

**Advances in the Study of Entrepreneurship,
Innovation and Economic Growth**
Volume 24

Innovative Pathways for University Entrepreneurship in the 21st Century

**Sherry Hoskinson
Donald F. Kuratko**
Editors

ADVANCES IN THE STUDY OF ENTREPRENEURSHIP,
INNOVATION AND ECONOMIC GROWTH VOLUME 24

INNOVATIVE PATHWAYS FOR UNIVERSITY ENTREPRENEURSHIP IN THE 21ST CENTURY

EDITED BY

SHERRY HOSKINSON

University of Arizona, Tucson, AZ, USA

DONALD F. KURATKO

*Kelley School of Business, Indiana University Bloomington,
Bloomington, IN, USA*



United Kingdom – North America – Japan
India – Malaysia – China

Emerald Group Publishing Limited
Howard House, Wagon Lane, Bingley BD16 1WA, UK

First edition 2014

Copyright © 2014 Emerald Group Publishing Limited

Reprints and permission service

Contact: permissions@emeraldinsight.com

No part of this book may be reproduced, stored in a retrieval system, transmitted in any form or by any means electronic, mechanical, photocopying, recording or otherwise without either the prior written permission of the publisher or a licence permitting restricted copying issued in the UK by The Copyright Licensing Agency and in the USA by The Copyright Clearance Center. Any opinions expressed in the chapters are those of the authors. Whilst Emerald makes every effort to ensure the quality and accuracy of its content, Emerald makes no representation implied or otherwise, as to the chapters' suitability and application and disclaims any warranties, express or implied, to their use.

British Library Cataloguing in Publication Data

A catalogue record for this book is available from the British Library

ISBN: 978-1-78350-498-5

ISSN: 1048-4736 (Series)



ISOQAR certified
Management System,
awarded to Emerald
for adherence to
Environmental
standard
ISO 14001:2004.

Certificate Number 1985
ISO 14001



INVESTOR IN PEOPLE

ADVANCES IN THE STUDY OF ENTREPRENEURSHIP, INNOVATION AND ECONOMIC GROWTH

Series Editors: Sherry Hoskinson and Donald F. Kuratko

Recent Volumes:

- Volume 12: Entrepreneurship and Economic Growth in the American Economy, Gary D. Libecap
- Volume 13: Entrepreneurial Inputs and Outcomes, Gary D. Libecap
- Volume 14: Issues in Entrepreneurship, Gary D. Libecap
- Volume 15: Intellectual Property and Entrepreneurship, Gary D. Libecap
- Volume 16: University Entrepreneurship and Technology Transfer, Gary D. Libecap
- Volume 17: The Cyclic Nature of Innovation: Connecting Hard Sciences with Soft Values, Guus Berkhout, Patrick van der Duin, Dap Hartmann and Roland Ort
- Volume 18: Technological Innovation: Generating Economic Results, Gary D. Libecap and Marie Thursby
- Volume 19: Measuring the Social Value of Innovation: A Link in the University Technology Transfer and Entrepreneurship, Gary D. Libecap
- Volume 20: Frontiers in Eco-Entrepreneurship Research, Gary D. Libecap
- Volume 21: Spanning Boundaries and Disciplines: University Technology Commercialization in the Idea Age, Gary D. Libecap, Marie Thursby and Sherry Hoskinson
- Volume 22: Entrepreneurship and Global Competitiveness: Determinants and Policy Implications, Gary D. Libecap and Sherry Hoskinson
- Volume 23: A Cross-Disciplinary Primer on the Meaning and Principles of Innovation, Matthew M. Mars and Sherry Hoskinson

LIST OF CONTRIBUTORS

- Natalie Antal* Associate Director, Center for Entrepreneurship, University of Rochester, Rochester, NY, USA
- Kendall Artz* Director of Baylor Entrepreneurship Program, Chairman of Department of Management and Entrepreneurship, Department of Management and Entrepreneurship, Hankamer School of Business, Baylor University, Waco, TX, USA
- Steven W. Bradley* Assistant Professor, Department of Management and Entrepreneurship, Hankamer School of Business, Baylor University, Waco, TX, USA
- Candida G. Brush* Franklin W. Olin Distinguished Chair of Entrepreneurship, Chair – Entrepreneurship Division, Research Director – Arthur M. Blank Center, Babson College – Entrepreneurship Division, Arthur M. Blank Center for Entrepreneurship, Babson College, MA, USA
- Alex Bruton* Associate Professor, Bissett School of Business, Mount Royal University, Calgary, Alberta, Canada
- Jasmine A. Cordero* Managing Director of The Center for Urban Entrepreneurship & Economic Development, Department of Management & Global Business, Rutgers Business School, Rutgers, The State University of New Jersey, Newark-New Brunswick, NJ, USA

- Eduardo Gajón* School of Business and Entrepreneurship, Tecnológico de Monterrey, Campus Laguna, Nuevo León, Mexico
- Maribel Guerrero* Entrepreneurship Department, Orkestra – Basque Institute of Competitiveness, Deusto Business School, University of Deusto, Vizcaya, Spain
- Yuen-Ping Ho* Associate Director – Research Program, NUS Entrepreneurship Centre, National University of Singapore, Singapore
- Bruce Kingma* Professor, Whitman School of Management, iSchool, Syracuse University, New York, NY, USA
- Donald F. Kuratko* The Jack M. Gill Distinguished Chair of Entrepreneurship, Professor for Entrepreneurship; Executive & Academic Director, Johnson Center for Entrepreneurship & Innovation, The Kelley School of Business, Indiana University – Bloomington, IN, USA
- Pei-Chin Low* Assistant Manager – Research Program, NUS Entrepreneurship Centre, National University of Singapore, Singapore
- Matthew M. Mars* Assistant Vice President, Outreach College, The University of Arizona, Tucson, AZ, USA
- Jack Mason* Director of Entrepreneurial Studies, Palumbo Donahue School of Business, Duquesne University, Pittsburgh, PA, USA
- Duncan Moore* Rudolf and Hilda Kingslake, Professor & Vice Provost for Entrepreneurship, Center for Entrepreneurship, University of Rochester, Rochester, NY, USA

- Michael H. Morris* George and Lisa Etheridge Professor,
Academic Director of Entrepreneurship
Program, Warrington College of Business
Administration, University of Florida,
Gainesville, FL, USA
- Arturo E. Osorio* Assistant Professor of Entrepreneurship,
Fellow at The Center for Urban
Entrepreneurship & Economic
Development, Department of
Management & Global Business, Rutgers
Business School, Rutgers, The State
University of New Jersey, Newark-New
Brunswick, NJ, USA
- Ana Cristina O.
Siqueira* Assistant Professor of Management,
Palumbo Donahue School of Business,
Duquesne University, Pittsburgh, PA, USA
- Deborah Streeter* Bruce F. Failing, Sr. Professor of Personal
Enterprise, Charles H. Dyson School of
Applied Economics and Management,
Cornell University, Ithaca, NY, USA
- David Urbano* Business Economics Department,
Autonomous University of Barcelona,
Barcelona, Spain
- Chris Welter* Assistant Professor, Department of
Management, College of Business
Administration, Georgia Southern
University, Statesboro, GA, USA
- Poh-Kam Wong* Director, NUS Entrepreneurship Centre,
National University of Singapore,
Singapore
- Matthew Wood* Assistant Professor, Department of
Management and Entrepreneurship,
Hankamer School of Business, Baylor
University, Waco, TX, USA

INTRODUCTION

The complex global environment for entrepreneurship and innovation has experienced significant change during the past decade requiring a deeper understanding of economic, capital, technological, environmental, and social forces in order for this generation to realize sustained success. University-based entrepreneurship is at the nexus of this environment. Students of entrepreneurship and the faculty that are educating the innovation workforce are uniquely positioned as agents in the movement of discovery and innovation. This volume seeks to build a large body of scholarship specific to entrepreneurship education by providing the latest perspectives on how the entrepreneurship field of study looks forward to reshape and prepare tomorrow's highly sophisticated entrepreneurial generations. Scholarly papers from research and teaching faculty in this volume examine some of the most current topics, perspectives, challenges, and visions in the area of entrepreneurship education. These chapters reflect the sense of urgency and commitment to respond to the call to lead the coming generations in entrepreneurial spirit and excellence.

The first chapter of the volume, "Building University 21st Century Entrepreneurship Programs that Empower and Transform" is authored by Michael H. Morris and Donald F. Kuratko. In this chapter, the authors investigate the development of entrepreneurship programs in universities. More specifically they contend that programs should be created for empowerment and transformation across the campus. The authors describe some of the most common structural forms for programs, outline different degree programs, and emphasize the empowering and transforming effects of these programs for all the stakeholders of a university. The chapter provides a substantive framework for the volume overall and the specific programs and goals described in the subsequent chapters.

In chapter two by Candida G. Brush, the author explores the concept of an entrepreneurship education ecosystem. Although the concept of ecosystem originates from the natural sciences, it is a concept that is increasingly applied to regional development — or clusters — which focus on firm inter-organizational relationships. In Brush's chapter, she develops aspects of the domain and dimensions of university-based ecosystem relating to

entrepreneurship. A typology is presented that articulates roles that schools may pursue in developing their own internal entrepreneurship education ecosystem.

Chapter three shifts to exploration of the current knowledge base through an assessment of textbooks for teaching entrepreneurship. In this chapter by Jack Mason and Ana Cristina O. Siqueira, the authors articulate the number of entrepreneurship textbooks that has multiplied given the increased interest in entrepreneurship programs in higher education. Mason and Sequeira provide an inventory of entrepreneurship textbooks, the topics they cover, and specify emerging topics that are not covered. This is done through their analysis of the content of 57 textbooks. Their study goes on to identify themes that future textbooks and research could target to address the needs of entrepreneurship education looking forward.

In chapters four and five, author groups from National University of Singapore and from three Latin American institutions (ITESM, Mexico; UNICAMP, Brazil; and UPC, Chile) explore how institutional approaches and programs influence student and other community behaviors related to entrepreneurship. In the National University of Singapore paper, authors Yuen-Ping Ho, Pei-Chin Low, and Poh-Kam Wong provide an empirical study that introduces a more refined measure of entrepreneurial engagement combining entrepreneurship intention with actual steps taken to realize that intention. Using data from a survey of 836 students at the National University of Singapore (NUS), the study utilizes linear regression models to examine not only the direct effect of entrepreneurship education program participation on entrepreneurial engagement, but also its possible interaction effect with several psychological constructs drawn from the *Theory of Planned Behavior*.

The Latin American group, Maribel Guerrero, David Urbano, and Eduardo Gajón present "The Internal Pathways That Condition University Entrepreneurship in Latin America: An Institutional Approach," which explores how entrepreneurial university pathways (education and training) have had an impact on student start-up intentions and actions. Adopting the institutional economics approach, the team's research proposes a conceptual model tested with a sample integrated with students enrolled in their universities. The study findings confirm the relevant effect of entrepreneurial university pathways on start-up creation.

Chapter six, "Discerning Opportunity Types: Implications for Entrepreneurial Action and Entrepreneurship Education" by Matthew Wood, Chris Welter, Kendall Artz, and Steven W. Bradley, first introduces

a matrix of opportunity types that delineates between the various combinations of means—ends conceptualizations. The authors then articulate each of the opportunity types as axioms that become the basis for the introduction of a theoretical model that identifies relationships between opportunity types and the actions entrepreneurs take as they pursue the opportunity. The net effect is an improved understanding of how variations in means—ends conceptualizations influence how entrepreneurs interpret their particular opportunity which in turn drives the actions they take as they attempt to turn their vision into reality. This improved understanding has important implications for entrepreneurship education because it suggests that the skills entrepreneurs require to be successful are partially a function of the type of opportunity being pursued.

Chapter seven by Alex Bruton uses the discipline of Informing Science as a lens to carry out an analysis of the discipline of entrepreneurship. “Innovating University-Based Entrepreneurship in Order to Inform Innovation for the 21st Century” focuses first at the level of the entrepreneurship discipline itself, recently advanced frameworks for practice-as-entrepreneurial-learning, and for the scholarship of teaching and learning for entrepreneurship (SoTLE), are all built upon using Gill’s work on academic informing systems to develop a framework that encourages viewing the entrepreneurship discipline as a system that informs entrepreneurial practice.

Chapter eight shifts from specifically university-based programs to examine other teaching models to prepare first-time, early post-launch, and other nascent entrepreneurs in urban environments to inform teaching resource development. The authors, Arturo E. Osorio and Jasmine A. Cordero discuss their concept of “Hybrid Training Model in an Urban Environment.” Their program format allows for progressive learning while encouraging networking among participants. Using a case study, five years of data are presented describing this program and its value for its participants.

Chapter nine revisits the concept of advancing technology transfer and university entrepreneurship by linking them more closely. In this paper, the author Matthew M. Mars draws significantly and interestingly on the history of the land grant movement and ultimately suggests stronger integration of social entrepreneurship as the means to positively affect technology transfer and ultimately use the university institution to improve social conditions. The paper raises important questions about the ability to broadly apply social entrepreneurship approaches, including classroom and applied, and identifies the need to continue the role of private capital in developing

early stage university inventions, creating a balance of value creation and value capture.

In the final chapter, authors Natalie Antal, Bruce Kingma, Duncan Moore, and Deborah Streeter provide a retrospective view of the development of a radiant model of university wide entrepreneurship as deployed in three U.S. universities: Cornell University, University of Rochester, and Syracuse University. The authors examine the history, accelerants, and challenges of the radiant model, of which each of the three universities pursued variations and from which universities today can draw important lessons and advantages.

In this volume, the first in affiliation with the Global Consortium of Entrepreneurship Centers (GCEC), our authors have drawn on historical development of education broadly, and on a discipline-specific basis. Perspective on the positioning curriculum and on understanding the influence and implications of programs on the entrepreneurial learner and researcher are explored. As is consistent with the mission of the Global Consortium of Entrepreneurship Centers, country-specific views have been blended to create broader global awareness of university entrepreneurship. For colleagues that represent virtually every field of study in the university, this collection represents an important and unique insight on the future of entrepreneurship education. The work of this volume will advise and initiate new discussions, from which new volumes will be developed. Importantly, the designation of a series to draw annually on the scholarly insight of the world's entrepreneurship education leaders provides a venue to bring developing and leading ideas to further develop this important field of study.

Sherry Hoskinson
Donald F. Kuratko
Editors

CONTENTS

LIST OF CONTRIBUTORS	vii
INTRODUCTION	
<i>Sherry Hoskinson and Donald F. Kuratko</i>	xi
 BUILDING UNIVERSITY 21ST CENTURY ENTREPRENEURSHIP PROGRAMS THAT EMPOWER AND TRANSFORM	
<i>Michael H. Morris and Donald F. Kuratko</i>	1
 EXPLORING THE CONCEPT OF AN ENTREPRENEURSHIP EDUCATION ECOSYSTEM	
<i>Candida G. Brush</i>	25
 ADDRESSING THE CHALLENGES OF FUTURE ENTREPRENEURSHIP EDUCATION: AN ASSESSMENT OF TEXTBOOKS FOR TEACHING ENTREPRENEURSHIP	
<i>Jack Mason and Ana Cristina O. Siqueira</i>	41
 DO UNIVERSITY ENTREPRENEURSHIP PROGRAMS INFLUENCE STUDENTS' ENTREPRENEURIAL BEHAVIOR? AN EMPIRICAL ANALYSIS OF UNIVERSITY STUDENTS IN SINGAPORE	
<i>Yuen-Ping Ho, Pei-Chin Low and Poh-Kam Wong</i>	65
 THE INTERNAL PATHWAYS THAT CONDITION UNIVERSITY ENTREPRENEURSHIP IN LATIN AMERICA: AN INSTITUTIONAL APPROACH	
<i>Maribel Guerrero, David Urbano and Eduardo Gajón</i>	89

DISCERNING OPPORTUNITY TYPES: IMPLICATIONS
FOR ENTREPRENEURIAL ACTION AND
ENTREPRENEURSHIP EDUCATION

*Matthew Wood, Chris Welter, Kendall Artz
and Steven W. Bradley*

119

INNOVATING UNIVERSITY-BASED
ENTREPRENEURSHIP IN ORDER TO INFORM
INNOVATION FOR THE 21ST CENTURY

Alex Bruton

145

ENTREPRENEURSHIP EDUCATION IN PRACTICE:
THE DEVELOPMENT OF A HYBRID TRAINING
MODEL IN AN URBAN ENVIRONMENT

Arturo E. Osorio and Jasmine A. Cordero

171

EXTENDING THE LEGACY OF THE LAND
GRANT INSTITUTION AS A SOCIAL INNOVATION:
A NEW VISION FOR UNIVERSITY TECHNOLOGY
TRANSFER AND ENTREPRENEURSHIP

Matthew M. Mars

209

UNIVERSITY-WIDE ENTREPRENEURSHIP
EDUCATION

*Natalie Antal, Bruce Kingma, Duncan Moore
and Deborah Streeter*

227

BUILDING UNIVERSITY 21ST CENTURY ENTREPRENEURSHIP PROGRAMS THAT EMPOWER AND TRANSFORM

Michael H. Morris and Donald F. Kuratko

ABSTRACT

At its essence, entrepreneurship has the potential to empower and to transform. The key to both individual and organizational prosperity in a dynamic, threatening and complex world is the ability to think and act in more entrepreneurial ways. A new wave of economic development is sweeping the world, with entrepreneurship and innovation as the primary catalysts. Within the world of education, it can be argued that the at-risk student is the one not prepared for this entrepreneurial age. While every student has the potential, most lack the knowledge, attitudes, skills, and capabilities that define entrepreneurial competence. Over these past four decades, entrepreneurship has grown within universities faster than virtually any other area of intellectual pursuit. And it appears that the pace is accelerating with more universities seeking to develop programs

Innovative Pathways for University Entrepreneurship in the 21st Century
Advances in the Study of Entrepreneurship, Innovation and
Economic Growth, Volume 24, 1–24
Copyright © 2014 by Emerald Group Publishing Limited
All rights of reproduction in any form reserved
ISSN: 1048-4736/doi:10.1108/S1048-473620140000024001

and centers focused on entrepreneurship. Yet, understanding how to build entrepreneurship programs that empower and transform has remained challenging for some institutions. In this chapter, we investigate the development of entrepreneurship programs in universities. More specifically we contend that they should be created for empowerment and transformation across the campus. We describe some of the most common structural forms, outline the different degree programs, and emphasize the empowering and transforming effects of these programs for all the stakeholders of a university.

Keywords: Entrepreneurship education; empowerment; transformation; academic programs; entrepreneurship centers; university entrepreneurship

Empowerment: *"The process of increasing the capacity of individuals or groups to make choices and to transform those choices into desired actions and outcomes"*

Transformation: *"An underlying change in the appearance, character, form or structure of someone or something"*

INTRODUCTION

Entrepreneurship represents a powerful mindset that will be a defining element of the 21st century. At its essence, entrepreneurship has the potential to empower and to transform. The key to both individual and organizational prosperity in a dynamic, threatening, and complex world is the ability to think and act in more entrepreneurial ways. A new wave of economic development is sweeping the world, with entrepreneurship and innovation as the primary catalysts. The entrepreneurial mindset enables individuals to seek opportunities, take risks beyond security, tolerate failure, creatively leverage resources, and overcome obstacles to push an idea to implementation. Importantly, the entrepreneurial mindset is something that can be developed in individuals inside or outside an organization, within start-up or large firms, in profit or not-for-profit enterprises, and in business or nonbusiness activities. Thus, the entrepreneurial mindset represents a guiding light and motivating force for individuals and organizations as they attempt to find and sustain advantage in a complex and chaotic age (Kuratko, 2009).

Within the world of education, it can be argued that the at-risk student is the one not prepared for this entrepreneurial age. A constantly changing

environment provides a continuous flow of potential opportunities *if* an individual can recognize and act upon high potential ideas amid the chaos and cynicism that also permeates such an environment. While every student has the potential, most lack the knowledge, attitudes, skills, and capabilities that define entrepreneurial competence.

As individuals seek to develop the capacity for entrepreneurial thinking, greater expectations are placed on universities to build high-impact entrepreneurship programs. Unfortunately, even as the world overtly turns to entrepreneurship as a force for commercial and social innovation, wealth creation, job generation, and economic growth, universities have failed to keep up. They have often lagged in meeting societal demands for better prepared students and a richer knowledge base. They have been slow to develop the kinds of degree programs, curricula, and research agendas that enable more entrepreneurial individuals and organizations.

Entrepreneurship education has been the subject of numerous studies over the past twenty-five years (e.g., Brush et al., 2003; Dickson, Solomon, & Weaver, 2008; Gartner & Vesper, 1994; Katz, 2003, 2004, 2008; Kuratko, 2005; Solomon, 2007; Solomon, Duffy, & Tarabishy, 2002; Solomon & Fernald, 1991; Solomon, Weaver, & Fernald, 1994; Vesper & Gartner, 1997, 1999). While they note a variety of obstacles and challenges, these studies document a remarkable rate of growth and development in the curricula and related campus-based programs devoted to entrepreneurship and new venture creation. The number of colleges and universities offering courses related to entrepreneurship has grown from a handful in the 1970s to thousands across the globe today (Kuratko, 2014). Large numbers of universities now offer majors, minors, concentrations, certificates, and master's degrees in entrepreneurship. Some of the more prestigious research universities have developed Ph.D. programs to prepare the next generation of entrepreneurship scholars (Morris, Kuratko, & Cornwall, 2013).

Over these past four decades, entrepreneurship has grown within universities faster than virtually any other area of intellectual pursuit. And it appears that the pace is accelerating with more universities seeking to develop programs and centers focused on entrepreneurship. Importantly, these efforts have begun to extend beyond their traditional base within business schools and to reach faculty, students and administrators across the university campus. Kuratko (2005) notes, "Entrepreneurship is new and it is about continual innovation and creativity. It is the future of business schools and it should begin to move into a leadership role" (p. 591). Entrepreneurship programs have indeed risen to a position of greater prominence and stronger influence within universities and schools of business.

Yet, understanding how to build entrepreneurship programs that empower and transform has remained challenging for some institutions.

In this chapter, we investigate the development of entrepreneurship programs in universities. More specifically we contend that they should be created for empowerment and transformation across the campus. We describe some of the most common structural forms, outline the different degree programs, and emphasize the empowering and transforming effects of these programs for all the stakeholders of a university.

STRUCTURING ENTREPRENEURSHIP PROGRAMS

Universities have structured their entrepreneurship-related efforts into programs, institutes, centers, departments, and schools (Solomon, 2007). In addition, we have seen the emergence of “cross campus” initiatives in entrepreneurship with unique structural approaches. Institutions must examine their commitment to entrepreneurship in order to determine not only the scope and substance of an entrepreneurship program, but also the program’s sustainability.

Structure covers a wide range of organizational issues. Chief among these are the location of the entrepreneurship program, its leadership, its governance, and how its budget is controlled. Levels of autonomy and control are usually defined by where the program is located, most notably whether it is a stand-alone unit versus one positioned within an existing department or unit. The abilities to raise money and innovate are greater where there is a stand-alone unit, as is the speed with which new initiatives can be acted upon. This design consideration can also influence the ability to create a distinctive brand and identity for the program.

(1) Academic Stature

Scholarly credibility is enhanced when a program is housed in a unit that has academic standing, as opposed to one that is administrative in nature. Credibility is further affected by the extent to which those running the program have control over creation and management of degree programs and courses. For instance, some centers primarily control co-curricular programming and outreach, but not curriculum development. So the question becomes whether the program is predominately curricular in nature, with courses and degree programs