

Henry Arellano-Peña

Biologist · MSc · PhD in Biology

Director, NEBIOT S.A.S. | Bogotá, Colombia

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Research profile

I develop rigorous methodologies for tropical ecosystem assessment, monitoring, modeling, and management. My work integrates field observations, ecosystem and hydraulic modeling, remote sensing and geographic information systems, continental ecology, floristics, biodiversity, and REDD+ technical development.

My research also connects economic modeling, complex market dynamics, decentralized monetary systems, philosophy, metaphysics, metamathematics, epistemology, and systems thinking. I am interested in the foundations and limits of mathematical description, the relationship between models and reality, and the organization of biological and physical systems.

I am the author of *The Hidden Territory* and *El Territorio Oculto* (2026), presenting my TCGS-SEQUENTION framework in English and Spanish across biology, physics and philosophy.

I am Director of NEBIOT S.A.S. and hold a BSc, MSc, and PhD in Biology from Universidad Nacional de Colombia. My earlier affiliation with its Instituto de Ciencias Naturales, as an associate researcher in the Biodiversity and Conservation group, ended in November 2012.

Ecosystems

Tropical forests, wetlands, Andean landscapes, páramos, biodiversity and ecosystem services.

Methods

Field assessment, spatial analysis, remote sensing, hydraulic modeling, forest carbon and REDD+.

Foundations

TCGS-SEQUENTION, metaphysics, metamathematics, epistemology and systems thinking.

Complex systems

Economic modeling, market dynamics and decentralized monetary systems.

A personal research programme

Creating TCGS-SEQUENTION has been a major milestone in my intellectual journey and philosophy of life. It brings my interests in nature, formal reasoning and knowledge into a common research programme, while maintaining a clear distinction between reality and the mathematical representations used to investigate it.

01

Authored books

The Hidden Territory and El Territorio Oculto present my TCGS–SEQUENTION framework in English and Spanish. These books explore connections among biology, physics, metaphysics and the foundations of knowledge. Their publication marks a major milestone in my intellectual journey and philosophy of life.

ENGLISH EDITION

The Hidden Territory

Why Reality is a 4D Illusion and How It Changes Everything

Henry Arellano-Peña
15 March 2026
Paperback · 546 pages
Independently published

ISBN 979-8252117089
[Amazon](#)

SPANISH EDITION

El Territorio Oculto

Por qué la realidad es una ilusión 4D y cómo eso lo cambia todo

Henry Arellano-Peña
14 March 2026
Paperback · 577 pages
Independently published

ISBN 979-8252005805
[Amazon](#)

02

Professional appointments

Oct 2017–present

Director

NEBIOT S.A.S. · Bogotá, Colombia

Lead environmental consulting and the development of scientific methodologies for the assessment, monitoring, modeling and management of tropical ecosystems. Integrate ecological and hydraulic models, geospatial information, biodiversity assessment and ecosystem-service analysis.

- Develop rigorous approaches to forest carbon estimation, vegetation classification, environmental characterization and REDD+ technical work.
- Coordinate multidisciplinary research and consulting activities linking field evidence, analytical methods and environmental management.

Nov 2012–Nov 2017

Vice-President of Innovation, Research and Development

Compensation International Progress S.A. · Bogotá, Colombia

Led multidisciplinary scientific, socio-environmental and economic projects within REDD+ initiatives, including Flor de Inírida in the Guayana–Amazonian transition region of Guainía.

- Coordinated research, socioeconomic characterization and field expeditions, with teams of up to 30 members.
- Contributed to project feasibility studies, governance arrangements, environmental baselines and resource-mobilization activities.

Jan 1999–Nov 2012

Associate Researcher

Universidad Nacional de Colombia · Instituto de Ciencias Naturales · Biodiversity and Conservation group

Worked on regional biodiversity and conservation projects, vegetation and floristic studies, experimental design, sampling, advanced data analysis, geographic databases and environmental cartography.

- Developed biological and geospatial analyses across Colombian forests, wetlands, mountain systems and páramos.

03

Education and distinctions

Universidad Nacional de Colombia · Faculty of Sciences, Department of Biology

Jun 2008–Dec 2012

PhD in Biology

Biodiversity and Conservation

Thesis: Servicios ambientales de la biodiversidad: Almacenamiento de carbono y deforestación evitada, en áreas del Caribe colombiano.

Jan 2006–Aug 2008

MSc in Biology

Biodiversity and Conservation

Thesis: Las unidades ecológicas, los ecosistemas y la fragmentación en áreas de páramo en Colombia. Un enfoque metodológico sobre las consecuencias ecológicas de la intervención antrópica.

Jun 1995–Sep 2001

BSc in Biology

Biology

Thesis: Estudio de la vegetación del sistema Andino de la Serranía del Perijá.

Academic distinctions

2012

Mención laureada · Doctoral dissertation

Faculty of Sciences Resolution 089, 23 October 2012.

2008

Mención meritoria · Master's dissertation

Universidad Nacional de Colombia.

2001

Mención meritoria · Bachelor's thesis

Universidad Nacional de Colombia.

Continuing education

23 May 2018

Introduction to Mathematical Thinking

Stanford University · Online course

04

Research programmes and methodological contributions

TCGS–SEQUENTION

Foundational research and philosophy

An interdisciplinary research framework connecting physics, biology, metaphysics and metamathematics. It proposes a timeless four-dimensional Counterspace as the underlying source of the observable three-dimensional world; SEQUENTION examines biological organization and apparent change within that architecture.

The programme explores invariants, the relationship between formal models and reality, the limits of mathematical representation and the connection between observable patterns and underlying structure. It is articulated through preprints, formal analyses and proposed empirical tests. Developing it has been a major milestone in my personal philosophy and intellectual life.

3D carbon pool in trees

Forest structure and carbon assessment

Development of three-dimensional methods using structural and architectural observations of tropical trees, shrubs and herbaceous vegetation to estimate biomass and elemental stocks.

The approach connects individual-scale measurements with mathematical modeling and spatial analysis for ecosystem-service assessment.

CCA-Fuzzy Land Cover

Vegetation classification and ecological cartography

Development of a methodological approach combining vegetation analysis, multivariate methods and fuzzy classification to represent land-cover and ecosystem patterns.

Applications include biophysical databases, thematic cartography, vegetation characterization and deforestation analysis.

REDD+ and ecosystem services

Environmental assessment and project development

Design and technical leadership of conservation and forest-carbon initiatives in Colombia, including Flor de Inírida during my tenure at CIPROGRESS.

Work has encompassed forest-carbon assessment, deforestation and degradation analysis, community and socioeconomic characterization, project documentation, and environmental monitoring and verification frameworks.

05

Public research software and repositories

Public repositories supporting my TCGS–SEQUENTION research through shared protocols, computational diagnostics and manuscript sources.

2026

TCGS Riemann Hypothesis Study

Mathematical research · Python and LaTeX

Manuscript and computational diagnostics for moment and prime-trace criteria and spectral exclusions related to the Riemann hypothesis. Includes nine Python diagnostic scripts, a verification driver, thirteen reference outputs, and LaTeX, PDF and Overleaf files.

[TCGS_Riemann_Hypothesis_Study](#)

2026

Quantized-inertia audit and TCGS–SEQUENTION companion

Theoretical physics · Manuscripts and computational material

Public manuscript repository for an audit of quantized-inertia claims and a conditional TCGS–SEQUENTION companion on identifiable low-rank bridges and cross-channel tests. Includes LaTeX sources, bibliographies and a Python scalar-response visualization.

quantized-inertia-audit-TCGS-SEQUENTION

2025

TCGS–SEQUENTION Three-Gate Protocol

Biological research protocol · Python

Python implementation of a three-gate protocol for testing Synchronous Parallel Emergence, addressing synchrony, population independence and common-cause controls. Includes E. coli Long-Term Evolution Experiment examples, documented input data, statistical and visualization routines, tests and reproducibility documentation.

TCGS-SEQUENTION-protocol

2025

TCSG: preregistration and reference pipelines

Physics and biology · Protocol and manuscript resources

Preregistration templates and reference pipeline specifications for a nonlinear elliptic gravity law and a biological Sequentation potential. Provides blinding and reproducibility checklists, evaluation metrics, configuration examples, LaTeX manuscript sources and supporting script skeletons.

TCSG

06

Consulting and contract research

Dec 2016–Apr 2017

Cartography Consultant

Universidad Nacional de Colombia

Basic and thematic cartography for Alto Manacacías, the Arauca floodplains and Cumaribo, under Cooperation Project 24 with Parques Nacionales Naturales.

Apr–Jun 2016

Cartography Consultant

Universidad Nacional de Colombia

Basic and thematic cartography of the Serranía del Perijá under Cooperation Project 24 with Parques Nacionales Naturales.

Feb–Jul 2014

Scientific Researcher · GIS and environmental modeling

Centro Internacional de Física (CIF)

Professional-services contract 003-2014: cartographic validation and harmonization, satellite-image processing, landscape integrity and fragmentation, hydrological and environmental risk modeling, and forest-carbon analysis.

Nov 2012–Nov 2013

Environmental and Hydrological Consultant

Fundación Hidrobiológica George Dahl

Technical, hydrological and environmental study of the Sahaya wetland and its tributaries, including integrated ecosystem characterization.

Oct 2010–Dec 2011

Consultant · Directorate of Ecosystems

Ministerio de Ambiente, Vivienda y Desarrollo Territorial

Professional services supporting the Directorate of Ecosystems under contract 1250-3-163843.

Feb–Dec 2010

Consultant · Integrated biodiversity analysis

Instituto de Investigación de Recursos Biológicos Alexander von Humboldt

Development of an institutional approach to integrated biodiversity analysis, with an emphasis on socio-ecosystem modeling.

- Oct 2009–Jun 2010 **GIS Consultant · Páramo delimitation**
 Instituto de Investigación de Recursos Biológicos Alexander von Humboldt
 Geographic-information support for criteria to delimit Colombian páramos and protect their ecological integrity.
- 2008 **Cartography Consultant**
 Environmental Resources Management (ERM), Colombia
 Cartography for environmental-management measures associated with 2D seismic operations, project 0091205.
- 2006–2007 **Database Consultant**
 Instituto Amazónico de Investigaciones Científicas SINCHI
 Normalization and structuring of SIEA 2.0, adjustment of database functions, and interface design under service orders 67 and 109.
- 2001–2002 **Professor of Scientific Illustration**
 Pontificia Universidad Javeriana · Faculty of Arts
 Taught scientific illustration in botany and zoology.

07 Earlier environmental projects

- Feb 2011–Nov 2012 **Bathymetry and biophysical characterization of Costillas, Baquero and Juncal wetlands**
 Coordinated detailed and semi-detailed bathymetric models and biophysical characterization of the wetlands and adjacent systems.
- Jan 2006–Nov 2007 **Zapatoza wetland bathymetry and environmental baseline**
 Coordinated detailed and semi-detailed bathymetric modeling within the study of fauna, flora, biophysical and socioeconomic conditions, and the wetland's environmental baseline.
- Feb 2006–Feb 2007 **Biological-monitoring application for Córdoba's dry tropical forest**
 Coordinated development and maintenance of an application linking aquatic and terrestrial environments to support biological monitoring across two climatic periods, within a relict-vegetation recovery project.
- Aug 2005–Feb 2006 **Integrated spatial characterization of vegetation, flora and fauna**
 Coordinated spatial analysis, information validation and technical documentation for vegetation, flora and fauna components.
- Aug–Oct 2005 **Digital map production and database-query application**
 Produced 80 digital maps with legends and explanatory documentation; converted interpolated data for GIS use and programmed a database-query application.
- Feb–Aug 2005 **Guanacas and Las Delicias páramo and lake-management pilot**
 Puracé, Cauca project
 Compiled primary and secondary information, prepared graphs and tables, interpreted satellite imagery, and produced cartographic inputs and explanatory documentation.
- May 2004–Feb 2005 **Jaboque wetland ecological-restoration project**
 UN-EAAB project
 Integrated vegetation, flora and fauna information with spatial statistics, sampling, fragmentation analysis and bathymetric work.

- Apr 2004–Oct 2005 **Páramo information system in the CAR jurisdiction**
CAR páramo characterization and conservation project
Coordinated design and implementation of an information system for Santuario, Merchán, Telecom, El Tablazo and Sumapaz, within a broader project also addressing Monquetiva, Guerrero and primary forests of Yacopí.
- Apr–Dec 2004 **Matavén natural-resource and biodiversity assessment**
Participatory assessment project, Cumaribo, Vichada
Produced digital maps and documentation and implemented a database-query application supporting the participatory assessment of natural resources, biodiversity and productive systems.
- Jan–Apr 2004 **GIS and database tools for páramo assessment**
Páramo-status assessment in the CORPOGUAUVIO jurisdiction
Converted interpolated data for GIS use, produced digital maps and explanatory documentation, and implemented a database-query application.
- Undated **Vegetation and flora assessment of Sumapaz and the Magdalena-facing Eastern Cordillera**
Biological documentation, databases, statistical analysis and ecological characterization, with planning and coordination of field expeditions.
- Jan 2000–Feb 2001 **Vegetation analysis, databases and remote sensing**
Instituto de Ciencias Naturales, subcontract through J. Orlando Rangel
Vegetation analysis, database development and interpretation of satellite imagery for several Colombian regions.

08

Teaching and academic advising

- Oct 2015 **Invited instructor: vegetation analysis and mapping**
Universidade Federal do Pará, Campus Altamira
Instruction in vegetation sampling, hierarchical classification, ordination, phytosociological nomenclature, fidelity analysis and mapping; applications of TWINSpan, PCA, CA, CCA and cluster analysis, with project advising.
- Dec 2009 **GIS, remote sensing and database training**
Universidad Nacional de Colombia / CORPOCESAR, Valledupar
Provided intermediate GIS and remote-sensing instruction and advanced GIS and database training for CORPOCESAR personnel.
- 1999–2009 **Ecology courses and advising**
Courses and advisory activities in ecology.
- Undated **Floristic and vegetation-analysis advising**
Universidad Distrital; Universidad Nacional de Colombia; Universidad de Sucre
Vegetation advising for Edgar Ernesto Cantillo at Universidad Distrital; floristic and vegetation-analysis advising for his master's thesis at Universidad Nacional de Colombia and for Rubén Darío Patiño's master's thesis at Universidad de Sucre.

09

Invited talks and technical exchange

- 20 Aug 2019 **Invited presentations on forest carbon and Guiana–Amazonian vegetation**
II Symposium on Vegetation Ecology / X Colombian Congress of Botany, Universidad de la Amazonía, Florencia
Two presentations: The Environmental Services of Biodiversity: A New Approach to Estimate Carbon in Above-Ground Biomass in Tropical Forests; and an approach to Guiana–Amazonian vegetation and its cartographic representation.
- 19–20 Apr 2017 **Payments for ecosystem services in protected areas**
Parques Nacionales Naturales de Colombia / MacArthur Foundation
Invited workshop participant on 19 April and invited speaker on 20 April. Presented the Guainía jurisdictional climate-change program and the Flor de Inírida REDD+ project.
- 29 Sep 2016 **Ecosystem services**
I International Virtual Academic Meeting of Environmental Sciences, UNAD–ECAPMA
Invited presentation for the School of Agricultural, Livestock and Environmental Sciences, Universidad Nacional Abierta y a Distancia.
- 18 Aug 2016 **Deforestation and forest degradation in Colombia**
Universidad Nacional Abierta y a Distancia, ECAPMA, Bogotá
Invited presentation on the state of knowledge of deforestation and forest degradation.
- 29–30 Jul 2016 **REDD+ and economic alternatives based on ecosystem services**
Colombian peace-dialogue meetings, Havana, Cuba
Presentation on deforestation, forest degradation and REDD+ as an economic alternative on 29 July; working session on economic alternatives based on ecosystem services on 30 July.
- 18 Apr 2016 **California–Colombia exchange on REDD+ and community participation**
Governor of California’s Office / CalEPA, Sacramento
Presented the Guainía jurisdictional climate-change program, the Flor de Inírida REDD+ project, and community-engagement methods used in Guainía and Guaviare. Attended CalEPA sessions on AB 32, cap-and-trade and sector-based offset credits.
- 22 Oct 2015 **The Environmental Services of Biodiversity: A New Approach to Estimate Carbon in Above-Ground Biomass in Tropical Forests**
Universidade Federal do Pará, Campus Altamira, Brazil
Invited lecture.
- 15 Oct 2015 **The Environmental Services of Biodiversity: A New Approach to Estimate Carbon in Above-Ground Biomass in Tropical Forests**
David Rockefeller Center for Latin American Studies, Harvard University, Cambridge
Invited lecture at DRCLAS, CGIS South.
- 15–16 Sep 2011 **Ecosystem services of biodiversity in the Colombian Caribbean**
International Symposium on the Biodiversity of the Colombian Caribbean, Valledupar
Invited presentation.
- 13–14 May 2010 **Climate and wetland classification in Córdoba**
Córdoba Wetlands: Biodiversity, Ecology and Environmental Management
Invited presentations on climate in the wetlands’ area of influence (13 May) and wetland classification and zoning (14 May).

- 15–16 Apr 2010 **Serranía del Perijá: climate, soils, vegetation and spatial patterns**
Symposium on the Biodiversity of the Colombian Caribbean, Instituto de Ciencias Naturales, Bogotá
Five invited presentations addressing climate and biotic relationships; soils; forest vegetation; vegetation structure and richness; and distribution of dominant species.
- Feb 2010 **Criteria and tools for páramo delimitation**
Instituto de Investigación de Recursos Biológicos Alexander von Humboldt
Invited contributions to the first and second páramo-delimitation workshops: delimitation, exploitation and conservation; and technological tools for defining delimitation criteria.
- 2010 **Conservation of wetlands in Colombia**
Earth Day, Universidad Colegio Mayor de Cundinamarca
Invited presentation.
- 10 Jun 2009 **Vegetation distribution in Colombia's páramos**
Parques Nacionales de Colombia, Dirección Territorial Surandina / Banco de la República
Invited presentation at the environmental event Small Actions That Make the Difference.
- 18–19 Dec 2007 **Management plan for the Perijá páramo**
Regional Páramo Training Workshop, Ministry of Environment, Housing and Territorial Development / CORPONARIÑO, Pasto
Invited presentation.
- 5–6 Sep 2002 **Methods for assessing human disturbance and vegetation succession**
CONIF / Ministerio del Medio Ambiente, Plan Verde training component
Invited contribution to the seminar on barriers, human disturbance and successional dynamics in reforestation.

10 Additional professional engagement

- Jan 2017 **Private technical meeting on deforestation and REDD+**
Embassy of Norway / Ciprogess Greenlife
Discussion of the state of knowledge of deforestation and forest degradation in Colombia and REDD+ as an economic alternative.
- 16 Feb 2016 **Private technical meeting on REDD+ projects in Brazil and Colombia**
Embassy of Brazil / Ciprogess Greenlife
Discussion of Virola Jatobá, Bau–Menkrãgnoti in Pará, and Flor de Inírida in Guainía.
- Mar 2015 **Private technical meeting on Guainía's jurisdictional climate program**
Embassy of Norway / Ciprogess Greenlife
Discussion of the Guainía jurisdictional climate-change program and Flor de Inírida REDD+ project.
- 2006 **Coauthored contribution on Polylepis forests**
Congress on the Conservation Status of Birds Associated with Polylepis Forests, Cusco, Peru
Coauthored conference contribution with J. Orlando Rangel on Polylepis forests in Colombia.
- 16–20 Aug 2001 **Participant, Sixth Colombian Symposium on Ichthyology**
Sixth Colombian Symposium on Ichthyology
Symposium participant.

10, 11, 12, 17 and
18 Nov 1999

Participant, Land-use Planning in Colombia

Universidad Nacional de Colombia

Participation in the land-use-planning event.

Undated

Poster participant, Latin American and Colombian botany congresses

VII Latin American Congress of Botany / II Colombian Congress of Botany, Popayán

Poster participant.

11

Scientific illustration and visual communication

Scientific illustration and visual communication have formed part of my professional practice since 1999, encompassing botanical and zoological illustration, educational panels, publication covers and three-dimensional modeling.

2000–2009

Cover art for Colombia Diversidad Biótica

Universidad Nacional de Colombia, Instituto de Ciencias Naturales

Cover illustrations for volumes III (2000), IV (2004), V (2007), VI and VII (2008), and VIII (2009), spanning páramo, Chocó, Perijá, bryophytes and lichens, and Amazonian vegetation.

2000–2001

Taxonomic illustrations in Caldasia

Caldasia

Tacca parkeri for Prieto, Fernández and Liesner (2000), *Caldasia* 22(2):265–270; *Axinaea colombiana* and *Meriania heptamera* for Lozano and Alvear (2001), *Caldasia* 23(1):147–152; and *Aiphanes pilaris*.

2000–2001

Illustrations for environmental catalogs

DAMA

Illustration work for catalogs covering bromeliads, ferns, bryophytes and arthropods.

Undated

Four educational habitat panels

Jardín Botánico de Bogotá José Celestino Mutis

Design, layout and illustration of four educational panels, incorporating three-dimensional modeling.

Undated

Illustration contributions to Red Book projects

Instituto Humboldt / Instituto de Ciencias Naturales

Cover artwork for reptile and Asteraceae Red Book projects; illustrations of Chrysobalanaceae, Lecythidaceae, Dichapetalaceae and Asteraceae.

Undated

Vegetation profiles of Tatamá and Sumapaz

Projects of Thomas van der Hammen and J. Orlando Rangel

Vegetation-profile illustrations for Tatamá (Chocó, Risaralda and Valle del Cauca) and Sumapaz.

Undated

Botanical illustrations for floristic and taxonomic studies

Instituto de Ciencias Naturales and collaborating researchers

Brunellia for Clara Inés Orozco; Myrtaceae and crucifers for Carlos Parra; Marcgraviaceae for Diego Giraldo; and *Guzmania* and *Tillandsia* for Julio Betancur. Additional illustration contributions to NOVON and Flora del Ecuador.

Undated

Illustrations for botanical theses

Universidad Nacional de Colombia and collaborating researchers

Iridaceae for Marcela Celis; Asteraceae for Gina Paola Méndez; and *Cecropia* for Pilar Franco Rosselli.

Undated

Zoological illustration

Projects of Jorge Llorente and Olga Castaño

Colombian butterflies for Jorge Llorente and illustrations of two Anolis species for Olga Castaño.

Undated

Scientific event posters

Event-poster design, including artwork for the Sixth Colombian Symposium on Ichthyology.

12

Technical practice and languages

Vegetation ecology and biodiversity

Floristic surveys; vegetation sampling, classification and ordination; phytosociology; multivariate analysis; ecosystem characterization; fragmentation, connectivity and conservation assessment.

Forest carbon, ecosystem services and REDD+

Design and development of REDD+ projects; forest-carbon and biomass estimation; ecosystem-service assessment; project documentation, monitoring, reporting and verification; regulated and voluntary environmental markets.

Geospatial and hydrological modeling

GIS, remote sensing, terrain and climate analysis, hydrological and bathymetric modeling, thematic mapping and spatial databases. Tools include ArcGIS, GRASS, ERDAS, ENVI, Global Mapper and Surfer.

Scientific programming and data analysis

Applied mathematics, experimental design, sampling, data modeling and mining; MATLAB, Octave, R, C, IDL and Mathematica; PostgreSQL/PostGIS and Oracle; statistical software including SPSS, SAS, SYSTAT and PC-ORD.

Landscape and ecosystem simulation

Spatial modeling of ecosystem change, deforestation and degradation; tools include Dinamica EGO, Envision and Kepler.

Scientific illustration and visual communication

Botanical and zoological illustration; 3D modeling; cover and educational-panel design; color reproduction. Digital tools include Photoshop, GIMP, Illustrator, Inkscape, Blender, Maya and SpeedTree; traditional media include watercolor, ink, pencil, oil, acrylic and pastel.

Interdisciplinary research and community participation

Research-team and field-expedition coordination; integration of biological, physical, social and economic information; community engagement in ecosystem and REDD+ projects.

Languages

Spanish · English: C1

13

Selected publications and research outputs

A selection spanning environmental science, botanical research, methodological development and the TCGS-SEQUENTION research programme. Publication titles are retained in their original language.

- S01 H. Arellano-Peña; D. Cárdenas-López; J. Stropp; et al (2023).
The Forests of the Upper Rio Negro (North-Western Amazon) and Adjacent South-Western Orinoco Basins: A Phytosociological Classification
Psammic Peinobiomes · pp. 55-109 · ISBN 9783031207983 · Book chapter doi:10.1007/978-3-031-20799-0_3
- S02 ForestPlots.net; Cecilia Blundo; Julieta Carilla; et al. (including H. Arellano-Peña) (2021).
Taking the pulse of Earth's tropical forests using networks of highly distributed plots
Biological Conservation · 260 · Journal article doi:10.1016/j.biocon.2020.108849
- S03 Gerardo A. Aymard C.; Henry Arellano-P.; Adela Lozano; et al (2020).
Besleria naquenensis (Beslerieae, Besleriaceae), A New Species from Serranía de Naquén, Guainía River Basin (Colombia)
Harvard Papers in Botany · 25(2) · pp. 205–214 · Journal article doi:10.3100/hpib.v25iss2.2020.n8
- S04 Henry Arellano-P.; Germán Bernal-Gutiérrez; Albeiro Calero-Cayopare; et al (2019).
The First Botanical Exploration to the Upper Cuiarí (Cuyarí) and Isana Rivers, Upper Río Negro Basin, Guainía Department, Colombia
Harvard Papers in Botany · 24(2) · pp. 83–102 · Journal article doi:10.3100/hpib.v24iss2.2019.n3
- S05 Gerardo A. Aymard C.; Henry Arellano P (2018).
First Report of Peridiscaceae for the Vascular Flora of Colombia
Harvard Papers in Botany · 23(1) · pp. 109-121 · Journal article doi:10.3100/hpib.v23iss1.2018.n12
- S06 Gerardo A. Aymard; Henry Arellano-Peña; Vladimir Minorta-C.; et al (2016).
First Report of Rhabdodendraceae for the Vascular Flora of Colombia and the Upper Río Negro Basin, with Comments on Phytogeography, Habitats, and Distribution of Rhabdodendron amazonicum
Harvard Papers in Botany · 21(1) · pp. 5-21 · Journal article doi:10.3100/hpib.v21iss1.2016.n2
- S07 Gerardo A. Aymard C.; Henry Arellano-Peña (2016).
Novedades en Rapatea (Rapateaceae) para Colombia
Revista de la Academia Colombiana de Ciencias Exactas, Físicas y Naturales · 40(157) · pp. 644-652 · Journal article doi:10.18257/raccefyn.403
- S08 H. Arellano-Peña; J. O. Rangel-Ch (2008).
Patrones en la distribución de la vegetación en áreas de páramo de Colombia: heterogeneidad y dependencia espacial
Caldasia · 30(2) · pp. 355–411 · Journal article ResearchGate
- S09 H. Arellano-Peña (2026).
Timeless Counterspace & Shadow Gravity—A Unified Framework: 4D-Counterduction, Foundational Consistency, and Cartographic Inquiry
 Preprint ResearchGate
- S10 H. Arellano-Peña (2026).
SEQUENTION: A Timeless Biological Framework for Foliated Change and 4D-Counterduction
 Preprint ResearchGate
- S11 H. Arellano-Peña (2026).
Escaping the Minkowski Trap: Why Time Cannot Be a Dimension
 Preprint ResearchGate
- S12 H. Arellano-Peña (2025).
A Three-Gate Falsification Protocol for Testing Synchronous Parallel Emergence under TCGS-SEQUENTION Framework Complete Analysis with Evidence from the E. coli Long-Term Evolution Experiment
 Preprint doi:10.20944/preprints202512.2543.v1
- S13 H. Arellano-Peña (2026).
The Metamathematical Extrinsic Constitutive Law Origin-MIND, Ontological Closure, and Gravity as a Privileged Shadow Expression in TCGS-SEQUENTION
 Preprint doi:10.13140/RG.2.2.19344.16648

- S14 H. Arellano-Peña (2026).
No Final Map: Non-Exhaustive Commensurability, Empirical Anchors, and the Present Epistemic Status of TCGS-SEQUENTION
 Preprint doi:10.13140/RG.2.2.10152.74240

14 Research catalogue

Journal articles, books, chapters, preprints and other outputs are listed in distinct categories. Repeated ResearchGate records and earlier versions of the same work have been consolidated; separately citable language editions are retained.

Dates follow publisher information where available and otherwise the cited repository record.

Journal articles

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- 001 ForestPlots.net; Cecilia Blundo; Julieta Carilla; et al. (including H. Arellano-Peña) (2021).
Taking the pulse of Earth's tropical forests using networks of highly distributed plots
Biological Conservation · 260 doi:10.1016/j.biocon.2020.108849
- 002 Gerardo A. Aymard C.; Henry Arellano-P.; Adela Lozano; et al (2020).
Besleria naquenensis (Beslerieae, Besleriaceae), A New Species from Serranía de Naquén, Guianía River Basin (Colombia)
Harvard Papers in Botany · 25(2) · pp. 205–214 doi:10.3100/hpib.v25iss2.2020.n8
- 003 Gerardo A. Aymard; Francisco Castro-Lima; H. Arellano-Peña (2020).
IDENTIFICATION OF MYRISTICACEAE FROM THE RIO NEGRO BASIN IN THE ABSENCE OF FLOWERS AND FRUITS
Pittieria · 44 · pp. 28–55 ResearchGate
- 004 Henry Arellano-P.; Germán Bernal-Gutiérrez; Albeiro Calero-Cayopare; et al (2019).
The First Botanical Exploration to the Upper Cuiarí (Cuyarí) and Isana Rivers, Upper Río Negro Basin, Guainía Department, Colombia
Harvard Papers in Botany · 24(2) · pp. 83–102 doi:10.3100/hpib.v24iss2.2019.n3
- 005 Gerardo A. Aymard C.; Henry Arellano P (2018).
First Report of Peridiscaceae for the Vascular Flora of Colombia
Harvard Papers in Botany · 23(1) · pp. 109–121 doi:10.3100/hpib.v23iss1.2018.n12
- 006 Gerardo A. Aymard C.; Henry Arellano-Peña (2016).
Novedades en Rapatea (Rapateaceae) para Colombia
Revista de la Academia Colombiana de Ciencias Exactas, Físicas y Naturales · 40(157) · pp. 644–652
 doi:10.18257/raccefyn.403
- 007 Gerardo A. Aymard; Henry Arellano-Peña; Vladimir Minorta-C.; et al (2016).
First Report of Rhabdodendraceae for the Vascular Flora of Colombia and the Upper Río Negro Basin, with Comments on Phytogeography, Habitats, and Distribution of Rhabdodendron amazonicum
Harvard Papers in Botany · 21(1) · pp. 5–21 doi:10.3100/hpib.v21iss1.2016.n2
- 008 H. Arellano-Peña; J. O. Rangel-Ch (2008).
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