Dr. Christian Barrientos

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Education

- **Universitat Politècnica de Catalunya** — Barcelona, España
  Ph. D. Applied Mathematics — 2004
- **University of Puerto Rico** — San Juan, Puerto Rico
  Master of Sciences - Mathematics — 1997
- **Universidad Católica de Valparaíso** — Valparaíso, Chile
  Bachelor - Mathematics — 1990

Academic Experience

University of South Florida — Tampa, Florida, USA
Assistant Professor of Instruction — August 2023 - Present

Valencia College — Orlando, Florida, USA
August 2018 - July 2023

Clayton State University, Department of Mathematics — Morrow, Georgia, USA
August 2006 - May 2017

University of Central Florida, Department of Mathematics — Orlando, Florida, USA
August 2003 - May 2006

Publications

Published Articles

On the number of caterpillars, *Indonesian Journal of Combinatorics*, **6(2)** (2022), 77–96.

Alpha labelings of amalgamated cycles, *Theory and Applications of Graphs,* **9(2)** (2022), Article 11.

Relaxing the injectivity constraint on arithmetic and harmonious labelings, *Electron. J. Graph Theory Appl.*, **10(2)** (2022), 523–539 (with M. Youssef).

On graphs with α and b-edge consecutive edge magic labelings, *Indonesian Journal of Combinatorics*, **6(1)** (2022), 58–65.

On the generation of alpha graphs, *J. Algebra Comb. Discrete Appl.*, **9(2)** (2022), 31–44.

Optimal maximal graphs, *Trans. Comb.*, **11(2)** (2022), 85–97 (with M. Youssef).

Harmonious graphs from α-trees, *Electron. J. Graph Theory Appl.*, **9(2)** (2021), 357–375. (with S. Minion).

Some families of α-labeled subgraphs of the integral grid, *Commun. Comb. Optim.*, **8(1)** (2023), 77-101. (with S. Minion). Published online on 10/11/2021.

Broader families of cordial graphs, *Indonesian Journal of Combinatorics*, **5(1)** (2021), 46–69. (with S. Minion).

Alpha graphs with different pendent paths, *Electron. J. Graph Theory Appl.*, **8(2)** (2020), 301–317.

On additive vertex labelings, *Indonesian Journal of Combinatorics*, **4(1)** (2020), 34–52.

Folding trees gracefully, *AKCE Int. J. Graphs Comb.*, **17(3)** (2020), 796-800 (with S. Minion).

New advances in Kotzig's conjecture, *Fundamental Journal of Mathematics and Applications* **2(2)** (2019), 186–194 (with S. Minion).

Counting and labeling grid-related graphs, *Electron. J. Graph Theory Appl.*, **7(2)** (2019), 349–363. (with S. Minion).

The graceful coalescence of alpha cycles, *Communications in Advanced Mathematical Sciences*, **2(2)** (2019), 114–120. (with S. Minion).

New α-trees and graceful unions of α-graphs and linear forests, *J. Combin. Math. Combin. Comput.*, **108** (2019), 205–220 (with S. Minion).

Series-parallel operations with α-graphs, *Theory and Applications of Graphs*, **6(1)** (2019), Article 4. (with S. Minion).

Special graceful labelings of irregular fences and lobsters, *Universal Journal of Mathematics and Applications*, **2(1)** (2019), 1–10.

Snakes and caterpillars in graceful graphs, *J. Algorithms Comput.*, **50(2)** (2018), 37–47. (with S. Minion).

The number of snakes in a box, *Fundamental Journal of Mathematics and Applications*, **1**(2) (2018), 145–156 (with S. Minion).

On the number of α-labeled graphs, *Discuss. Math. Graph Theory*, **38** (2018), 177–188 (with S. Minion).

On the graceful Cartesian product of α-trees, *Theory and Applications of Graphs*, **4(1)** (2017), Article 3. (with S. Minion).

Snakes: from graceful to harmonious, *Bull. Inst. Combin. Appl.*, **79** (2017), 95–107. (with S. Minion).

Improved bounds for relaxed graceful trees, *Graphs and Combin.*, **33(2)** (2017), 287–305. (with E. Krop).

Constructing graceful graphs with caterpillars, *J. Algorithms Comput.*, **48(1)** (2016), 117–125. (with S. Minion).

A new attack on Kotzig's conjecture, *Electron. J. Graph Theory Appl.*, **4(2)** (2016), 119–131. (with S. Minion).

Mean trees, *Bul. Inst. Combin. Appl.*, **75** (2015), 8–18.

Alpha labelings of snake polyominoes and hexagonal chains, *Bul. Inst. Combin. Appl.*, **74** (2015), 73–83. (with S. Minion).

Enumerating families of labeled graphs, *Journal of Integer Sequences*, **18** (2015), Article 15.1.7 (with S. Minion).

The mean labeling of some crowns, *J. Algorithms Comput.*, **45** (2014), 43–54. (with M.E. Abdel-Aal, S. Minion, and D. Williams).

Three graceful operations, *J. Algorithms Comput.*, **45** (2014), 13–24. (with S. Minion).

On graceful supersubdivisions of graphs, *Bul. Inst. Combin. Appl.*, **70** (2014), 77–85. (with S. Barrientos).

Mean graphs, *AKCE J. Graphs Comb.*, **11** (2014), No. 1, 13–26. (with E. Krop).

Operations with mean graphs, *Congr. Numer.*, **217** (2013), 5–19. (with S. Bailey).

Some theorems on the q-analogue of the generalized Stirling numbers and the combinatorics of the 0-1 tableaux. *Bull. Malays. Math. Sci. Soc.* **(2) 34(3)** (2011), 1–15.(withR. Corcino).

Graceful and edge-antimagic labelings. *Ars Combin.*, **96** (2010), 505–513. (with M. Bača).

On graceful chain graphs. *Util. Math.*, **78** (2009), 55–64.

Odd-graceful labelings of trees of diameter 5. *AKCE J. Graphs Comb.*, **6** (2009), 307–313.

Irregular colorings of some graph classes. *Bul. Inst. Combin. Appl.*, **55** (2009), 105–119. (with M. Anderson, R.C. Brigham, J.R. Carrington, R.P. Vitray, and J. Yellen.)

On super edge-antimagic total labelings of mK_n. *Discrete Math.*, **308** (2008), 5032–5037. (with M. Bača).

Invariants of Fibonacci graphs. *J. Combin. Math. Combin. Comput.*, **68** (2008), 273– 285. (with M. Anderson, R.C. Brigham, J.R. Carrington, R.P. Vitray, and J. Yellen).

Maximum demand graphs for eternal security. *J. Combin. Math. Combin. Comput.*, **61** (2007), 111–127. (with M. Anderson, R.C. Brigham, J.R. Carrington, R.P. Vitray, and J. Yellen.)

Graceful arbitrary super-subdivisions of graphs. *Indian J. Pure Appl. Math.*, **38** (2007), 445–450.

Graceful graphs with pendant edges. *Australas. J. Combin.*, **33** (2005), 99–107.

The gracefulness of unions of cycles and complete bipartite graphs. *J. Combin. Math. Combin. Comput.*, **52**(2005), 69–78.

Graceful labeling of chain and corona graphs. *Bul. Inst. Combin. Appl.*, **34** (2002), 17–26.

Equitable labelings of corona graphs. *J. Combin. Math. Combin. Comput.*, **41** (2002), 139–149.

Graceful labelings of cyclic snakes. *Ars Combin.*, **60** (2001), 85–96.

New families of equitable graphs. *Util. Math.*, **60** (2001), 123-1-37.

On 2-equitable labelings of graphs. *Notas Soc. Mat. Chile (N.S.)*, **15** (1996) No. 1, 97–110. (with H. Hevia).

Equitable labelings of forest. *Combinatorics and Graph Theory '95* (ed. Y. Alavi). World Scientific, Singapore **1** (1995), 1–26. (with I.J. Dejter and H. Hevia).

Randomly star-decomposable graphs. *Congr. Numer.*, **64** (1988), 193–195. (with A. Bernasconi, E. Jeltch, C. Troncoso, and S. Ruiz).

Other Publications

Sequence A079273: Wiener index of the caterpillar of diameter 3 where each internal vertex has attached $n - 2$ pendent vertices. The On-Line Encyclopedia of Integer Sequences. March 31 2023.

Sequence A115514: Number of 2-element subsets of $\{1, 2, ..., n + 2\}$ such that the absolute difference of the elements is $k + 1$, where $1 \le k \le n$. The On-Line Encyclopedia of Integer Sequences. June 27 2022.

Sequence A008805: Number of connected bipartite graphs with $n + 1$ edges and a stable set of cardinality 2. The On-Line Encyclopedia of Integer Sequences. June 15 2022.

Sequence A000096: Number of bipartite graphs with $2n$ or $2n + 1$ edges, no isolated vertices, and a stable set of cardinality 2. The On-Line Encyclopedia of Integer Sequences. June 13 2022.

Sequence A008611: Number of multiples of 3 between n and $2n$. The On-Line Encyclopedia of Integer Sequences. December 20 2021.

Sequence A001900: Number of 0-1 square matrices of order $n + 1$ with exactly $2n + 1$ nonzero entries where the cell (i, j) is 1 for all $i + j = n + 2$ and every descending diagonal has exactly one 1. The On-Line Encyclopedia of Integer Sequences. July 17 2021.

Sequence A061925: Number of square polyominoes with at least $2n - 2$ cells whose bounding box has order $2 \times n$. The On-Line Encyclopedia of Integer Sequences. January 1 2021.

Sequence A102526: Number of homeomorphically irreducible caterpillars with $n + 3$ edges. The On-Line Encyclopedia of Integer Sequences. September 12 2020.

Sequence A102541: Number of irreducible caterpillars with $n + 3$ edges and diameter $k + 2$. The On-Line Encyclopedia of Integer Sequences. April 5 2020.

Sequence A329910: Number of harmoniously labeled graphs with n edges and at most n vertices. The On-Line Encyclopedia of Integer Sequences. November 23 2019.

Sequence A308203: Number of non-isomorphic kC_n-snakes for $n \geq 3$ and $k \geq 2$. The On-Line Encyclopedia of Integer Sequences. May 15 2019.

Sequence A071232: Number of non-isomorphic $8C_m$-snakes. The On-Line Encyclopedia of Integer Sequences. May 16 2019.

Sequence A168178: Number of non-isomorphic $7C_m$-snakes. The On-Line Encyclopedia of Integer Sequences. May 16 2019.

Sequence A037270: Number of non-isomorphic $6C_m$-snakes. The On-Line Encyclopedia of Integer Sequences. May 15 2019.

Sequence A002411: Number of non-isomorphic $5C_m$-snakes. The On-Line Encyclopedia of Integer Sequences. May 15 2019.

Sequence A152271: Number of reversible binary strings of length $n + 1$ with Hamming weight 1 or 2, such that the 1's are separated by an even amount of 0's. The On-Line Encyclopedia of Integer Sequences. January 28 2019.

Sequence A042971: Number of distinct asymmetric staircase walks connecting opposite corners of a grid of side $n > 1$. The On-Line Encyclopedia of Integer Sequences. November 25 2018.

Sequence A045723: Number of distinct staircase walks connecting opposite corners of a grid of side $n > 1$. The On-Line Encyclopedia of Integer Sequences. November 25 2018.

Sequence A027306: Number of distinct symmetric staircase walks connecting opposite corners of a grid of side $n > 1$. The On-Line Encyclopedia of Integer Sequences. November 25 2018.

Sequence A034851: Number of non-isomorphic outerplanar graphs of order $n + 3$, size $n + 3 + k$, and maximum degree $k + 2$. The On-Line Encyclopedia of Integer Sequences. October 18 2018.

Sequence A005418: Number of non-isomorphic generalized rigid ladders with n cells. Also, number of non-isomorphic stairs with $n + 1$ cells. (with S. Minion).The On-Line Encyclopedia of Integer Sequences. July 29 2018.

Sequence A317489: Number of palindromic compositions of n into k parts of size at least 3. The On-Line Encyclopedia of Integer Sequences. (with S. Minion). July 28 2018.

Sequence A102543: Number of non-isomorphic snake polyominoes with n cells that can be inscribed in a rectangle of height 2. The On-Line Encyclopedia of Integer Sequences. (with S. Minion). July 29 2018.

Sequence A051159: Number of symmetric stairs with n cells and k steps. The On-Line Encyclopedia of Integer Sequences. July 29 2018.

Sequence A016116: Number of symmetric stairs with n cells. The On-Line Encyclopedia of Integer Sequences. May 11 2018.

Sequence A016861: The size of any hexagonal chain graph with n cells. The On-Line Encyclopedia of Integer Sequences. (with S. Minion). March 7 2018.

Sequence A002620: Number of non-isomorphic outerplanar graphs of order $n \geq 3$, size $n + 2$, and maximum degree 4. The On-Line Encyclopedia of Integer Sequences (with S. Minion). February 27 2018.

Sequence A006918: Number of non-isomorphic outerplanar graphs of order $n \geq 3$, size $n + 2$, and maximum degree 3. The On-Line Encyclopedia of Integer Sequences (with S. Minion). February 27 2018.

Sequence A110654: Number of non-isomorphic outerplanar graphs of order $n \geq 3$ and size $n + 1$. The On-Line Encyclopedia of Integer Sequences (with S. Minion). February 27 2018.

Sequence A057979: Number of non-isomorphic outerplanar graphs of order $n \geq 3$, maximum degree 3, and largest possible size. The On-Line Encyclopedia of Integer Sequences (with S. Minion). February 27 2018.

Sequence A003453: Number of non-isomorphic outerplanar graphs of order $n \geq 3$ and size $n + 2$. The On-Line Encyclopedia of Integer Sequences (with S. Minion). February 27 2018.

Sequence A194005: Number of symmetric binary strings of odd length n with Hamming weight $k > 0$ and no consecutive 1's. The On-Line Encyclopedia of Integer Sequences (with S. Minion). February 27 2018.

Sequence A016777: The size of any snake polyomino with n cells. The On-Line Encyclopedia of Integer Sequences (with S. Minion). February 27 2018.

Sequence A255908: Number of ρ-labeled graphs with n edges whose labeling is bipartite with boundary value λ. The On-Line Encyclopedia of Integer Sequences (with S. Minion). March 10 2015.

Sequence A085527: Number of ρ-labeled graphs with n vertices. The On-Line Encyclopedia of Integer Sequences (with S. Minion). February 20 2015

Sequence A241094: Number of β-labeled graphs that do not use the label i, where $1 \leq i \leq n - 1$. The On-Line Encyclopedia of Integer Sequences (with S. Minion). April 15 2014

Sequence A245517: Number of α-labeled graphs with n edges and boundary value λ that do not use one number from $\{1, 2, ..., n - 1\}$ as a label, $n \geq 4$, $1 \leq \lambda \leq n - 2$. The On-Line Encyclopedia of Integer Sequences (with S. Minion). July 24 2014.

Sequence A245518: Number of α-labeled graphs with n edges that do not use the label i for $1 \leq i \leq n - 1$ and $n \geq 4$. The On-Line Encyclopedia of Integer Sequences (with S. Minion). July 24 2014.

Sequence A245519: Number of α-labeled graphs with n edges and at most n vertices, $n \geq 1$. The On-Line Encyclopedia of Integer Sequences (with S. Minion). July 24 2014.