

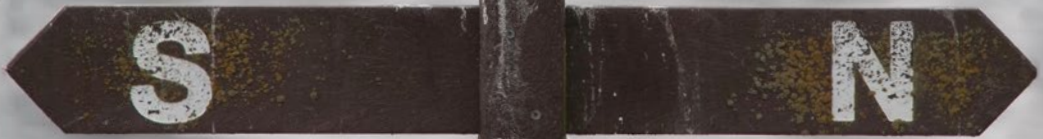
INTERNATIONAL & DEVELOPMENT EDUCATION

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# North-South University Research Partnerships in Latin America and the Caribbean

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EDITED BY Gustavo Gregorutti & Nanette Svenson



# International and Development Education

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North-South  
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International and Development Education

ISBN 978-3-319-75363-8

ISBN 978-3-319-75364-5 (eBook)

<https://doi.org/10.1007/978-3-319-75364-5>

Library of Congress Control Number: 2018935184

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Printed on acid-free paper

This Palgrave Macmillan imprint is published by the registered company Springer International Publishing AG part of Springer Nature.

The registered company address is: Gewerbestrasse 11, 6330 Cham, Switzerland

# CONTENTS

<b>1</b>	<b>Introduction</b>	<b>1</b>
	Gustavo Gregorutti and Nanette Svenson	
<b>2</b>	<b>Introducing a Bilateral Research and Innovation Agenda: A Case Study on Mexico and the United States</b>	<b>15</b>
	Gustavo Gregorutti, Beverly Barrett, and Angeles Dominguez	
<b>3</b>	<b>Science Beyond Politics: Cuba-US Marine Research and Conservation</b>	<b>37</b>
	Daria Siciliano, Fernando Bretos, Julia Azanza, and Nanette Svenson	
<b>4</b>	<b>INCAE, Harvard, and International Development: Research for Progress in Central America</b>	<b>61</b>
	Nanette Svenson	
<b>5</b>	<b>International Research Collaboration and Knowledge Production in Colombia: A Qualitative Network Analysis Approach</b>	<b>87</b>
	Clara I. Tascón	

<b>6</b>	<b>The Political Economy of Legal Knowledge in Action: Collaborative Projects in the Americas</b>	<b>115</b>
	Daniel Bonilla Maldonado and Colin Crawford	
<b>7</b>	<b>Small Fish in a Big Pond: Internationalization and Research Collaboration in Bolivia and Paraguay</b>	<b>141</b>
	Jorge Enrique Delgado	
<b>8</b>	<b>Comparing Urban Mobility and the Energy Transition in France, USA, and Brazil: From Research Collaboration to Institutional Partnerships</b>	<b>175</b>
	J. Kent Fitzsimons, Guy Tapie, Patrice Godier, and Cristina de Araújo Lima	
<b>9</b>	<b>International Partnerships for Collaborative Research in Argentinian Universities</b>	<b>203</b>
	Ángela Corengia, Ana García de Fanelli, Marcelo Rabossi, and Dante J. Salto	
<b>10</b>	<b>Collaborative Research by Chilean and North American Scholars: Precedents and Projections</b>	<b>233</b>
	Oscar Espinoza, Luis Eduardo González, and Noel F. McGinn	
<b>11</b>	<b>Research Partnership Over Neocolonialism: Max Planck Society Policy in Latin America</b>	<b>259</b>
	Pedro Pineda and Bernhard Streitwieser	
	<b>Index</b>	<b>279</b>

The *International and Development Education Series* focuses on the complementary areas of comparative, international, and development education. Books emphasize a number of topics ranging from key international education issues, trends, and reforms to examinations of national education systems, social theories, and development education initiatives. Local, national, regional, and global volumes (single authored and edited collections) constitute the breadth of the series and offer potential contributors a great deal of latitude based on interests and cutting-edge research. The series is supported by a strong network of international scholars and development professionals who serve on the International and Development Education Advisory Board and participate in the selection and review process for manuscript development.

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## SERIES EDITORS INTRODUCTION

We are pleased to introduce another volume in the Palgrave Macmillan International and Development Education book series. In conceptualizing this series we took into account the extraordinary increase in the scope and depth of research on education in a global and international context. The range of topics and issues being addressed by scholars worldwide is enormous and clearly reflects the growing expansion and quality of research being conducted on comparative, international, and development education (CIDE) topics. Our goal is to cast a wide net for the most innovative and novel manuscripts, both single-authored and edited volumes, without constraints as to the level of education, geographical region, or methodology (whether disciplinary or interdisciplinary). In the process, we have also developed two subseries as part of the main series: one is cosponsored by the East West Center in Honolulu, Hawaii, drawing from their distinguished programs, the International Forum on Education 2020 (IFE 2020) and the Asian Pacific Higher Education Research Partnership (APHERP); and the other is a publication partnership with the Higher Education Special Interest Group of the Comparative and International Education Society that highlights trends and themes on international higher education.

The issues that will be highlighted in this series are those focused on capacity, access, and equity, three interrelated topics that are central to educational transformation as it appears around the world today. There are many paradoxes and asymmetries surrounding these issues, which include problems of both excess capacity and deficits, wide access to facilities as well as severe restrictions, and all the complexities that are included in the

equity debate. Closely related to this critical triumvirate is the overarching concern with quality assurance, accountability, and assessment. As educational systems have expanded, so have the needs and demands for quality assessment, with implications for accreditation and accountability. Intergroup relations, multiculturalism, and gender issues comprise another cluster of concerns facing most educational systems in differential ways when one looks at the change in educational systems in an international context. Diversified notions of the structure of knowledge and curriculum development occupy another important niche in educational change at both the precollegiate and collegiate levels. Finally, how systems are managed and governed are key policy issues for educational policymakers worldwide. These and other key elements of the education and social change environment have guided this series and have been reflected in the books that have already appeared and those that will appear in the future. We welcome proposals on these and other topics from as wide a range of scholars and practitioners as possible. We believe that the world of educational change is dynamic, and our goal is to reflect the very best work being done in these and other areas. This volume meets the standards and goals of this series and we are proud to add it to our list of publications.

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## ABBREVIATIONS AND ACRONYMS

AACSB	Association to Advance Collegiate Schools of Business
ABCE	Bolivian Academy of Economic Sciences
ABEST	Argentinian Bureau for Enhancing Cooperation with the European Community
AHCI	Arts & Humanities Citation Index
AIEA	Association of International Education Administrators
ALMA	Atacama Large Millimeter Array
ALTAGRO	Agriculture Alternative
ANII	National Agency of Research and Innovation
ANPCYT	National Agency for Science and Technology Promotion
APEX	Atacama Pathfinder Experiment
APLU	Association of Public and Land-Grant Universities
ASEAN	Association of Southeast Asian Nations
ATTO	Amazon Tall Tower Observatory
BALAS	Business Association of Latin American Studies
BCIE	Central American Bank for Economic Integration
BIO-ICE	Biodiversity in Bolivian Glaciers
BIO-THAW	Tropical High Andean Wetlands
BIOMOLELECTRONICS	Biomolecular Electronics and Electrocatalysis
BMBF	German Federal Ministry of Education and Research
BRT	Bus Rapid Transit

CA	California
CAF	Development Bank of Latin America
CAFTA	Central American Free Trade Agreement
CAPSI	Central American Private Sector Initiative
CEBEM	Bolivian Center for Multidisciplinary Research
CELADE	Latin American and Caribbean Center of Demography
CEPAL	Economic Commission for Latin America and the Caribbean
CERES	Center for Studies on Economic and Social Reality
CFP	Call for Proposals
CIM	Center for Marine Research of the University of Havana
CIMA	Center for Applied Medicine Research
CITES	Convention on International Trade in Endangered Species of Flora and Fauna
CLACDS	Latin American Center for Competitiveness and Sustainable Development
CLACSO	Latin American Council on the Social Sciences
CLADEA	Latin American Council of Business Schools
CNPq	National Council for Scientific and Technological Development
COCHRANE	Database of Systematic Reviews
COLCIENCIAS	Colombian National Science and Technology System
CONACYT	National Council on Science and Technology Mexico
CONAHEC	Consortium for North American Higher Education
CONICET	National Scientific and Technical Research Council, Argentina
CONICYT	National Commission for Scientific and Technological Research, Chile
COPriResNet	Colombian Private Research Network
COPubResNet	Colombian Public Research Network
CRUCH	Council of Rectors of Chilean Universities
CV	Curriculum Vitae
DAAD-Germany	German Academic Exchange Service

DCIT	Department of Communication and Information Technologies
DETEIC	Technological Development, Innovation and Conformity Assessment Project, Paraguay
DST	Department of Science and Technology
EBSCO	EBSCO Information Services
ECLAC	United Nations Economic Confederation for Latin America and the Caribbean
EFMD	European Foundation for Management Development
EHEA	European Higher Education Area
ERA	European Research Area
EURALSUR	Europe-Mercosur Network in Advanced Materials and Nanomaterials
FCB	School of Biomedical Sciences
FLACSO	Latin American Faculty of Social Sciences
FOBESII	Bilateral Forum on Higher Education, Innovation, and Research
FONDECYT	National Fund for Science and Technology
GDP	Gross Domestic Product
GPS	Global Positioning Systems
GT	Group Turtle
GTZ	German Federal Enterprise for International Cooperation
HBS	Harvard Business School
HE	Higher Education
HIID	Harvard Institute for International Development
HU	Harvard University
IAA	International Association of Academies
IBIOBA	Institute for Biomedical Research of Buenos Aires
ICSU	International Council for Science
ICT	Information and Communication Technologies
IDB	Inter-American Development Bank
ILPES	Latin American Institute for Economic and Social Planning
IMR	Ignis Mutat Res
INCAE	Central American Institute of Business Administration

INPA	National Institute of Amazonian Research
INQUIMAE	Institute of Chemical Physics of Materials, Environment and Energy
IRC	International Research Collaboration
IUCN	International Union for Conservation of Nature
KFW	German Bank for Development
KI	Karolinska Institute
LAC	Latin America and the Caribbean
LAPOP	Latin American Public Opinion Project
LATINDEX	Regional Cooperative Online Information System for Scholarly Journals from Latin America, the Caribbean, Spain and Portugal
MBA	Master of Business Administration
MEC	Ministry of Education
MINCYT	Ministry of Science, Technology and Productive Innovation
MIT	Massachusetts Institute of Technology
MOU	Memorandum of Understanding
MP	Max Planck
MPAs	Marine Protected Areas
MPI	Max Planck Institutes
MPS	Max Planck Society
NAFSA	National Association of Foreign Student Advisors
NAFTA	North American Free Trade Agreement
NASPAA	Association of Schools of Public Affairs and Administration
NGO	Non-Governmental Organization
NMNHP	National Museum of Natural History of Paraguay
NOAA	National Oceanic and Atmospheric Administration
OECD	Organisation for Economic Co-operation and Development
PAVE	Profession Architecture, Ville et Environment Research Laboratory
PhD	Doctor of Philosophy

PIIE	Interdisciplinary Program for Educational Research
PIRE	Partnerships for International Research and Education
PREAL	Partnership for Educational Revitalization in the Americas
PROCIT	Support Program for the Development of Science, Technology and Innovation, Paraguay
PROINPA	Andean Products Promotion and Research Foundation
PRONII	National Incentive Program for Researchers, Paraguay
QS	Quacquarelli Symonds World University Ranking
R/V	Research Vessel
R&D	Research and Development
RAICES	Network of Argentinian Researchers and Scientists Abroad
RedALyC	Latin America and Caribbean Scientific Information System
RICYT	Iberic-American and Inter-American Network of Science and Technology Indicators
SACS	Southern Association of Colleges and Schools
SBS	School of Biomedical Sciences
SCI	Science Citation Index
SciELO	Scientific Electronic Library Online
SEKN	Social Enterprise Knowledge Network
SNA	Social Network Analysis
SNP	South-North Partnerships
SPI	Social Progress Imperative
SSCI	Social Sciences Citation Index
STEM	Science, Technology, Engineering, and Mathematics
STI	Science, Technology, and Innovation
TECH	Monterrey Institute of Technology and Higher Education
TOF	The Ocean Foundation
TWAIL	Third World Approaches to Law
TWAS	Third World Academy of Science



UA	Austral University
UABJB	Autonomous University of Beni José Ballivián
UAJMS	Autonomous University Juan Misael Saracho
UBA	University of Buenos Aires
UC	University of Cincinnati
UCBSP	Bolivian Catholic University San Pablo
UCNSA	Catholic University Our Lady of Asuncion
UCSC	University of California, Santa Cruz
UFPR	The Federal University of Paraná in Curitiba, Brazil
UIS	UNESCO Institute for Statistics
UK HE	United Kingdom Higher Education
UMSA	Major University of San Andres
UMSS	Major University of San Simon
UNA	National University of Asuncion
UNCED	United Nations Conference on Environment and Development
UNDP	United Nations Development Program
UNEP	United Nations Environmental Program
UNESCO	United Nations Educational, Scientific and Cultural Organization
UPB	Bolivian Private University
USAID	United States Agency for International Development
USD	United States Dollar
WEF	World Economic Forum
WHOI	Woods Hole Oceanographic Institution
WoK	Web of Knowledge
WTO	World Trade Organization

## LIST OF FIGURES

- Fig. 5.1 Colombia Public Research Network—COPubResNet. (Direct members (nodes) of the COPubResNet: COPubProf1 (Coordinator of the network), COPubProf2, COPubProf3, COPubProf4, COPubPostdoc, COPubDr, COPubMon. Indirect members (nodes) of the COPubResNet: COPubResFac1, COPubIntOff, COPubVicResOff, and other research networks such as EuroAsianNet, COPubUNet, CONatNet, LatinNet1, and so on) 96
- Fig. 5.2 Colombian Private Research Network—COPriResNet. (Direct members (nodes) of the COPriResNet: COPriProf1, COPriProf2, COPriProf3, COPriProf4, COPriPhD1, COPriPhD2, COPriMon. Indirect members (nodes) of the COPriResNet: COPriResFac, COPriVicResOff, COPriIntOff, and other research networks such as COPriUNet, CONatNet, EuroNet1, LatinNet1, and so on) 97
- Fig. 9.1 Argentinian papers produced through international collaboration, by country, 2008–2012. (Source: MINCYT 2014) 210

## LIST OF TABLES

Table 2.1	Collaboration agreements with US research partners, 1981–2016	18
Table 3.1	The Ocean Foundation as a conduit for US-Cuba marine research	52
Table 4.1	Selected Central American development statistics, 2014	64
Table 4.2	List of INCAE rectors	72
Table 4.3	Types of research collaboration and associated characteristics	74
Table 5.1	Colombian Public Research Network (COPubResNet), node codes and descriptors	99
Table 5.2	Colombian Private Research Network (COPriResNet), node codes and descriptors	100
Table 7.1	Journals in SciELO Bolivia, December 2015	152
Table 7.2	Journals in SciELO Paraguay, December 2015	154
Table 9.1	Criteria and dimensions	215
Table 9.2	Number of publications and citations in relation to international collaboration at INQUIMAE and FCB, 2010–2014	224
Table 10.1	Number of collaborative research projects by university and topic (2010–2015)	244
Table 10.2	Research reports by targeted population	247
Table 10.3	Participating researchers, disciplines, and degree levels	247
Table 11.1	Development of Max Planck’s partnerships with Latin America (2013–2015)	267
Table 11.2	Max Planck Research Groups currently operating in Latin America	269



# Introduction

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Research productivity is a critical component of university output worldwide and a major determinant in global university rankings. Universities in Latin America and the Caribbean (LAC) have been consistently weak in this regard. The entire region accounts for just over three percent of global research and development (R&D), around four percent of Science Citation Index publications, and about two percent of the top 500 universities globally (Marginson 2012; PREAL 2007; Velez-Cuartas et al. 2015). Despite the lackluster figures, certain LAC university research programs are producing results. Many of these engage North-South university partnerships, with one or more institutions from industrialized countries and one or more LAC institutions.

This book explores the dynamics involved in some of these LAC North-South research partnerships and presents various examples from countries in the region as illustrative case studies. The general research questions in the studies of the cases presented revolve around: What

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motivates collaboration between universities in different countries with distinct sociocultural and economic development contexts? What barriers and limitations are faced in carrying out joint research? What key factors advance research productivity for these partnerships? Much of the scholarly work done on international research collaborations (IRCs), and North-South partnerships in particular, focuses on co-authorship as a measure for increased productivity; it concentrates less on the intangible, multifaceted issues of relationships, operational mechanics, and knowledge generation. The focus of this book is the latter. It builds on the literature studying the many forms these collaborations may take, with varying responsibilities for involved parties; the different motivations—individually and organizationally driven—for entering into such partnerships; and the external and internal factors that influence collaboration parameters (Bozeman et al. 2013; Bradley 2007; Sonnenwald 2007). Through application of case study analysis, the book contributes qualitative empirical evidence to further substantiate and broaden documented theoretical claims on international, and particularly North-South, research partnerships.

This introduction to the text begins with a brief overview of the literature on IRC and partnerships. It then links this review with certain relevant characteristics and tendencies of the LAC region and its higher education and research sectors. Finally, it presents synopses of the case studies that form the basis for each of the subsequent chapters.

## INTERNATIONAL RESEARCH COLLABORATION AND NORTH-SOUTH UNIVERSITY PARTNERSHIPS

The practice of research collaboration between universities and scholars in different countries is almost as old as academia itself. While formal definitions, agreement parameters, and publication on the topic of IRC, itself, are all newer phenomena, the cross-border combining of forces for expanded, improved scientific perspective and results has a long academic tradition. Even more organized associations for propelling this endeavor have been in existence for more than a century. The International Council for Science (ICSU), one of the oldest non-governmental organizations for promoting scientific partnerships between countries for the benefit of humanity, was founded in 1931—and represented a merger of earlier bodies dedicated to similar missions, the International Association of Academies (1899–1914) and the International Research Council (1919–1931).

Today, the ICSU boasts 122 members representing 142 countries around the world and lists its key priorities as IRC, development of international science policy, and the creation of a global scientific community on the basis of equity (ICSU 2016). Agreements of collaborations between the European Union and LAC have been on the rise; the Declaration of Santiago is one of the most comprehensive partnerships between the regions (Council of the European Union 2013). Projects oriented to map biodiversity and ecosystems in LAC supported by the European Research Area are new possibilities for researchers and universities to join in complex teams across continents (Olivier et al. 2016).

The focus on North-South university partnerships for research collaboration also has a fairly long tradition, though publication on the subject as such was accelerated as a result of post-World War II decolonization efforts and the more recent advent of the knowledge economy near the end of the twentieth century (Baud 2002; Binka 2005; Gaillard 1994). In this discourse, the issues revolve more around inequality, in all its facets, knowledge transfer, and pursuit of mutually beneficial agendas and outputs. Yet, in spite of the increased attention directed toward the topic, a number of important gaps persist in the literature.

First, there is a disproportionate tendency to rely on bibliometric quantification of international co-authorship as the predominant methodology for assessing international research cooperation (Bozeman et al. 2013; Katz and Martin 1997). While this means is undeniably simpler and easiest to measure, it ignores numerous aspects of the collaborative relationships and their results, as well as the associations that do not produce joint publications. Second, even studies that go beyond co-authorship metrics tend to focus on efficiency and productivity gains without exploring the more complex issues of ownership, capacity development, and sustainability (Bozeman et al. 2013). Third, to the extent that individual research partners' situations are examined, emphases are inclined toward respective financial resources (Ynalvez and Shrum 2011), organizational management characteristics (Cummings and Kiesler 2005; Fox and Mohapatra 2007; Siegel et al. 2003), and specific forms of partnership (Bukvova 2010; Morrison et al. 2003; Sonnenwald 2007).

Among the more comprehensive activities undertaken in recent years to review the overall state of IRC and the individual elements that comprise it are the 2008 study, *International Research Collaboration: Opportunities for the UK Higher Education Sector*, conducted by the UK