (Preprint, 2022).

- R. Aparicio and V. Keyantuo *"The 2-dimensional wave equation with Dirichlet boundary conditions on Lp-spaces."* (Preprint, 2022).

Awards and Honors

Golden Key International Honour Society		**Puerto Rico**
Chapter of the University of Puerto Rico Río Piedras Campus		2021
Honor Thesis Scholarship		**Puerto Rico**
University of Puerto Rico Río Piedras Campus		2014
Honor enrollment		**Puerto Rico**
University of Puerto Rico Río Piedras Campus		2012
Merit Scholarship		**Puerto Rico**
University of Puerto Rico Río Piedras Campus		2012
Best Mathematics Graduate		**Colombia**
University of Antioquia		2004
Best student of the Mathematics Program		**Colombia**
University of Antioquia		2003

Honor enrollment   **Colombia**
University of Antioquia   2000

Presentations

- **Congreso Internacional de Investigación Científica**   **Dominican Republic**
  - Aparicio, R. Maximal regularity for degenerate multi-term fractional integro-differential equations and applications. Online meeting.   2022
  - Aparicio, R. Lp-Maximal regularity for a class of degenerate fractional integro-differential equations in Banach spaces. Online meeting.   2021
  - Aparicio, R. Lp-Maximal regularity for a class of degenerate integro-differential equations with infinite delay in Banach spaces. Santo Domingo.   2018
- **Encuentro Matemático del Caribe**   **Colombia**
  - Aparicio, R. Maximal regularity for degenerate multi-term fractional integro-differential equations and applications. Online meeting.   2022
  - Aparicio, R. Lp-Maximal regularity for a class of degenerate fractional integro-differential equations in Banach spaces. Online meeting.   2021
  - Aparicio, R. Besov maximal regularity for a class of degenerate integro-differential equations with infinite delay in Banach spaces. Online meeting.   2020
- **Seminario Interuniversitario Investigación en Ciencias Matemáticas**   **Puerto Rico**
  - Aparicio, R. A characterization of uniform well-posedness for degenerate second-order abstract differential equations.   2023
  - Aparicio, R. Degenerate multi-term fractional integro-differential equations and applications. Online meeting.   2022
  - Aparicio, R. Maximal regularity for degenerate multiterm fractional integro-differential equations in Banach spaces. Online meeting.   2021
  - Aparicio, R. Lp-Maximal regularity for a class of degenerate fractional integro-differential equations in Banach spaces. Cayey.   2020
  - Aparicio, R. Besov maximal regularity for a class of degenerate integro-differential equations with infinite delay in Banach spaces. Humacao.   2019
  - Aparicio, R. Lp-Maximal regularity for a class of degenerate integro-differential equations with infinite delay in Banach spaces. San Juan.   2018
  - Aparicio, R. Well-Posedness of Degenerate Integro-Differential Equations with Infinite Delay in Banach Spaces. Humacao.   2016
  - Aparicio, R. Traslaciones y Semigrupos C_0 Topológicamente Mezclantes. Carolina.   2008
- **Universidad del Sinú Elías Bechara Zainúm**   **Colombia**
  - Aparicio, R. Lp-Maximal regularity for a class of degenerate fractional integro-differential equations in Banach spaces. Online meeting.   2020
- **Conferencias Investigaciones Doctorales de la Facultad UPR Arecibo**   **Puerto Rico**

– Aparicio, R. Well-Posedness of Degenerate Integro-Differential Equations with Infinite Delay in Banach Spaces. Arecibo. 2016

Teaching experience

University of Puerto Rico Río Piedras Campus **Puerto Rico**

Graduate Courses

– Functions of a Complex Variable, MATE 6301.

– Complex Analysis II, MATE 8309.

Undergraduate Courses

– Introductory Mathematics I, MATE 3001.

– Preparatory Course for Calculus and Analytic Geometry, MATE 3018.

– Precalculus I, MATE 3023, MATE 3171.

– Precalculus II, MATE 3024.

– Advanced Geometry, MATE 3030.

– Calculus I, MATE 3151.

– Quantitative Methods I, MECU 3001.

– Quantitative Methods for Business Administration I, MECU 3031.

– Quantitative Methods for Business Administration II, MECU 3032.

– Finite Mathematics and Pre Calculus for Business Administration, MECU 3035.

University of Puerto Rico at Carolina **Puerto Rico**

Undergraduate Courses

– Precalculus II, MATE 3172.

– Quantitative Methods for Business Administration I, MECU 3031.

University of Puerto Rico at Arecibo **Puerto Rico**

Undergraduate Courses

– Development of Basic Skills in Mathematics, MATE 0008.

– Introductory Mathematics II, MATE 3002.

– Algebra, MATE 3004.

– Quantitative Methods I,

– Quantitative Methods II, MATE 3012.

– Quantitative Methods III, MATE 3013.

– College Geometry, MATE 3019.

– Mathematics Allied to Health, MATE 3035.

– Numerical Analysis, MATE 3177.

University of Puerto Rico at Utuado   **Puerto Rico**

Undergraduate Courses

- Quantitative Methods III, MATE 3013
- Calculus for Biologists I, MATE 3021.
- Calculus for Biologists II, MATE 3022.
- Calculus for Engineers I, MATE 3031.

University of Puerto Rico Mayagüez Campus   **Puerto Rico**

Undergraduate Courses

- Prebasic, MATE 0066.
- Calculus for Biologists I, MATE 3021.
- Calculus for Biologists II, MATE 3022.
- Calculus for Engineers I, MATE 3031.

University of Antioquia   **Colombia**

Undergraduate Courses

- Algebra and Trigonometry.
- Analytical and Vector Geometry.
- Euclidean Geometry.
- General Mathematics.

Service to the Institution

- **Statistical Institute and Computerized Information Systems**
  - Subdirector of Institute   2021 - Present
  - Curriculum Committee   2019 - Present
  - Advisory Committee   2021 - Present
  - Activities and Professional Development Committee   2019 - Present
- **School of Business**
  - Library Committee   2018 - 2020

Service to the Profession

- **Integrated Science Multipurpose Laboratory**   **Arecibo, Puerto Rico**
  - Scientific Research for Mathematics Fair Workshop   2016
  - Geometric Constructions Workshop   2008
  - The Calculation in Fractals Conference   2008

- **Arecibo Observatory**   **Arecibo, Puerto Rico**
  - From Hectares to Nanometers: GK-12 Multidisciplinary Explorations of Functional
    NanoScience and Tropical Ecosystems   2009
- **Encuentro Regional de Matemáticas**   **Armenia, Colombia**
  - Cursillo: Solución de problemas   2002

Community service

- **Olimpiadas Matemáticas de Puerto Rico, Recursos**
  - Academia Sabatina en Guaynabo. Recurso.   2020
- **The Puerto Rico Interscholastic Math League, Judge**
  - Colegio Puertorriqueño de Niñas   2023
  - Colegio Beato Carlos M. Rodríguez   2018 - 2019
  - Saint Francis School   2015 - 2019, 2022-2023
  - Colegio Católico Notredame   2018
  - Academia San José   2017
  - University Gardens High School   2015 - 2016
  - Colegio Rosa-Bell   2016
- **High School Mathematical Olympiads Puerto Rico, Judge**
  - Puerto Rico Department Of Education   2014 - 2016
  - Puerto Rico Department Of Education   2010
- **Second Brígida Álvarez Rodríguez Mathematical Cup, Judge**   **2015**
- **Elementary School, UPRRP.**
  - Community Workers   2015
- **University of Puerto Rico Río Piedras Campus. Tutor**
  - Descubriendo a PI en la UPR   2015
- **NanoDays 2009, Fractals in nature. Lecturer**
  - Plaza las Americas, San Juan, Puerto Rico.   2015

Professional Development

- **Congreso Internacional de Investigación Científica.**
  Dominican Republic   2018, 2021, 2022

- **Seminario Interuniversitario de Investigación en Ciencias Matemáticas.** Puerto Rico.   2006-2023

- **Encuentro Matemático del Caribe, Universidad Tecnológica de Bolívar.** Cartagena, Colombia   2020-2022

- **Professional Certification on Prevention of Sexual Harassment, Domestic Violence, Employment Discrimination and Gender Equity.** Puerto Rico   2022

- **Strategic communication for Directors and Professors.** Online, Puerto Rico   2021
  Evaluation, To establish objectives, Situation analysis and Action Plan.

- **Entrepreneurial Mindset Workshop**   2021
  Echar Pa'Lante

- **Webinar/Workshop Educational Practice: collaborative learning through emerging technologies.** University of Puerto Rico, Puerto Rico   2021
  Nearpod Application.
  Live Stream: OBS Studio, together with MS Teams and YouTube.
  Padlet.
  PearDeck.
  Canva Application.
  Video editing.
  Microsoft OneDrive, SharePoint and Forms.
  Kahoot and Quizziz application.
  Microsoft OneNote.
  Microsoft Teams and Whiteboard.
  Microsoft Outlook and Task-To do.

- **Webinar/Workshop Educational practices: Collaboration between peers as an educational strategy.** University of Puerto Rico, Puerto Rico   2021

- **Webinar/Workshop Respondus LockDown Browser and Respondus Monitor.**
  University of Puerto Rico, Puerto Rico   2021

- **Webinar/Workshop Migration of courses in Moodle.**
  University of Puerto Rico, Puerto Rico   2020

- **Webinar/Workshop Recording notes in Moodle.**
  University of Puerto Rico, Puerto Rico   2020

- **Webinar Construction of exams using Moodle.**
  University of Puerto Rico, Puerto Rico   2020

- **Webinar Exam design and structure.**
  University of Puerto Rico, Puerto Rico   2020

- **Training Cycle in Effective Written Communication in Spanish.**
  University of Puerto Rico, Puerto Rico   2020

Evaluation of effective written communication: correction of texts and calibration of rubrics.
Do you follow me or do you not follow me? Seven practical principles of effective communication.
10 leaks of orality in non-literary writing and how to combat them.
The Complete Sentence: Applied Linguistics Techniques.
"That was't what they taught me": Five punctuation myths and how to combat them.
Concise, precise and simple: journalism techniques at the service of the academic text.
Make it clear: syntactic ambiguity and how to combat it.

- **Cycle of Workshops for Research Support**
  University of Puerto Rico, Puerto Rico   2019
  How to select the appropriate journal to publish: criteria and tools.
  Preparation, publication and dissemination of articles.
  How to work with editorial platforms.

- **Training cycle in responsible conduct and ethics in research with human beings: Privacy and confidentiality.** University of Puerto Rico, Puerto Rico   2019

- **Training in matters of Law 238.**
  University of Puerto Rico, Puerto Rico   2019

- **Scheduled Online Learning Assessment System (OLAS) for informed decision making related to student learning Group 2 (18-19-1-047).**
  University of Puerto Rico, Puerto Rico   2019

- **Elements of the presentation, structure and format of the contents of a writing in APA style. Centro para la Excelencia Académica.**
  University of Puerto Rico, Puerto Rico   2019

- **Educational resources to strengthen the mastery of mathematical logical reasoning.** University of Puerto Rico, Puerto Rico   2018

- **Online Module Training on Personnel Matter.**
  University of Puerto Rico, Puerto Rico   2018

- **Online Module: Policies regarding the prevention of sexual harassment at the University.**   University of Puerto Rico, Puerto Rico   2018

- **Certificate in Construction of Virtual Learning Environments. Global.**
  University of Puerto Rico, Puerto Rico   2018

- **Certificate in Transdisciplinary Research: Qualitative Research Methodologies in Transdisciplinary Research.** University of Puerto Rico, Puerto Rico   2017

- **Orientation for new professors. Certification 101, Year 2000-2001.**
  University of Puerto Rico, Puerto Rico   2016

- **Writing Workshop Focused on Academic Research Proposals and Creation.**
  University of Puerto Rico Arecibo Campus, Puerto Rico   2016

- **Orientation for new professors. Teaching-learning Part A Certification 032, Year 2000-2001.** University of Puerto Rico, Puerto Rico   2016

- **Modality Preparing the Future Faculty.**
  University of Puerto Rico Rio Piedras Campus, Puerto Rico   2014

- **Training for Teaching Assistant of the Faculty of Natural Sciences.**
  University of Puerto Rico Rio Piedras Campus, Puerto Rico   2009

- **Adiestramiento para Asistente de Cátedra de Nuevo Ingreso.**
  University of Puerto Rico Mayagüez Campus, Puerto Rico   2006

- **XI Encuentro Escuela Regional de Matemáticas. Stochastic integration.**
  Colombia   2005

- **University-Company-State Meeting.**
  Universidad de Antioquia y la Fundación Vínculo, Colombia   2001

- **Leadership and Social Change.**
  Instituto Latinoamericano de Liderazgo, Colombia   2001

LANGUAGES

- **Spanish (Native)**

- **English (Working knowledge)**

REFERENCES

- **Rafael Marrero:** University of Puerto Rico Río Piedras Campus, College of Business Administration, Department of Accounting, 15 Ave Universidad Ste 1501, San Juan, PR 00925-2535, (787) 764-0000 87024, rafael.marrero@upr.edu.

- **Wanda Velázquez:** University of Puerto Rico Río Piedras Campus, College of Business Administration, Department of Accounting, 15 Ave Universidad Ste 1501, San Juan, PR 00925-2535, (787) 764-0000 87066, wanda.velazquez@upr.edu

- **Valentin Keyantuo:** University of Puerto Rico Río Piedras Campus, College of Natural Sciences, Department of Mathematics, 17 Ave Universidad Ste 1701, San Juan, PR 00925-2537, (787) 764-0000 88270, valentin.keyantuo1@upr.edu