

R A U L O. C H A O

Darden Graduate School of Business
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(Updated: January 2024)

ACADEMIC AND INDUSTRY POSITIONS

2007 – present University of Virginia, Darden School of Business, Charlottesville, Virginia
Technology and Operations Management, Area Coordinator, 2019 – present
Faculty Fellow, Batten Institute for Innovation and Entrepreneurship, 2018 – present
Associate Professor of Business Administration (tenured), 2014 – present
Assistant Professor of Business Administration, 2007–2013

Spring 2012 IESE Business School (University of Navarra), Barcelona, Spain
Visiting Scholar, Technology & Operations Management Area

2002 – 2007 Georgia Institute of Technology, Atlanta, Georgia
Graduate Research Assistant and Doctoral Candidate

EDUCATION

Georgia Institute of Technology, Atlanta, Georgia
Ph.D. Operations Management – August 2007

University of Miami, Coral Gables, Florida
M.S. Industrial Engineering – May 2002
M.B.A. – December 2001

Johns Hopkins University, Baltimore, Maryland
B.S. Chemical Engineering – May 1995

PUBLISHED RESEARCH PAPERS

Stouras, K. and Hutchison-Krupat, J. and Chao, R. (2022), “The Role of Participation in Innovation Contests”, *Management Science*, Vol. 68, No. 6, p. 4135-4150.

Basole, R., Park, H. and Chao, R. (2019), “Visual Analysis of Venture Similarity in Entrepreneurial Ecosystems”, *IEEE Transactions on Engineering Management*, Vol. 66, No. 4, pp. 568-582

Lenox, M. and Chao, R. (2018), “Toward a Unified Model of Innovation and Technological Change”, *Journal of Enterprise Transformation*, DOI: 10.1080/19488289.2018.1424060, March 2018.

Bendoly, E. and Chao, R. (2017), “How Excessive Stage Time Reduction in NPD Negatively Effects Market Value”, *Production and Operations Management*, Vol. 25, No. 5, p. 812-832.

Oyama, K., Learmonth, G., and Chao, R. (2015), “Applying Complexity Science to New Product Development: Modeling Considerations and Implications”, *Journal of Engineering Technology Management*. Vol. 35, No. 1, p. 1-24.

Chao, R. and K. Lichtendahl and Y. Grushka-Cockayne (2014), “Incentives in a Stage-Gate Process”, *Production and Operations Management*, Vol. 23, No. 8, p 1286.

Hutchison-Krupat, J. and Chao, R. (2013), “Tolerance for Failure and Incentives for Collaborative Innovation”, *Production and Operations Management*, Vol. 23, No. 8, p. 1265.

Chao, R. and Kavadias, S. (2013) “R&D Intensity and the New Product Development Portfolio”, *IEEE Transactions on Engineering Management*, Vol. 60, No. 4, p. 664.

Lichtendahl, K., Chao, R. and Bodily, S. (2012), “Habit Formation from Correlation Aversion”, *Operations Research*, Vol. 60, No. 3, p. 625-637.

Chao, R., Kavadias, S. and Gaimon, C. (2009), “Revenue Driven Resource Allocation: Funding Authority, Incentives, and NPD Portfolio Management”, *Management Science*, Vol. 55, No. 9, p 1556-1569.

Chao, R. and Kavadias, S. (2008), “A Theoretical Framework for Managing the NPD Portfolio: When and How to Use Strategic Buckets”, *Management Science*, Vol. 54, No. 5, p. 907-921.

WORKING PAPERS

Basole, R., Park, H. and Chao, R. (2019), “How Strategic Positioning Drives Funding in Entrepreneurial Ecosystems”, Georgia Institute of Technology Working Paper.

Chao, R. and Erat, S. (2014), “Competition and Effort in Contests with Evaluation Uncertainty”, Darden School of Business Working Paper.

BOOK CHAPTERS, BUSINESS PRESS, AND OTHER PUBLICATIONS

Chao, R. and Lopez-Gottardi, C. (2015) “How America’s Education Model Kills Creativity and Entrepreneurship”, *Forbes*, March 19, 2015. This article has received the highest readership among all Darden contributions to Forbes.

Chao, R. (2012) “Lockheed Martin’s Innovation Via Strategic Buckets”, *The Washington Post*, July 21, 2012

Chao, R. (2012) “The Ins and Outs of Open Innovation”, *Forbes*, May 7, 2012. Reprinted with permission on *crowdsourcing.org* and *Darden Business Publishing*. Named one of the “top ten” articles on open innovation for 2012 by *Open Innovation Community*.

Chao, R. (2012) “To Scale Up a Start-Up Business, Focus on Internal Operations”, *The Washington Post*, March 12, 2012.

Chao, R. (2011) “Why Grassroots Innovation Hasn’t Worked at Microsoft”, *The Washington Post*, May 15, 2011.

Kavadias, S. and Chao, R. (2008) “Resource Allocation and NPD Portfolio Management”, in *Handbook of New Product Development Management*, C. Loch and S. Kavadias (eds.), Elsevier Press, Oxford UK, p. 135-163.

Chao, R. and Kavadias, S. (2004) “Strategic NPD Portfolio Management in Complex Environments”, in *Operations Management as a Change Agent*, L. Van Wassenhove, A. De Meyer, et al. (eds.), INSEAD Press, Fontainebleau France, p. 701-710.

Basole, R. and Chao, R. (2004) “Location-Based Mobile Decision Support Systems and Their Effect on User Performance”, *Proceedings of the Tenth Americas Conference on Information Systems (AMCIS)*, N. Romano et al. (eds.), Association for Information Systems (AIS) Publishers, New York, p. 2870-2874.

TEACHING AND COURSE DEVELOPMENT

First Year Operations Management (MBA core), Darden School of Business. Course Head responsible for curriculum development and management for 5 sections of First Year required operations course. Multiple sections taught from 2007–present (average instructor effectiveness rating of 4.6/5.0).

MBA for Executives (EMBA core), Darden School of Business. Course Head responsible for curriculum development and management for required operations course in the MBA for Executives Program. Multiple sections taught from 2018–present (average instructor effectiveness rating of 4.6/5.0).

Prototyping and Product Development I and II (MBA electives), Darden School of Business. Project-based experiential course offered to second year MBA students. Multiple sections offered from 2008–present (average instructor effectiveness rating of 4.6/5.0).

Technology Commercialization (MBA and Engineering Elective), Darden School of Business. Faculty lead and co-director for cross-disciplinary practicum focused on moving technology from concept to market. This course is the centerpiece of the Cornerstone Technology Acceleration Program.

The Adrenaline Innovation Project (FY MBA elective), Darden School of Business, Spring 2015. One-week intensive course on prototyping and product development offered as an elective for First Year students. Instructor effectiveness rating of 4.8/5.0

General Management and Operations Consulting (MBA elective), Darden School of Business, Spring 2008 (instructor effectiveness rating of 4.7/5.0).

Executive Education: faculty leader and teacher in numerous custom and open-enrolment programs dealing with innovation strategy, new product development, operations management, and general management. Clients include Capital One Financial, 3M Corporation, United Technologies, AES Corp, Saudi-Arabia/Bahrain Institute of Banking, Lockheed Martin Space Systems, McIntire School of Commerce, Henkel Group, CEIBS, and PAD University of Peru.

CASE STUDIES AND OTHER PEDAGOGICAL MATERIAL

“Defining Problems and Opportunities in New Product Development (Part 1)” Darden School of Business Technical Note, Darden Business Publishing (2017).

“Fundamentals of Operations Management”, Darden School of Business Teaching Note, Darden Business Publishing (2017).

“What Is Operations Management?” Darden School of Business Technical Note, Darden Business Publishing (2017).

“Production Systems” Darden School of Business Technical Note, Darden Business Publishing (2017).

“The Production System Frontier”, Darden School of Business Technical Note, Darden Business Publishing (2017).

“The Ins and Outs of Open Innovation”, Darden School of Business Technical Note, Darden Business Publishing, UVA-OM-1495 (2013).

“Prototyping Exercise”, Darden School of Business Classroom Exercise, Darden Business Publishing, UVA-OM-1470 (2012).

“Arcadia Medical Center: Emergency Department Crowding”, Darden Business Publishing, UVA-OM-1468 (2012).

“Innovation Strategy at Microsoft: Clouds on the Horizon”, Darden Business Publishing, UVA-OM-1387 (2011).

“Husk Power Systems: Scaling Up a Start-Up”, Darden Business Publishing, UVA-OM-1415 (2011).

“New Product Development: Search for the Best Alternative”, Darden School of Business Multimedia Exercise, UVA-OM-1414S (2010).

“The Collaborative Innovation Game”, Darden School of Business Multimedia Exercise, UVA-OM-1401S (2009).

“The United States Patent and Trademark Office: Closing the Gap on Pendency in Class 705 Business Methods”, Darden Business Publishing, UVA-OM-1358 (2008).

“United Beverages: Product Development Genius or One-Hit Wonder?”, Darden Business Publishing, UVA-OM-1335 (2007).

INVITED SEMINARS AND PRESENTATIONS

University of Miami, Herbert Business School, Miami FL, “*A Measure of Innovation Distance in Technology Development*”, January 2020

Utah Product Development Mini-Conference, Park City UT, “*Motivating Participation in Innovation Contests*”, February 2018

Utah Product Development Mini-Conference, Park City UT, “*Strategic Positioning and Funding in Global Entrepreneurial Ecosystems*”, February 2017

George Washington University, College of Business, “*A Measure of Innovation Distance*”, April 2015

Arizona State University, Carey School of Business, “*A Measure of Innovation Distance*”, February 2015

Ohio State University, Fisher College of Business, “*Financial Distress and Risky Innovation*”, October 2014

IESE Business School, University of Navarra, Barcelona, Spain, “*Financial Distress and Risky Innovation*”, May 2013

HEC School of Management (Haute Ecole de Commerce), Paris, France, “*Incentives for Complex R&D Projects*”, March 2012

Instituto de Empresa (IE) Business School, Madrid, Spain, “*How Complexity Impacts R&D Portfolio Decisions and Technological Search Distance*”, February 2012

IESE Business School, University of Navarra, Barcelona, Spain, “*Incentives for Complex R&D Projects*”, March 2012

University of Maryland, Smith School of Business, College Park MD, “*Incentives for Complex R&D Projects*”, September 2011

Manufacturing and Service Operations Management (MSOM) Conference, Ann Arbor MI, “*How Complexity Impacts R&D Portfolio Decisions and Technological Search Distance*”, June 2011

Georgia Institute of Technology, Operations Management Seminar Series, “*Incentives for Complex R&D Projects*”, May 2011

Emory University, Atlanta Competitive Advantage Conference, Atlanta GA, “*Incentives for Complex R&D Projects*”, May 2011

3M Corporation, Strategic Business Development Group, Minneapolis MN “*Grassroots Innovation Processes*”, March 2011

Georgetown University, McDonough School of Business, “*Incentives for Complex R&D Projects*”, November 2010

Lockheed Martin Space Systems Company, Denver CO, “*Organization Structure, Incentives, and the Innovation Portfolio*”, May 2010

University of Minnesota, Carlson School of Management, “*R&D Intensity and the NPD Portfolio*”, January 2010

George Mason University, Computational Social Science Research Seminar, “*R&D Intensity and the NPD Portfolio*”, March 2009

Utah Product Development Mini-Conference, Park City UT, “*R&D Intensity and the NPD Portfolio*”, February 2009

Georgia Institute of Technology, Seminar on Complex Networks, “*Strata and Structure in Complex Innovation Systems*”, October 2008

“*Revenue Driven Resource Allocation: Funding Authority, Incentives, and NPD Portfolio Management*” (previously titled: “*Budget Creation and Control for Effective NPD Portfolio Management*”)

Presented at: University of Pennsylvania, Wharton Technology Mini-Conference, April 2007; IESE Business School, Barcelona, Spain, February 2007; University of Virginia, Darden School of Business, February 2007; Texas A&M, Mays College of Business, February 2007; Boston University, College of Management, February 2007; University of South Carolina, Moore School of Business, January 2007; Babson College, January 2007; George Washington University, School of Business, January 2007; Southern Methodist University, Cox School of Management, January 2007; Michigan State University, Eli Broad College of Management, January 2007; University of Texas at Dallas, Dallas TX, May 2006; Vanderbilt University, Owen School of Management, September 2005

BOARD MEMBERSHIP AND ADVISORY SERVICE

Dominion Granite and Marble, Ashburn, VA (www.beautifulgranite.com), Board Member, 2012 – 2019.

La Matera, New York, NY (www.lamaterashop.com), Advisor, 2013 – 2019.

Caribe Juice, Alexandria, VA (www.caribejuice.com), Advisor, 2012 – 2018.

10Thoughts, Boston, MA (www.10thoughts.com), Advisor, 2013 – 2016.

Lumi Juice, Charlottesville, VA (www.lumijuice.com), Co-Founder, 2013

GRANTS, AWARDS, AND HONORS

Darden School of Business, Outstanding Faculty Award Nominee, 2010, 2011, 2013, 2014, 2016.

Technology Entrepreneurship Fellows (TEF) Program, a multi-school graduate education initiative co-developed with School of Engineering and Applied Science, 2016-2018, \$425,000.

The Innovation Genome Project, a joint venture between UVA and Georgia Tech aimed at conducting research on the foundations of innovation, 2016-2018, \$300,000.

Small Business Innovation Research (SBIR) Grant, “LearningJar Passport to Career Online Education Platform”, July-Dec 2013, \$150,000.

Kimberly-Clark Corporation, “Technology Evaluation, Development, and Commercialization: Stage-Gate and Portfolio Review Best Practices”, May-June 2012, \$10,000

Lockheed Martin Space Systems Company, “Best Practices and Current Research in R&D Portfolio Management”, May 2010, \$5,000

3M Corporation Non-Tenured Faculty Research Grant, “Organizing for Innovation and Organic Growth”, 2007-2009, \$45,000.

Georgia Research Alliance and Georgia Tech VentureLab, “Enhancing the Commercialization Potential of New Technologies”, 2005-2007, \$15,000.

The Goizueta Foundation, Doctoral Fellowship, 2002-2006, \$20,000.

The KPMG Foundation, Ph.D. Project Doctoral Students Association, 2005.

EDITORIAL ASSIGNMENTS AND PROFESSIONAL APPOINTMENTS

Editorial Review Board Member, *IEEE Trans. on Engineering Management*, 2010 – present.

Editorial Review Board Member, *Journal of Enterprise Transformation*, 2014 – present.

2007 – Present: Reviewer for *Management Science*, *Production and Operations Management*, *Journal of Operations Management*, *Manufacturing and Service Operations Management*, *Organization Science*, *Research Policy*, *IEEE Transactions on Engineering Management*, *Decision Sciences Journal*, and *MIS Quarterly*.

Associate Editor, *Journal of Operations Management*, 2014 – 2022.

Advisory Committee Member, “Managing Platforms and Ecosystems”, HICSS 2018 – 2019.

Senior Editor, *Production and Operations Management*, 2010 – 2018.

Co-Editor, *Journal of Enterprise Transformation*, Special Issue on “Innovation”, 2016 – 2017.

President, POMS College of Product Innovation and Technology Management, 2014 – 2016.

Editorial Review Board Member, *Journal of Operations Management*, 2012 – 2014.

Associate Editor (Guest), *Management Science*, 2013

Senior Editor (Guest), *Decision Sciences Journal*, 2012

POMS College of Product Innovation and Technology Management, Treasurer, May 2012 – May 2014.

National Science Foundation, Directorate for Social Behavioral and Economic Sciences (SBE), Science and Innovation Policy Program, Proposal Reviewer in 2012.

Expert witness regarding litigation related to technology development and commercialization in a joint venture, May-June 2012.

POMS College of Product Innovation and Technology Management, Vice President of Meetings, 2010 – 2012.

POMS College of Product Innovation and Technology Management, Student Paper Competition Committee, Spring 2012.

INFORMS Technology Management Section (TMS), Doctoral Dissertation Award Committee, Spring 2012.

POMS College of Product Innovation and Technology Management, Mini-Conference Co-Chair, Charlotte NC, November 2011.

INFORMS Annual Meeting, Charlotte NC, November 2011, Track Co-Chair for the New Product Development track

POMS Annual Meeting, Reno, Nevada, May 2011, Track Co-Chair for Product Innovation and Technology Management.

POMS Annual Meeting, Vancouver, Canada, May 2010, Track Chair for Product Innovation and Technology Management.

INFORMS Annual Meeting, Washington DC, October 2008, Track Chair for the New Product Development track.

SERVICE TO THE DARDEN SCHOOL AND UNIVERSITY OF VIRGINIA

PhD and Post-Doctoral Student Advising:

Konstantonos Stouras, Darden School of Business (post-doctoral researcher)

Xiaojin Liu, Darden School of Business (post-doctoral researcher)

Hyunwoo Park, Georgia Institute of Technology (committee member)

Kang Jian, University of Virginia Economics (committee member)

Kyle Oyama, University of Virginia Systems Engineering (committee member)

Jeremy Hutchison-Krupat, Georgia Institute of Technology (committee member)

Darden School of Business, Executive MBA Operating Committee, 2018 – Present.

Darden School of Business, Faculty Advisor for MBA/ME Dual Degree, 2016 – Present.

Darden School of Business, Chair, Research and Course Development Committee, 2019– 2021.

University of Virginia, Licensing and Ventures Group, Faculty in Residence, 2016 – 2020.

Darden School of Business, Research and Course Development Committee, 2017 – 2018.

University of Virginia, School of Medicine, workshop on product development and design thinking, 2017

Darden School of Business, Academic Standards Committee, 2010 – 2012 and 2016 – 2017.

University of Virginia Licensing and Ventures Group, Advisory Panel Member, January 2011 – 2015.

First-Year Operations Core MBA, Course Head, 2014 – 2016.

Darden School of Business, Full-Time MBA Program Committee, 2014 – 2016.

Batten Institute for Entrepreneurship and Innovation, Incubator Selection Committee, 2011 – 2015.

Darden / Cambridge Entrepreneurship and Innovation Conference, Organizing Committee, 2011 – 2014.

Darden School of Business, Scholarship Committee, 2012 – 2014.

University of Virginia Jefferson Scholars Foundation, Jefferson Fellows Selection Committee, 2013 – 2014.