



**13th Annual
SMITH ENTREPRENEURSHIP RESEARCH CONFERENCE**

Thu-Sat, April 27-29, 2017

Conference Co-Chairs:

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Advisory Board:

Howard Aldrich, U-North Carolina
Kathleen Eisenhardt, Stanford
Will Mitchell, Toronto
Toby Stuart, UC-Berkeley

Conference Location:

Room 1505, Van Munching Hall
Smith Business School
The University of Maryland
College Park, MD 20742

Guest Lodging:

Marriott Inn & Conference Center
3501 University Drive E
Hyattsville, MD 20783
(301) 985-7385

Supported by:

Department of Management & Organization, University of Maryland
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Dingman Center for Entrepreneurship, Robert H. Smith School of Business

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**13th Annual Smith Entrepreneurship Research Conference
Conference Program**

8th Kauffman Doctoral Consortium

Thu, April 27, 2017	
12:00-1:00pm	Registration & Lunch , Room 2517 Van Munching Hall
1:00-2:00pm	THOUGHT LEADERSHIP TALK , Room 2511 Van Munching Hall <ul style="list-style-type: none"> • Serguey Braguinsky (Maryland/Smith), “Entrepreneurship: Some suggestions for a research agenda”
2:00-3:00pm	ROUNDTABLE DISCUSSIONS – PHD STUDENTS’ RESEARCH <ul style="list-style-type: none"> • 4 Roundtables (4-5 students + 1-2 faculty per table)
3:00-3:30pm	Break
3:30-4:30pm	ROUNDTABLE DISCUSSIONS – PHD STUDENTS’ RESEARCH <ul style="list-style-type: none"> • 4 Roundtables (4-5 students + 1-2 faculty per table)
4:30-5:30pm	THOUGHT LEADERSHIP TALK , Room 2511 Van Munching Hall <ul style="list-style-type: none"> • Ben Hallen (UW/Foster), "The Interesting Middle: Looking Beyond High-growth, VC-backed Startups"
5:45pm onwards	COCKTAILS AND DINNER , 3 rd Floor Atrium, Van Munching Hall

Research Conference

Fri, April 28, 2017 – Room 1505, Van Munching Hall	
8:00-8:30am	Registration & Continental Breakfast
8:30-10:00am	SESSION 1: THE ROLE OF KNOWLEDGE FRONTIERS <ul style="list-style-type: none"> • Neil Thompson (MIT), “Lightening the burden of knowledge: How tools help expand the frontiers of science” (20 mts) - <i>with Philipp Pfingstgag (TUM/Munich), Aditya Kunjapur (MIT), & Joachim Henkel (TUM/Munich)</i> Comments: David Waguespack (Maryland) (10mts) • Florenta Teodoridis (USC/Marshall), “Can specialization foster creativity? Mathematics and the collapse of the Soviet Union” (20mts) – <i>with Keyvan Vakili (LBS) & Michael Bikard (LBS)</i> Comments: Serguey Braguinsky (Maryland) (10mts) • Open Discussion (30mts)
10:00-10:30am	Break
10:30am-12:00pm	SESSION 2: INDIVIDUAL EFFECTS <ul style="list-style-type: none"> • Tiantian Yang (Duke/Sociology), “Entrepreneurship and occupational prestige” (20 mts) – <i>with Christopher I. Rider (Georgetown), & Karl Wennberg (Linköping)</i> Comments: Ben Campbell (OSU) (10mts) • Elena Kulchina (Duke/Fuqua), “Entrepreneur – A jockey or a horse owner?” (20mts) – <i>with Pernille Gjerløv-Juel (Aalborg)</i> Comments: Anil Gupta (Maryland) (10mts) • Open Discussion (30 min)
12:00-1:30pm	Lunch – Room 2517 Van Munching Hall
1:30-3:00pm	SESSION 3: PANEL DISCUSSION – ENTREPRENEURSHIP EDUCATION: NURTURING HUMAN CAPITAL Session Chair and Moderator: Rajshree Agarwal (Maryland)

	Panelists: Elana Fine (Maryland), Derek Ozkal (Kauffman), Siri Terjesen (American University), Tsega Belachew (African Lead. Univ.)
3:00-3:30pm	Break
3:30-5:00pm	<p>SESSION 4: NEW VENTURE ECOSYSTEMS</p> <ul style="list-style-type: none"> • Laura Doering (McGill), “From the ground up: Housing assignments, informal business, and gender in a Colombian housing project” (20mts) – <i>with Christopher Liu (Toronto)</i> Comments: Ethan Mollick (Wharton) (10mts) • Rembrand Koning (HBS), “Does management spillover across firms? A field experiment in the Indian startup ecosystem” (20mts) – <i>with Aaron Chatterji (Duke/Fuqua), Solene Delecourt (Stanford), & Sharique Hasan (Stanford)</i> Comments: Chris Rider (Georgetown) (10mts) • Open Discussion (30mts)
5:30 – 6:45pm	Cocktails: The Common at Marriott Inn & Conference Center
7:00 – 9:00pm	Dinner: Marriott Inn & Conference Center, Room 1312 Keynote: Howard Aldrich (UNC/Chapel Hill)

Sat, April 29, 2017 - Room 1520, Van Munching Hall	
8:00-8:30am	Continental Breakfast
8:30-10:30am	<p>SESSION 5: BUILDING AND DEPLOYING CAPABILITIES</p> <ul style="list-style-type: none"> • Seth Carnahan (Michigan/Ross), “All in the tails? Pre-entry knowledge and the distribution of startup performance (20mts)” – <i>with Rajshree Agarwal (Maryland), Ben Campbell (Ohio State), and Joonkyu Choi (Maryland)</i> Comments: Jim Wade (GWU) (10mts) • Annamaria Conti (Georgia Tech), “Venture capital investment strategies under financing constraints: Evidence from the 2008 financial crisis” (20mts) – <i>with Nishant Dass (Georgia Tech), and Stuart J.H. Graham (Georgia Tech)</i> Comments: Ben Hallen (UW/Foster) (10mts) • Mahka Moeen (UNC/Chapel Hill), “Filling capability gaps in nascent industries: Using external sourcing modes for core and complementary capabilities” (20mts) - <i>with Will Mitchell (Toronto)</i> Comments: Brent Goldfarb (Maryland) (10mts) • Open Discussion (30 min)
10:30-11:00am	Break
11:00am-12:30pm	<p>SESSION 6: INNOVATION ECOSYSTEMS</p> <ul style="list-style-type: none"> • Doug Hannah (Texas/Austin), “Cooperative strategy and value capture in innovation ecosystems” (20mts) Comments: Atul Nerkar (UNC/Chapel Hill) (10mts) • Eunhee Sohn (Georgia Tech), “Opportunities and incentives: How academic scientists respond to the rise of industry R&D” (20mts) Comments: Waverly Ding (Maryland) (10mts) • Open Discussion (30 min)
12:30pm -	Brown Bag Lunch & Close

2017 - Smith Entrepreneurship Research Conference

Faculty Paper Abstracts (Alphabetically by First Author's Last Name)

All in the tails? Pre-entry knowledge and the distribution of startup performance

Seth Carnahan (Michigan/Ross) - with Rajshree Agarwal (Maryland), Ben Campbell (Ohio State), and Joonkyu Choi (Maryland)

Studying high technology startups in the United States, we examine the relationship between the pre-entry knowledge of the founder and variability in startup performance (i.e. the extent to which the startup dissolves or experiences extreme positive performance). In examining pre-entry knowledge, we distinguish between the classic within-industry startup and startups that enter from other high tech industries outside of the startup industry, who we call high tech outsiders. We find that high tech outsiders are more likely to dissolve than within-industry startups, but, conditional on survival, high tech outsiders are more likely to experience extreme positive growth. Our results expand traditional conceptualizations of the pre-entry knowledge of startup teams while emphasizing the need to examine the full distribution of startup performance.

Venture capital investment strategies under financing constraints: Evidence from the 2008 financial crisis

Annamaria Conti (Georgia Tech) - with Nishant Dass (Georgia Tech) & Stuart J.H. Graham (Georgia Tech)

This paper employs the 2008 financial crisis as an empirical setting to show that, while predictably venture capitalists (VCs) reduce investment, they lean towards startups operating in the VCs' core sectors. These effects are driven by more-experienced VCs, and are strongest for early-stage startups. These findings are robust to controlling for VC-times-startup fixed effects, and time-variant VC and startup characteristics. Complementing these results, we find superior *ex post* performance among crisis-funded startups operating in more-experienced VCs' core sectors.

From the ground up: Housing assignments, informal business, and gender in a Colombian housing project

Laura Doering (McGill) – with Christopher Liu (Toronto)

Research on the spatial distribution of income has generally focused on between—rather than within—neighborhood differences. In this paper, we propose a novel mechanism that patterns the distribution of work and income in poor communities: the ability to use one's home as an economic resource. Using randomized housing assignments in a Colombian housing complex, we find that individuals assigned to ground-floor apartments have a higher likelihood of running informal businesses than those on upper floors. These ventures also result in significant boosts to income, raising ground-floor business owners above the poverty line. Moreover, we find that these effects are pronounced among women, who face structural constraints to working outside the home. Taken together, our findings offer a new view on the emergence of income inequality and contributes to our understanding of neighborhoods, stratification in developing countries, and the gendered use of space.

Cooperative strategy and value capture in innovation ecosystems

Doug Hannah (Texas/Austin)

Firms in ecosystems depend on one another to provide the components that together comprise valuable solutions. As a result, the performance of individual firms may be limited by technological challenges faced by their partners. Although prior research has documented firms working with partners to resolve

such challenges, less is known about the conditions under which these cooperative strategies are viable. In this paper, I examine two strategies by which firms can collaboratively address external bottlenecks: improving partner capabilities, and collaboratively introducing system innovations. Through a formal game theoretic model, I find that the viability of each strategy depends on the interaction between firm capabilities, technological uncertainty, and opportunities afforded by modifying component boundaries. Through this analysis, I contribute to a growing body of research on ecosystems and cooperative strategy.

Does management spillover across firms? A field experiment in the Indian startup ecosystem

Rembrand Koning (HBS) – with Aaron Chatterji (Duke/Fuqua), Solene Delecourt (Stanford), & Sharique Hasan (Stanford)

Management styles and practices are important determinants of firm performance. Yet, substantial variation exists across organizations with regards to management, suggesting frictions in the broader diffusion of management knowledge. We argue that peer networks may allow for the diffusion of productive management across firms. Using a randomized field experiment with 100 high-growth technology firms, we show that founders who received advice from other founders with more “hands-on” or “intensive” management styles, were more likely to reorient their own management activity, and subsequently experience lower employee attrition and higher rates of firm survival 8-months after the intervention. For founders who already had a more intensive management style themselves, these interactions also increase top-line employee growth via an increase in hiring rates. Our study demonstrates that management can indeed diffuse across young firms via networks, though the process might be uneven and slow.

Entrepreneur – A jockey or a horse owner?

Elena Kulchina (Duke/Fuqua) – with Pernille Gjerløv-Juel (Aalborg)

The business literature has long been concerned with understanding why people become entrepreneurs. This literature, however, has mixed together two important issues—founding a new business and being the right person to operate it. Up until recently, entrepreneurship scholars have largely believed that founders run their ventures personally. Yet it is not clear from either a theoretical or an empirical standpoint why this should be the case. Indeed, a founder may not always be the best person to manage his or her business. Entrepreneurs are often criticized for having limited business expertise and placing personal motives ahead of financial returns. In line with this, recent empirical studies demonstrate that up to 40 percent of start-ups have hired CEOs. Whether founders are optimal managers for their firms strongly depends on their motives for operating the firm personally, i.e., whether their decision is driven by expected non-pecuniary benefits of management or by more strategic considerations. In our paper, we use fine-grained data on entrepreneurs in Denmark to examine what motivates them to operate their firms personally as opposed to hiring a manager. We find that while non-pecuniary motives play a role in the founders’ decision to operate their firms personally, opportunity cost of owner-management and relevant prior experience are also important. Thus, entrepreneurs put significant emphasis on the characteristics that would improve firm performance and their overall wealth. Our findings are similar for entrepreneurs in high-technology and low-technology sectors as well as for founders who hire non-family and family managers. We also observe that when founders do not manage their firms personally, they typically work full time at another firm or play a non-managing role in their own venture. In our subsequent analysis, we investigate how these two types of non-managing founders differ, providing further insights into their behavioral motives.

Filling capability gaps in nascent industries: Using external sourcing modes for core and complementary capabilities

Mahka Moeen (UNC/Chapel Hill) - with Will Mitchell (Toronto)

This paper studies pre-entry sourcing of core technical capabilities and complementary market-related capabilities before firms enter a new industry and compares the patterns to post-entry activity. We examine the frequency and timing of alliances and acquisitions during the incubation and early commercialization periods of a nascent industry. We identify four sourcing patterns within the agricultural biotechnology industry from 1980 to 2010. First, pre-entry external sourcing of core and complementary capabilities via alliances and acquisitions is common, with greatest emphasis on alliances and core capabilities; second, eventual entrants source more actively than pre-entrants that do not enter; third, some key sourcing strategies change following entry, particularly in the use of alliances for core and complementary capabilities; fourth, sourcing of core and complementary capabilities are complements during the incubation period, with increasing emphasis on complementary capabilities as firms gain experience. The patterns provide a base for developing four propositions to help shape research on business entry and reconfiguration.

Opportunities and incentives: How academic scientists respond to the rise of industry R&D

Eunhee Sohn (Georgia Tech)

This paper explores the individual antecedents that incentivizes university scientists to engage in industry-relevant research. Exploiting the agribusiness incumbents' entry into plant biotechnology R&D, we investigate individual changes in the rate and direction of research in response to the local industry shocks. The difference-in-differences estimation on a matched sample of plant biologists show that younger and less prominent scientists experience a greater productivity increase in industry-relevant fields, accompanied by a relative decline in non-industry-relevant research. We discuss how ex-ante status and resources may shape the individual incentives to exploit proximate opportunities provided by the local industry.

Can specialization foster creativity? Mathematics and the collapse of the Soviet Union

Florenta Teodoridis (USC/Marshall) – with Keyvan Vakili (LBS) & Michael Bikard (LBS)

Past research emphasizes that high levels of specialization can decrease creative performance because creative workers end up reusing familiar components in familiar ways. We argue that this view of specialization might be overly pessimistic. At times, knowledge domains evolve fast – that is, new components become rapidly available. In such situations, deep expertise places specialists in an advantageous position to identify emerging creative opportunities. To test our theory, we exploit the collapse of the Soviet Union as a natural experiment that suddenly moved the frontier in some domains of theoretical mathematics more than in others. We find that specialists in domains that advanced the most produced not only more publications but also more breakthroughs than their generalist colleagues did. Specialists also increased their rate of collaboration. Thus, specialization seems to be a particularly advantageous approach to creative work in fast-evolving knowledge domains.

Lightening the burden of knowledge: How tools help expand the frontiers of science

Neil Thompson (MIT) - with Philipp Pfingstgag (TUM/Munich), Aditya Kunjapur (MIT), & Joachim Henkel (TUM/Munich)

This paper looks at how tools help scientists push out the frontiers of knowledge in the context of DNA synthesis, a fast-growing area that is allowing the creation of new genetic parts and even synthetic life.

Jones (2009) argued that scientists face a 'Burden of Knowledge', wherein the increasing amount of knowledge needed to reach the frontier leads them to either ever-longer educations or ever-narrower specializations. This paper argues for a countervailing trend, the development of tools. We argue that tools, be they theoretical insights, scientific instruments, etc., increase research productivity. They also automate knowledge so that scientists can use it more easily. For example, virtually all of the knowledge

of how computers work is hidden from typical users, who nonetheless can take advantage of much of what they have to offer.

This paper extends the model of Jones to incorporate tools and show how this impacts long-term growth rates in the economy. We then test this theory in an empirical setting: DNA synthesis, where evolving tools are rapidly changing the feasibility and cost of writing new pieces of DNA. By taking advantage of the exogenous progress in this tool, we produce causal estimates for how much tools help scientists to push out the frontier of knowledge.

Entrepreneurship and occupational prestige

Tiantian Yang (Duke/Sociology) – with Christopher I. Rider (Georgetown), & Karl Wennberg (Linköping)

We theorize how entrepreneurship facilitates status attainment and specifically propose that organizational founders attain greater status, but earn less, as entrepreneurs than they would by remaining in employment. Career history analyses of observationally-equivalent Swedish workers who do and do not found new organizations demonstrate how founders attain greater occupational prestige both during and after spells as entrepreneurs, despite earning less than they do as employees. Further probing ability-signaling and skill-acquisition mechanisms, our analyses suggest that the prestige-enhancing effects of founding are largely attributable to occupational skills that founders acquire in entrepreneurship before returning to employment. We discuss implications for research on the entrepreneurial wage penalty and on the role of organizations in societal stratification.