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University of Kent  
School of Economics Discussion Papers

# **Lost in the Storm: The Academic Collaborations that Went Missing in Hurricane Isaac**

Raquel Campos, Fernanda L. L. de Leon and Ben McQuillin

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# Lost in the Storm: The Academic Collaborations that Went Missing in Hurricane Isaac\*

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April 2017

## Abstract

By exploiting the cancellation of the 2012 American Political Science Association Annual Meeting, we investigate the role of conferences in facilitating academic collaboration. We assembled datasets comprising 17,468 academics and 86 million pairs of conference participants. In difference-in-differences analysis, we find the conference cancellation led to a decrease in individuals' likelihood of co-authoring an article with another attendant by 18 percent. Moreover, collaborations formed among attendants of (occurring) conferences are associated with more successful co-publications: an effect which is sharpest for teams that are new or non-located. These findings are novel and demonstrate the importance of conferences in scientific production.

**Keywords:** conference effects, collaboration, formation of teams, production in science

**JEL:** O31, I23, D02

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## Non-technical summary

When an academic participates in a large conference, her likelihood of subsequently writing a paper with at least one participant at the conference increases by one-sixth (close to 18%). Moreover, it seems that conferences improve the quality of matching among co-authors, leading to papers that are published in higher-ranked journals.

These findings are documented in the paper “Lost in the Storm: The Academic Collaborations that Went Missing in Hurricane Isaac”. This is part of an ongoing programme of work, funded by the Leverhulme Trust, in which economists at University of Kent and University of East Anglia utilise a *natural experiment* to understand the role of conferences in academic and scientific production generally.

In late August 2012, the imminent landfall of *Hurricane Isaac* forced the cancellation - at less than 48 hours' notice - of an important event in political scientists' annual calendar: the American Political Science Association (APSA) Annual Meeting. By analysing the output patterns - in terms of published and working papers - among 17,468 academics that attend conferences (including academics scheduled to have participated in this cancelled conference, in previous editions of the APSA meeting and/or editions of a similar Annual Meeting), the authors estimate the effects of conferences on the likelihood of academics to form new co-authorships, and provide evidence for the role of conferences as important facilitators for academic networking.

The collaborations that were “lost” (because of the conference cancellation) were disproportionately those that would have been between academics affiliated to geographically distant institutions and whose existing research was closely related. These seem to be recipes for better research, as the remaining collaborations that did form (among participants that did not meet in the cancelled conference) led to papers appearing in journals ranked, on average, 5 places lower.

These results speak to the role of conferences and, more generally, of *network* constraints in preventing the formation of efficient scientific teams. It is already known that most academic and scientific papers are written by collocated authors, but some questions remain unanswered. First: does inter-institutional collaboration *make* better science, or is it rather adopted as a research strategy specifically for the most promising and ambitious projects? The results in the present paper suggest strongly the former. Second: do academics and scientists work so predominantly in collocated teams due to preference, or because they are in some way constrained from forming the more productive inter-institutional collaborations. The results in this latest study support the network-constraints explanation and suggest that conferences perform an important function in alleviating these constraints, by allowing academics to meet new collaborators.

# 1 Introduction

A phenomenon observed across all scientific disciplines – as noted for example by Wuchty et al. (2007) – is the increasing prevalence of collaborative endeavour. An existing literature (Jones, 2009; Gans and Murray, 2014; Agrawal et al., 2016) has attributed this trend to the increasing challenges associated with pushing further outwards at the existing frontiers of knowledge, and of producing work generally at the standards required for success in an increasingly competitive academic environment. Co-authors bring, to a project, a wider pool of ideas and of specialist expertise, and scientific productivity therefore depends on co-authors becoming efficiently matched. And yet, there is also strong evidence, provided in Freeman and Huang (2015), that some of the most productive scientific collaborations arise the least readily.

In this paper, we measure the extent to which academic conferences facilitate collaborations generally, and productive collaborations particularly. By exploiting a “natural experiment” - the last-minute *cancellation*, due to “Hurricane Isaac”, of the 2012 American Political Science Association (APSA) Annual Meeting - we are able to estimate the number and character of the collaborations that “went missing”. From these estimates we draw inferences about the specific role of conferences in the formation of new scientific work, and also, more generally, about the role of network constraints in causing inefficient biases in co-author matchings.

The APSA meeting gathers around 3,000 presenters every year, and by the time of its cancellation in 2012 the conference program had been arranged and published. Our main hypothesis is that the cancellation decreased individuals’ chances of collaborating with another conference participant. We run standard difference-in-difference regressions, examining the likelihood of collaboration among participants in the APSA conference in the 2009-2012 editions and, using as ‘control’ the chance of collaboration among participants attending a comparator conference (the Midwest Political Science Association Annual Meeting). To conduct this analysis, we assembled new datasets including 17,468 academics (attendants of the relevant meetings) and close to 86 million dyads of participants. This sample is representative of research active academics in the field of political science, accounting for 22% of published authors during the period. We matched these datasets to co-authored working papers and published articles to infer the occurrence of a collaboration.

We find that the 2012 APSA meeting cancellation led to an eighteen percent decrease in

individuals' likelihood of co-authoring an output with another conference participant, and moreover that it was specifically the likelihood of collaborating with academic affiliated to a *different* institution that fell. In our regressions, we include controls for individual fixed effects and several covariates to control for individuals' time-varying productivity and propensity to collaborate. Our findings are robust to several econometric specifications and sample classifications. (Moreover, in the Appendix, we provide evidence that there were no systematic changes in attendants' characteristics across 'treatment' and 'control' conferences in the year of the cancellation.)

We also find that collaborations forged between the attendants of occurring conferences lead to better publication outcomes. Of collaborations manifested as journal publications, those that were among academics scheduled to attend the cancelled meeting appeared, on average, in journals ranked 5 places lower than those that were among academics that attended a conference that actually took place. Pairs of collaborators that are not colocated or have not co-authored a paper together before, are the ones that benefit most from conferences, in terms of improving their ranking of publication. This premium may be driven by academics finding more suitable co-authors in academic meetings, or by already nascent collaborations benefitting from the face-to-face interaction afforded by the conference. In either of these cases, our results demonstrate that there are strikingly substantial, positive effects of relatively brief face-to-face meetings in the success of academic papers.

To our knowledge, this is the first paper that quantifies effects of conferences in the formation of academic collaborations, using experimental evidence.<sup>1</sup> Chai (2014) also infers positive conference effects by comparing patterns of collaboration among attendees of the Gordon Research Conferences with patterns among a matched group of non-conference attendees. However, by using a natural experiment we offer here an identification strategy that more definitively avoids issues such as endogeneity of the acceptance status or decision to attend a conference. Outside of a typical conference setting, Boudreau et al. (2017) implemented a field experiment at Harvard Medical School to understand how search costs (within one institution) affect the formation of collaborations. Within a grant opportunity informational event, individuals were randomly assigned to small brainstorm sessions, and participants were subsequently 75%

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<sup>1</sup>Previous papers have however used experimental data to understand other forms of conference effect. Leon and McQuillin (2016) used the same data and setting as the current paper to look at conference effects on the academic impact (as measured by citations) of presented papers. Blau et al. (2010) investigated the success of CeMENT – a mentoring workshop, arguably similar to a small conference, for female assistant professors – in increasing participants' publications and successful grant publications, based on randomized controlled trial data.

more likely to write a grant application with an academic assigned to the same brainstorm room than with someone assigned to a different room.

Our results also contribute to a broader and growing literature on the determinants of the formation of academic collaborations.<sup>2</sup> A strand within this literature seeks to understand the role of communication costs and network constraints in determining patterns of academic collaborations.<sup>3</sup> Agrawal and Goldfarb (2008) and Ding et al. (2010) show that the introduction of Bitnet (an early version of the Internet) led to substantial increases in the rates of multi-institutional collaborations. Concomitantly, as shown in Kim et al. (2009), the research productivity effects of being placed in a top university diminished, as academics' dependency on colleagues, as possible co-authors, declined. Even so, it seems that opportunities for face-to-face interaction remain important: Boudreau et al. evidence this, and Catalini et al. (2016) show that decreasing air travel costs have also facilitated collaboration. A survey conducted by Freeman et al. (2015) suggests that, still, most academic collaborations are among (presently or previously) colocated authors, and therefore that network constraints remain significant in affecting collaborations. Our results suggest that even a single conference relaxes these constraints with discernible effect.

We develop the remainder of the paper as follows. In section 2 we explain the data and describe the natural experiment. In section 3 we present the estimates of conference effects. We conclude, in section 4, with some interpretative discussion.

## **2 Data**

### **2.1 Background**

The American Political Science Association (APSA) is a professional association of political science in the United States, and it publishes one of the preeminent journals in its field: *The American Political Science Review*. Its Annual Meeting is held immediately preceding Labor Day (in September) and gathers close to 3,000 presenters, from more than 700 institutions. Participants present working papers in fifty two main themes encompassing a very broad spectrum of approaches and research topics across the field of political science.

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<sup>2</sup>See Furman and Gaule (2013) and Freeman et al. (2015), for useful surveys.

<sup>3</sup>Another part of the literature – see Fafchamps et al. (2010) and Freeman and Huang (2015) – examines the role of academics' preferences in determining collaborations.

The 2012 APSA meeting was due to take place in New Orleans and was scheduled to start on August 30. However, it was cancelled at less than 48 hours' notice due to the approach of "Hurricane Isaac". By the time of this cancellation, and indeed well before any genesis of tropical cyclone Isaac itself, the conference program was finalised and publicly available.<sup>4</sup> The cancellation generated a group of participants that did not experience the network benefits of the meeting. Our main hypothesis is that the individuals within this group (named in the 2012 APSA Meeting Programme) became less likely to form subsequent in-group collaborations than individuals in the groups that attended occurring conferences.

To quantify conference impacts, we conduct difference-in-differences regressions using data on conference participants from the 2009-2012 editions. This strategy is similar to the one we use in Leon and McQuillin (2016). We use, as a baseline group, collaborations formed among participants at a comparator conference: the Midwest Political Science Association (MPSA) Annual Meeting. The MPSA is also a professional association of political science scholars in the United States, and it publishes another leading journal within the discipline: *The American Journal of Political Science*. The APSA and the MPSA meetings are the largest conferences in the field of political science. They are similar in profile and almost identical in format. Each is a four-day event consisting of panels, posters, workshops, evening sessions, roundtables, and panel sessions including four presenting papers, discussants and a chair. Moreover, because the MPSA meeting (held in April) precedes the APSA meeting, the 2012 MPSA attendance would not have been impacted by the APSA cancellation.

## 2.2 Data Sources and Sample

We collected information on APSA and MPSA conference participants, from the meeting programmes available on the respective associations' websites.<sup>5</sup> The programmes describe, for each session within the conference, the names and affiliations of the session chair(s) and discussants(s), and for each presenting paper within the session the names and affiliations of all of the authors. Also recorded is the *theme* with which the session is associated, and title (sub-

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<sup>4</sup>The synoptic history for Hurricane Isaac is provided in Berg (2013). An atmospheric trough that started developing west of Africa on August 16-17, manifested to a "tropical storm" by August 21. A state of emergency was declared for Louisiana on August 26.

<sup>5</sup>In addition, the MPSA provided us with programme information in a cleaner electronic format.



theme) of the session.<sup>6</sup>

For presenting papers with more than one author, the conference programmes do not distinguish the presenting author, and therefore in our main analyses we will have included some “conference participants” who, as non-presenting co-authors, did not actually attend. Our main sample includes all individuals named in panel sessions, as an author, a chair or a discussant. We also present the results for the subset of “sure participants”: the 69 percent of conference participants who appear within the programme as a sole-author, chair or discussant.<sup>7</sup>

The assembled dataset comprises 39,586 conference-authors and 17,468 individuals. (They often attend many conferences. An individual who attended three conferences appears, in our dataset, as one individual - “Adam Adams” - and as three conference-authors: “APSA2009-Adam Adams”, “MPSA2011-Adam Adams”, and “APSA2012-Adam Adams”.) In our analysis, we examine the data at two levels: (i) at the conference-author level in which the outcome is an indicator for whether the individual comes to collaborate with someone in the same conference, and (ii) and at the conference-author pair (dyad) level, where the outcome is whether the pair collaborates after the conference (and also whether the pair generates an output with specific characteristics). The number of observations is described in Table 1. For example, the 2009 APSA Meeting entailed a total of 4,007 participants (column 1) and therefore  $4,007 \times 4,006/2 = 8,026,021$  potential collaboration dyads (column 2). However, we ignored collaborations formed among co-authors in a paper presented in the attending conference. This was to avoid the risk of misinterpreting a conference effect on the publication outcome of the presented paper as an impact on the formation of new work (the phenomenon of interest in

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<sup>6</sup>The APSA meeting has 52 main theme panels (that contain 90% of the articles) and 70 remaining themes that vary per year. The main theme sections are Political Thought and Philosophy, Foundations of Political Theory, Normative Political Theory, Formal Political Theory, Political Psychology, Political Economy, Politics and History, Political Methodology, Teaching and Learning, Political Science Education, Comparative Politics, Comparative Politics of Developing Countries, The Politics of Communist and Former Communist Countries, Advanced Industrial Societies, European Politics and Society, International Political Economy, International Collaboration, International Security, International Security and Arms Control, Foreign Policy, Conflict Processes, Legislative Studies, Presidency Research, Public Administration, Public Policy, Law and Courts, Constitutional Law and Jurisprudence, Federalism and Intergovernmental Relations, State Politics and Policy, Urban Politics, Women and Politics Research, Race, Ethnicity, and Politics, Religion and Politics, Representation and Electoral Systems, Political Organizations and Parties, Elections and Voting Behavior, Public Opinion, Political Communication, Science, Technology, and Environmental Politics, Information Technology and Politics, Politics, Literature, and Film, New Political Science, International History and Politics, Comparative Democratization, Human Rights, Qualitative and Multi-method Research, Sexuality and Politics, Health Politics and Policy, Canadian Politics, Political Networks, Experimental Research.

<sup>7</sup>Within the two conferences, panel sessions concentrate most of the presenting authors. 70.8% of presenting papers are single-authored. By including individuals named in co-authored papers in our analysis, we may underestimate the conference effect, because we are likely to include authors who did not attend the conference. However, by excluding these papers we also underestimate the conference effect because we thereby exclude individuals that have a higher intrinsic likelihood to work in teams.

this paper).<sup>8</sup> Hence, when analysing the data at the dyad level, we disregarded these pairs (14,252 dyads across eight conferences), and focused on the remaining number, shown in column 3. This exclusion comes at the expense of shutting down another possible channel of conference effect: on ongoing collaborations that might get reinforced, and turned into new research projects, because of feedback and suggestions offered during the conference.

### *Table 1*

To look for collaborations, we assembled a dataset of working papers and published papers in political science, using the Social Science Research Network (SSRN) and the Web of Science (WoS). The set of working papers comprises all papers posted in the SSRN Political Science Network from January 1996 to September 2015. The set of published papers comprises all articles published in the 155 WoS Political Science journals and in the top 20 WoS journals in Economics, Sociology, Law, History, and International Relations from 2004 to 2016.<sup>9</sup> The list of journals is detailed in the Appendix. The sets include 113,895 working papers and 199,692 published papers respectively.

## **2.3 Linking Datasets**

We linked the SSRN and WoS data to conference participants using individuals' first and last name. A complication, in using this rule, is that some names are not unique among published authors or among conference participants, potentially leading to misattributions of collaborations (based on co-publications). There are, within our set of conference participants, 493 first-name/last-name combinations that appear with more than one associated middle initial across the set of all conference participants and WoS authors. (For example, we may have both a Jenny A Jones and a Jenny B Jones among the conference participants, or - more frequently - a Jenny Jones among the conference participants and both a Jenny A Jones and a Jenny B Jones among the WoS published authors.) We categorised these names as "ambiguous" and checked by hand all co-publications involving someone with an ambiguous name.

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<sup>8</sup>In Leon and McQuillin (2016), we document other effects of the 2012 APSA cancellation: articles became less likely to be cited. We also find some evidence that articles become less likely to be published due to the cancellation.

<sup>9</sup>The additional WoS categories were chosen because they were the most frequent, aside from Political Science, among the publications of a random sample of conference attendants.

## 2.4 Measures of Collaboration and Explanatory Variables

Our main dependent variable and measure of collaboration is the existence of a co-authored paper after the conference, in a form of a SSRN working paper or a WoS published paper. A key decision was the time frame within which to look for such collaborations. Our main interest is in collaborative outputs that may have been in some sense generated by a conference, and we judged that papers appearing very soon after a conference (less than one year for a working paper, or less than approximately two and a half years for a published paper) were likely to reflect work that had been substantially completed by the time of the conference itself. We therefore consider, for each conference, working papers appearing in a two-year window commencing one year after the conference, and published papers appearing in the two complete calendar years commencing between two and three years after the conference. In Table A1 in the Appendix, we provide the precise starting and ending dates for these windows.<sup>10</sup>

In terms of explanatory variables, from the WoS data, we recover conference-author characteristics, as observed in a five year window prior to their attendance in the conference. These are: the number of previous publications weighted by journal impact factor, the number of previous collaborators, and the number of previous collaborators attending the same conference. From the conference programmes, we recovered each conference-author's affiliation and we associated geographic coordinates,<sup>11</sup> an affiliation ranking, and affiliation "size". Affiliation rankings, coded 1 to 200 and "below top 200", were taken from Hix (2004). The "size" was based on the number of individuals (with a given affiliation) within the eight conferences (APSA2009-12 and MPSA 2009-12). For each conference-author pair we additionally calculated the spatial distance between affiliation coordinates (using the "geodist" command in Stata).

## 2.5 Summary Statistics

In Table 2, we present summary statistics describing the set of conference-authors. Most of the authors are affiliated to an institution in the US (81%), and they are roughly equally divided

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<sup>10</sup>We conducted tests to check whether the 2012 APSA cancellation affected the future likelihood of conference attendants to post sole-authored papers in SSRN. If this was the case, the SSRN outcome could produce a false impression of a collaboration effect, when in fact a collaboration might have happen, but it was not posted in SSRN. We did not detect evidence that the conference cancellation affected the chance of using SSRN, showing that this working paper outcome is legitimate.

<sup>11</sup>We obtained a location address from a geographic online database (OpenStreetMap.org) and extracted the coordinates of these locations using Nominatim (nominatim.openstreetmap.org/).

(30.9%, 30.3% and 38.5%) between institutions ranked, respectively, in the top 50, 51-200, and outside the top 200. Less than a third have co-authored an article (31.8%) and the average number of previous publications in the sample is 1.32. The APSA and MPSA meetings seem to host a large proportion of PhD students and early-career academics: the median participant has not published, or co-authored, a paper before the conference. However, the meetings also gather experienced authors. The academic in the 90th centile (95th centile) has published 4 papers (6 papers) in the five years preceding the conference, and has 3 (4) previous co-authors also attending the conference. In terms of outcomes, 15% of conference-authors subsequently co-author a paper with another participant in the conference.<sup>12</sup> In Table A3 in the Appendix, we provide a picture of types of participants that come to collaborate. Conference collaborations are more likely to occur among academics that have closer research (are assigned to the same session and that have papers in the same theme), that work in the same institution and have collaborated before.

*Table 2*

In the last two columns in Table 2, we present separate means for participants in the APSA (treatment) and MPSA (control) meetings. The MPSA meeting has a larger number of participants (and presenting papers) than the APSA: 4,700 vs 3,000 participants, on average. This difference reflects in participants' profiles: MPSA participants have fewer previous publications on average (1.03 vs 1.66) and fewer co-authors (1.34 vs 1.74). The diff-in-diff approach that we are using controls for systematic differences across conferences, such as different standards for article (and author) acceptance. In our main regressions we control for individual fixed effects, but it is also appropriate to check that the peer environments in neither the treated (APSA) nor control (MPSA) meeting series changed in any systematic way in 2012.<sup>13</sup> We test for whether participants' pre-determined characteristics evolved in parallel over conference-years by running standard diff-in-diff regressions on these characteristics. We use, as dependent variables, several

<sup>12</sup>Recall that this proportion excludes collaborations subsequently formed among co-authors in the paper presented in the conference and it is based on a 2-year window (Table A1), that is narrower than the 5-years window used for control variables, such as the number of previous co-authors.

<sup>13</sup>One specific concern related to an early campaign against holding the 2012 APSA meeting in Louisiana, due to the state's refusal to recognize same-sex marriages. Within this campaign, 1,109 academics signed a petition advocating a boycott, approximately half of whom are in our dataset. It transpired that, indeed, very few (only 30) of these registered to attend the 2012 meeting in New Orleans. However, we find no evidence - as shown in Figure A2 in the Appendix - that the petitioners became, in turn, more likely to attend the 2012 MPSA instead (a potential threat to identification), or indeed that the petitioners differ in observables from the average conference participant in our sample. (These last findings are not shown, but are available under request).

author characteristics predictive of collaborative behaviour (including previous collaborations and publication record). The results are reported in Table A2 in the Appendix. For most variables, we find no statistically significant effect and the p-values associated to the 2012 APSA coefficient are large. The parallel conference series trends are also noticeable visually in Figures 1A in the Appendix.

### 3 Results

We present the analysis in two levels. We examine impacts at the conference-author level to better illustrate the magnitudes of the effects for individual academics. Then, we move the analysis to the dyad level to investigate the types of collaborations facilitated by a conference, and to examine the productivity of these collaboration-types. Lastly, we examine broader conference effects on academics' publication portfolios.

#### 3.1 Effects of Conferences on Academic Collaborations

We begin by investigating how the 2012 APSA Meeting cancellation affected the likelihood of academic collaborations. Figures 1 and 2 illustrate this impact in terms of simple averages. Figure 1 shows the number of unique pairwise collaborations formed among conference participants. While there is a visible upward trend in the number of collaborations among participants over the period 2009-11, there is then a marked *fall* among participants in the 2012 APSA Meeting. This suggests a conference effect. Based on a simple diff-in-diff calculation, 76 pairwise collaborations were lost due to the 2012 cancellation. In Figure 2, we show the effects at conference-author level (by aggregating pairwise collaborations). The graph shows the proportion of academics that subsequently co-author at least one article with another participant in the conference, and suggests that this percentage decreased by 1.6 percentage points as a consequence of the conference cancellation.

*Figures 1 and 2*

Next, we investigate the effects of conferences on authors' chance of forming collaborations in a more controlled way. We estimate the following equation:

$$Collaboration_{ist} = \alpha + \beta_1[s = APSA][t = 2012] + \beta_2[s = APSA] + \sum_{t=2010}^{2012} \theta_t[t_i = 1] + \phi_i + \lambda \mathbf{X}_{it} + \nu_{ist} \quad (1)$$

where,  $i$  indexes for individual,  $s \in \{APSA, MPSA\}$  for conference series and  $t \in \{2009, 2010, 2011, 2012\}$  for conference year. An observation corresponds to a conference-author (a combination of individual, conference series and year).  $Collaboration_{ist}$  is an indicator for whether the conference-author subsequently collaborated with another participant in the same meeting (the same conference series and year). The dummies  $[s = APSA]$  and  $[t = T]$  indicate respectively whether the conference-author is associated with an APSA meeting, and with a year  $T$  meeting. The terms  $\phi_i$ ,  $\mathbf{X}_{it}$ , and  $\nu_{ist}$  denote, respectively, individual fixed effects, a vector for time-varying author characteristics (the number of previous publications weighted by journal impact factor, the number of previous co-authors, previous co-authors with attendants in the same conference and size of affiliated institution), and a random term. Robust standard errors are in brackets.

The results are shown in the first row of Table 3. The diff-in-diff estimates indicate that the 2012 APSA cancellation lead to a decrease in the likelihood of authors subsequently collaborating with others in the conference by 2.4 percentage points (around 18 percent). The magnitude and significance of this effect is robust to using time-varying controls (columns 3 and 6) and to restricting the sample to “sure-participants” (columns 4-6).

The next rows in Table 3 show three different classifications for the collaboration outcome. First (rows 2-3), by collocation versus non-collocation: i.e. showing the conference effect on authors’ likelihood of forming a subsequent collaboration with another meeting participant, (i) from their own institution, and then (ii) from a different institution. Second (rows 4-6), by a proxy for research-closeness: author’s likelihood of forming a subsequent collaboration with another meeting participant, (i) from her own session(s) within the conference, (ii) from a session in the same theme, and then (iii) in a session from a different theme. And third (rows 7-8), by distinguishing between *existing* and *new* co-authors.

It is unclear whether the originally-observed effect is present among colocated co-authorships: the coefficients are no longer significantly different from zero (and indeed change their sign

within the sure-participant sub-sample). But the effect is detected among inter-institutional co-authorships: it is specifically the likelihood of forming a collaboration with an author from a *different* institution that fell, by 22 percent.

The results in rows 5-6 suggest that conferences mainly facilitate collaborations between academics already working on closely related topics (indicated here by having a paper in the same theme): *doubling* the likelihood of such a collaboration. Curiously, however, the results in row 4 do not seem to indicate that conferences facilitate collaborations specifically between authors assigned to the same session.<sup>14</sup> Finally, comparing rows 7 and 8, it seems to be that conferences facilitate collaborations between new, rather than existing, co-authors.

Altogether, therefore, the results in Table 3 suggest that conferences in some sense facilitate collaborations between participants at the conference, and that these are collaborations between individuals with closely related existing research interests, who are not colocated, and who have not previously collaborated.

Table3

For additional insights, we turn to analysis at the conference-author-pair (dyad) level. In particular, our analysis at this level - in Table 4 - is suggestive of a conference-effect both in terms of increasing the likelihood of collaboration and in terms of the quality of the co-authored output.<sup>15</sup> Controls used in the regression include, firstly, measures of “closeness”: the geographical distance between the authors in the dyad, and then dummy indicators for whether the authors have the same affiliation, work in the same country, and whether they are previous co-authors. Further controls are proxies for productivity and propensity to collaborate. These are all measures at the author-level, but are included (at the dyad level) both as the average and as the absolute difference

<sup>14</sup>We also did not detect effects of conferences increasing the chance of collaboration between within-session presenters-and-discussants, presenters-and-presenters, or presenters-and-chairs. (These results are not reported, but available under request.) These finding contrasts somewhat with the strong in-session effects reported in Boudreau et al. (2017).

<sup>15</sup>In Table 4, we estimate the following equation:

$$Collaboration_{\{ij\}st} = \alpha + \beta_1[s = APSA][t = 2012] + \beta_2[s = APSA] + \sum_{t=2010}^{2012} \theta_t[t_i = 1] + \lambda \mathbf{Z}_{\{ij\}t} + \nu_{\{ij\}st} \quad (2)$$

where,  $\{ij\}$  indexes for a conference-author pair,  $s$  for conference series and  $t$  for conference year. An observation corresponds to a conference-author-dyad (a combination of author pair, conference series and year).  $Collaboration_{\{ij\}st}$  is an indicator for whether the conference-author-dyad subsequently collaborated. The terms  $\mathbf{Z}_{\{ij\}t}$  and  $\nu_{\{ij\}st}$  denote, respectively, time-varying dyad characteristic controls, and a random term.

within the pair: the authors' total number of previous publications weighted by journal impact factor, the number of authors' previous co-authors, and size of own institution.

In Table 4, Panel A, Column 1 we show the conference effect on the likelihood of a collaboration among a pair of participants. In column 2, we focus on the chance of a co-publication only. In both cases, the coefficients are negative (i.e. suggesting that the cancellation led to a reduced likelihood of collaboration) but they are only (marginally, at the 10% level) statistically significant using the broader measure. In the remaining Panel A columns, we decompose the likelihood of a co-published paper into the chance of a co-publication in journals in the first, second, third and fourth quartiles, by impact factor. The results here are not significant.

In Table 4 Panel B we restrict the data to dyads that produced a co-publication ( $n=3,820$ ). In the regressions, we use - as dependent variables - the journal ranking of the co-publication (varying from 1 to 149), the normalized journal impact factor and indicators for publication among journal impact factor quartiles. The estimates indicate that collaborations among 2012 APSA meeting participants led to co-publications placed, on average, in journals that are 4.97 points lower-ranked (column 1) and whose impact factor is 0.19 standard deviations lower (column 2). These impacts are statistically significant at the 1% level. The results for publication-quartile resemble the ones in Panel A, but gain statistical significance, suggesting in particular that co-publications among 2012 APSA meeting participants were shifted to lower ranked journals because of the conference cancellation. They were less likely to be placed in first-quartile journals (by 9 percentage points) and more likely to be published in second- (by 2.5 percentage points) , and third-quartile journals (by 6.7 percentage points).

#### *Table 4*

A key question is then: why are collaborations formed within the cohorts of occurring conferences associated with better publication outcomes? We conjecture two main possible explanations. One explanation is that conferences cause changes to patterns of co-authorship, in a direction which is productivity-enhancing. An alternative explanation is that the conference itself provides an important opportunity for co-authors to meet, discuss, and generally improve their work. The eventual outputs are better because of the face-to-face interaction between the co-authors that takes place within the conference.



### 3.2 Heterogeneous Effects of Conferences in Co-publication Outputs

In Table 5, we further explore the findings above. We ask which types of collaborations specifically benefitted from the conferences (or were most negatively impacted by the cancellation). Repeating the analysis of Table 4 Panel B Column 2, we again use as the dependent variable the normalised impact factor of the journal within which the co-publishing dyad's output appears.<sup>16</sup> However, we now run separate regressions splitting the sample, (i) into “existing” versus “new” co-authors (rows 1-2), (ii) into pairs that are “collocated” versus “non-collocated” (rows 3-4), and (iii) into pairs whose authors are based in the same versus in a different country (rows 5-6).

*Table 5*

We only detect statistically significant conference effects for collaborations formed between pairs that are non-collocated and that have not previously co-authored a paper (new co-authors). These loci of benefit seem wholly consistent with the two explanations (for conference effects on publication outcomes) offered above. Co-authors that are collocated or that have previous experience collaborating together are unlikely to have depended on the conference as an opportunity for face-to face interaction to the same extent to as those that are non-collocated or newly collaborating. On the other hand, if a conference can help an author to find the right co-author then it is most likely to do so for authors looking for a new co-author, outside their own institution.<sup>17</sup>

### 3.3 Broader Conference Effects

Finally, we consider broader effects of conferences on academics' publications. In particular, it seems natural to consider whether collaborative outputs triggered by the conference represent an overall boost to academics' productivity in terms of published papers, or rather a displacement of other co-authors and projects. We estimate equation (1), using as the dependent variable various counts relating to the conference-author's published papers (within the same window as used for

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<sup>16</sup>In case the pair co-published more than one paper, we considered the paper with the highest journal impact factor.

<sup>17</sup>In Table A4 in the Appendix, we report estimated effect of the 2012 APSA cancellation on the composition of occurred co-authorships. Occurring conferences lead to subsequent collaborations between authors whose existing research is closer-related, and that are more likely to be based in different countries. The collaborations that had the best chance of “surviving” the conference cancellation were those in which both authors were in large-institutions.

the analyses in Table 3). These include counts of published papers, co-published papers (in total and also disaggregated to papers with and without a conference co-author), and sole-authored papers. They also include counts of the conference-author's "new" co-authors (co-authors not appearing in any co-authored paper preceding the conference) and new co-authors from the conference. The results are shown in Table 6.

It should be noted that in this analysis it is natural to exclude from consideration authors that attended both the MPSA and APSA conferences in a given conference year. This is because several outcome measures will necessarily be the same for the MPSA conference-author as for the APSA conference-author.<sup>18</sup> Though we report results for the full sample in column 1, we show results excluding authors that attended both conferences in column 2.

Few of the estimated impacts in Table 6 are statistically significant, and indeed it seems reasonable that the consequence of missing one conference will be scarcely discernible in this 'bigger picture'. However, the signs of coefficients are suggestive of a co-author substitution effect. Rows 3-4 show negative coefficients for the effect of the 2012 APSA cancellation on the numbers of published papers that are co-authored with a conference co-author (p-value=12.6%), and positive coefficients for the effects on the number of co-published papers with someone that is not in the conference programme (p-value=18%). The coefficients in rows 6-7 suggest that 2012 APSA conference-authors were also able, notwithstanding the conference cancellation, to find new co-authors, but that these became less likely to be from within the conference cohort. The significant result in row 7 corroborates the findings in Tables 3 and 4. It suggests that conferences are an important instrument for networking and that their effects are likely to survive in the long term, reflected in an academic's pool of collaborators.

*Table 6*

## 4 Discussion

We have found that the cancellation of the 2012 APSA meeting reduced participants' likelihood of subsequently co-authoring a paper with another scheduled participant at the meeting.

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<sup>18</sup>This exclusion was not necessary in the analyses of Table 3, but for comparison we have nevertheless replicated, in Table A5 in the Appendix, the analyses on the sub-sample of authors who did not attend both conferences.

It particularly reduced the likelihood of forming an inter-institutional collaboration. We have also observed that collaborations formed among participants in occurring conferences were associated with better publication outcomes than those formed among the participants of the conference that was cancelled. This may have been either because an occurring conference improves the matching of co-authors, or because it provides an invaluable opportunity for face-to-face interaction within early stages of a collaborative project.

There is no question that conferences feature prominently in academic and scientific life. Our findings give scientific corroboration to the previously untested (but commonly held) supposition that conferences are commensurably instrumental in the formation of scientific work.

To some extent, our findings also throw light on broader issues in a literature that more generally explores team formation and network effects in scientific production. Freeman and Huang (2015) have suggested that the characteristics of collaborations that are most productive are not necessarily the characteristics that are most commonly observed.<sup>19</sup> There could be two reasons for this. It could be that the teams that commonly arise are relatively inefficient, and that working with distant co-authors *improves* the potential for a project; or it could be instead that the scientist's decision to work with different (new, less usual) co-authors is itself endogenous to the potential of the project. The fact that, in our results, an exogenously induced reduction in inter-institutional collaboration seems to have dented publication outcomes, could be viewed as support for the first of these two accounts. This then begs a further question: why do academics or scientists not reach out beyond their usual (for example, collocated) pool of co-authors more often? The answer could lie in communication (or other) costs,<sup>20</sup> or it could lie in *network constraints* that affect the pattern of co-author matching, and therefore reduce scientific productivity. A conference represents a (slight) relaxation of network constraints, and so the fact that academics respond by increasingly forming productive, inter-institutional and new collaborations suggests that (to some degree at least), the networks account lies behind existing inefficiencies.

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<sup>19</sup>Specifically, they find that ethnic similarity within authorship teams exceeds that which would be predicted by random allocation, while simultaneously being associated with publication in lower impact journals and with fewer citations.

<sup>20</sup>In fact, Agrawal and Goldfarb (2008) provide evidence in this regard.

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**Table 1 - Number of Observations**

Level:	Conference-Authors	Conference-Author Dyads	
	All	All	Prospective Collaborations
	[1]	[2]	[3]
APSA2009	4,007	8,026,021	8,024,911
APSA2010	4,248	9,020,628	9,019,366
APSA2011	4,356	9,485,190	9,483,754
APSA2012	4,203	8,830,503	8,829,026
MPSA2009	4,925	12,125,350	12,123,789
MPSA2010	5,175	13,387,725	13,385,997
MPSA2011	5,024	12,617,776	12,615,967
MPSA2012	5,019	12,592,671	12,588,802
Total	36,957	86,085,864	86,071,612

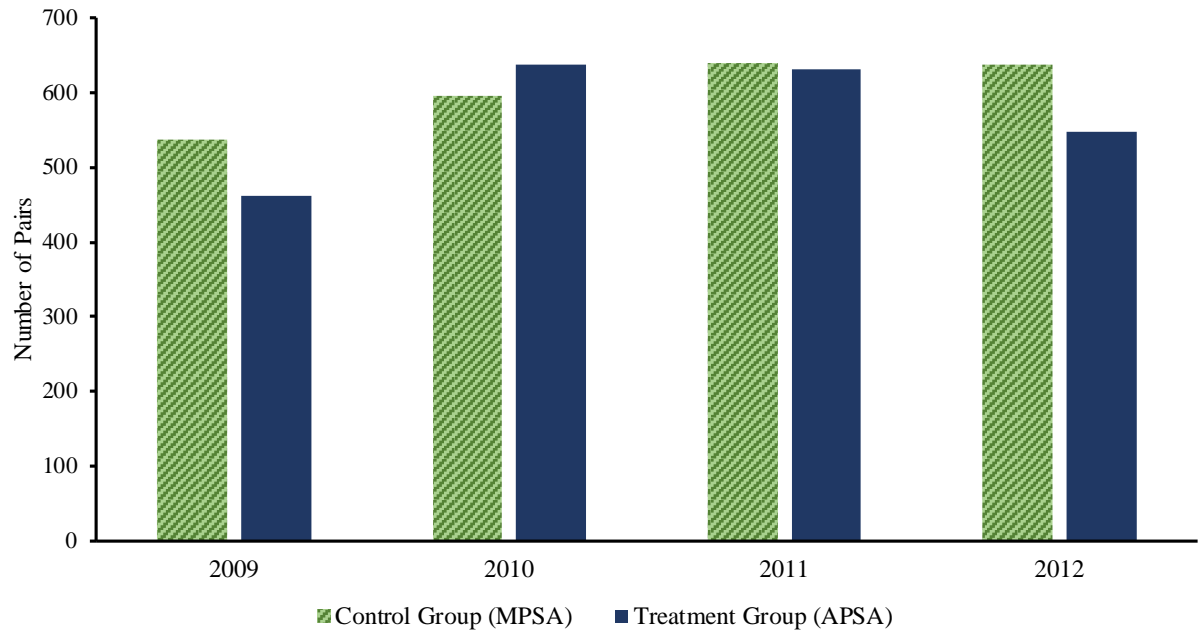
Note: The number of prospective collaborations (in column 3) is given by the number of conference-author dyads that have not collaborated in a paper presented in the conference.

**Table 2 - Descriptives of Conference-Authors' Characteristics**

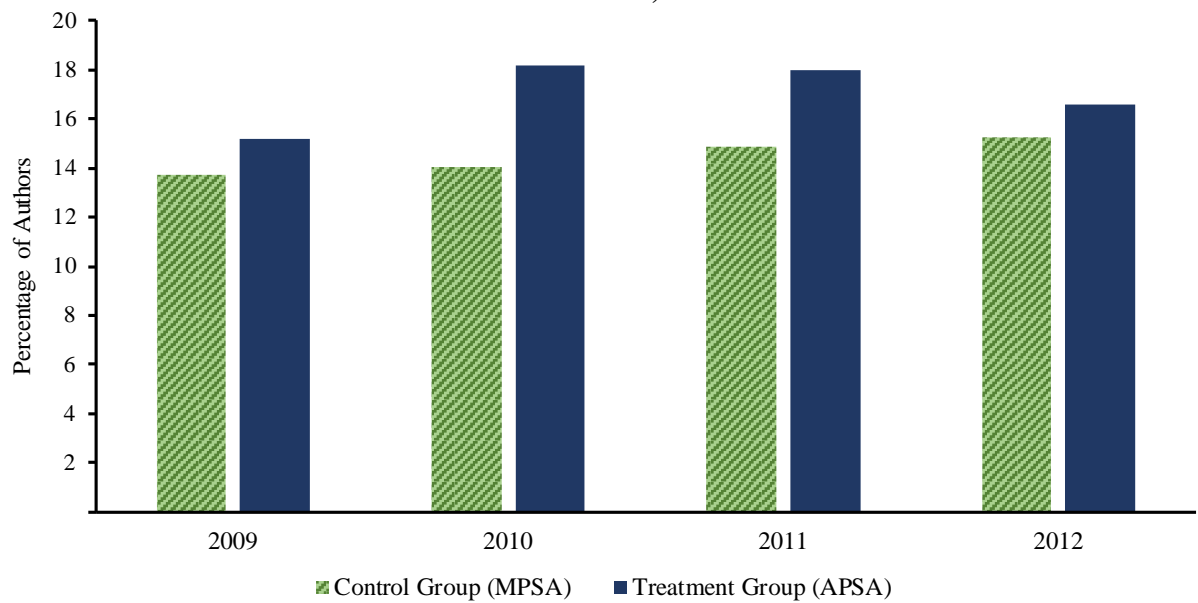
	Sample:	All (n =36,957)					APSA	MPSA	
							(n =16,814)	(n =20,143)	
		Centiles					Mean		
		Mean	St. Dev.	50th	75th	90th	95th		
Affiliation Rank:									
1-50		30.9%	0.46	0.0	1.0	1.0	1.0	32.7%	29.5%
51-100		15.6%	0.36	0.0	0.0	1.0	1.0	15.7%	15.5%
101-150		10.5%	0.31	0.0	0.0	1.0	1.0	11.0%	10.0%
151-200		4.2%	0.20	0.0	0.0	0.0	1.0	3.9%	4.4%
>200		38.5%	0.49	0.0	1.0	1.0	1.0	36.0%	40.5%
Previous Coauthor (Dummy)		31.8%	0.47	0.0	1.0	1.0	1.0	37.1%	27.4%
# Previous Coauthors		1.52	3.46	0.0	2.0	5.0	8.0	1.74	1.34
Coauthor in the Conference (Dummy)		28.3%	0.45	0.0	1.0	1.0	1.0	33.0%	24.3%
# Previous Coauthors in the Conference		0.75	1.69	0.0	1.0	3.0	4.0	0.85	0.66
# Publications		1.32	2.55	0.0	2.0	4.0	6.0	1.66	1.03
# Publications Weighted by Impact Factor		1.93	4.28	0.0	2.2	6.3	9.8	2.45	1.49
Impact Factor of Best Publication		1.90	1.10	1.7	2.6	3.3	3.8	1.94	1.85
Based in the US (Dummy)		0.81	0.39	1.0	1.0	1.0	1.0	0.78	0.83
Outcome:									
Collaborate with Another Author in the Conference (Dummy)		15.6%	0.3631859	0.0	0.0	1.0	1.0	17.0%	14.5%

Notes: The statistics shown for impact factor of best publication are based only on conference-authors with a previous publication (14,779 conference-authors, 8,206 in the APSA and 6,573 in the MPSA). The outcome excludes subsequent collaborations with co-author(s) in a paper presented in the conference.

**Figure 1 - Conference-Author Pairs with Subsequent Collaborations**



**Figure 2 - Authors Subsequently Collaborating (with another conference author)**





**Table 3 - Effects of Conferences on the Formation of Academic Collaborations**

Sample:		All Participants ( <i>n</i> =36957)			Sure-participants ( <i>n</i> =25433)		
		Mean Dependent Variable	2012 APSA Estimates		Mean Dependent Variable	2012 APSA Estimates	
Outcomes:		[1]	[2]	[3]	[4]	[5]	[6]
Formed a collaboration with another ...							
[1]	conference participant	0.1563	-0.0241 [0.0087]***	-0.0236 [0.0087]***	0.1389	-0.0244 [0.0107]**	-0.0230 [0.0107]**
Formed a collaboration with another conf. participant ...							
[2]	from the same institution	0.0584	-0.0085 [0.0063]	-0.0099 [0.0064]	0.0521	0.0029 [0.0077]	0.0046 [0.0077]
[3]	from a different institution	0.1205	-0.0219 [0.0082]***	-0.0200 [0.0082]**	0.1062	-0.0268 [0.0101]***	-0.0253 [0.0100]**
Formed a collaboration with another conf. participant ...							
[4]	in the same session	0.0181	-0.0020 [0.0042]	-0.0012 [0.0042]	0.0177	0.0012 [0.0054]	0.0020 [0.0054]
[5]	in the same theme	0.0489	-0.0247 [0.0069]***	-0.0240 [0.0069]***	0.0478	-0.0121 [0.0083]	-0.0115 [0.0084]
[6]	in a different theme	0.1281	-0.0119 [0.0087]	-0.0117 [0.0087]	0.1112	-0.0188 [0.0106]*	-0.0177 [0.0107]*
Formed a collaboration with another conf. participant ...							
[7]	who is an existing co-author	0.0343	-0.0052 [0.0053]	-0.0076 [0.0053]	0.0291	-0.0090 [0.0065]	-0.0105 [0.0065]
[8]	who is a new co-author	0.1405	-0.0185 [0.0084]**	-0.0165 [0.0084]**	0.1255	-0.0163 [0.0103]	-0.0134 [0.0104]
Time-varying controls?			No	Yes		No	Yes

Notes: Each entry in columns 2,3, 5 and 6 represents estimates for the 2012 APSA coefficient from a separate regression. Outcomes are indicator for whether the conference-author has come to collaborate with someone with the specific characteristics. All regressions include author fixed effects. Time varying controls include: total number of previous publications weighted by journal impact factor, number of previous co-authors, previous co-authors attending the same conference, and the size of own institution (as explained in Section 2.4). The definition of 'sure-participant' is explained in Section 2.2. Standard errors are in brackets.

\*\*\*Significant at the 1 percent level. \*\*Significant at the 5 percent level. \*Significant at the 10 percent level.

**Table 4 - Likelihood and Outcomes of Collaborations Formed Among Conference Participants**

*Panel A Sample: All Dyads (n=84,767,914)*

Dependent Variable:			Strand of Co-publication			
	A Collaboration [1]	A Co-publication [2]	Top 25% [3]	25-50% [4]	50-75% [5]	Bottom 75% [6]
<b>2012 APSA Estimates</b>	-7.37E-06 [0.00000389]*	-5.65E-06 [0.00000354]	-8.95E-07 [0.00000299]	-4.55E-07 [0.00000219]	1.57E-06 [0.00000192]	-2.22E-07 [0.000000773]
R2	0.0219	0.0185	0.013	0.0075	0.0049	0.0007

*Panel B Sample: Dyads that Co-published an Article (n=3,820)*

Dependent Variable:	Journal		Strand of Co-publication			
	Ranking [1]	Impact Factor [2]	Top 25% [3]	25-50% [4]	50-75% [5]	Bottom 75% [6]
<b>2012 APSA Estimates</b>	4.9760 [2.4047]***	-0.1915 [0.0716]***	-0.0904 [0.0332]***	0.0250 [0.0359]	0.0670 [0.0333]**	-0.0016 [0.0153]
R2	0.0516	0.0542	3.18E-02	5.40E-03	0.036	1.38E-02

Notes: The unit of observation is at the pair (dyad) level. The outcome in column 1, Panel A refers to an indicator for whether the pair has produced a joint SSRN working paper or co-published a paper in the timeframe detailed in Table A1. The dependent variables in columns 3-6 are indicators for whether the pair has co-published a paper according to the impact factor journal quartile.

All regressions include controls for: geographical distance between the authors in the dyad, same affiliation (dummy), same country (dummy), previous co-authors (dummy), number of previous publications weighted by journal impact factor (average and absolute difference), number of previous co-authors (average and absolute difference), and affiliation size (average and absolute difference). The number of observations in Panel A differs from 86,071,612 because data on controls are missing for 1,303,698 dyads.

Standard errors are in brackets.

\*\*\*Significant at the 1 percent level. \*\*Significant at the 5 percent level. \*Significant at the 10 percent level.

**Table 5 - Journal Impact Factor Outcomes of Collaborations Formed Among  
Conference Participants by Pair Characteristics**

Sample Split Criteria:		2012 APSA Estimates		
		Coef.	Stand. Error	<i>n</i>
[1]	Existing Co-authors	0.0827	0.1585	639
[2]	New Co-authors	-0.1998	0.0817 **	3,183
[3]	In the Same Institution (Collocated)	-0.0539	0.1426	1,106
[4]	In a Different Institution (Non-collocated)	-0.2543	0.0833 ***	2,716
[5]	In the Same Country	-0.1755	0.0791 **	3,281
[6]	In a Different Country	-0.2619	0.1614 ***	557

Notes: Each row in the table represents estimates for the 2012 APSA coefficient from a separate regression. Standard errors are in brackets.

The p-value for a test of [1]=[2] is 0.1131, for [3]=[4] is 0.2222, and for [5]=[6] is 0.6309.

\*\*\*Significant at the 1 percent level. \*\*Significant at the 5 percent level.

**Table 6 - Effects of Conferences on Authors' Publication Portfolio**

<b>2012 APSA Estimates</b>		
Dependent Variable:	Full Sample ( <i>n</i> =36,597)	Excluding Authors Attending Both Conferences ( <i>n</i> =26,329)
	[1]	[2]
[1] # Published Papers	-0.0102 [0.0206]	-0.0288 [0.0391]
[2] # Co-published Papers	-0.0053 [0.0162]	-0.0152 [0.0310]
[3] # Co-published Papers with a Conference Author	-0.0236 [0.0154]	-0.0389 [0.0250]
[4] # Co-published Papers without a Conference Author	0.0182 [0.0138]	0.0237 [0.0213]
[5] # Single-authored Papers	-0.0049 [0.0126]	-0.0136 [0.0243]
[6] # New Co-authors	0.0162 [0.0239]	0.0083 [0.0448]
[7] # New Co-authors that went to the Conference	-0.0245 [0.0135]*	-0.0559 [0.0201]***

Notes: The sample specified in column 2 excludes conference-participants that attend both the APSA and the MPSA in the same year. "Conference author" refers to an author attending the same conference. All regressions include author fixed effects, number of previous publications weighted by journal impact factor, the number of previous co-authors, and previous co-authors with attendants in the same conference and size of affiliated institution. Standard errors are in brackets.

\*\*Significant at the 5 percent level. \*Significant at the 10 percent level.

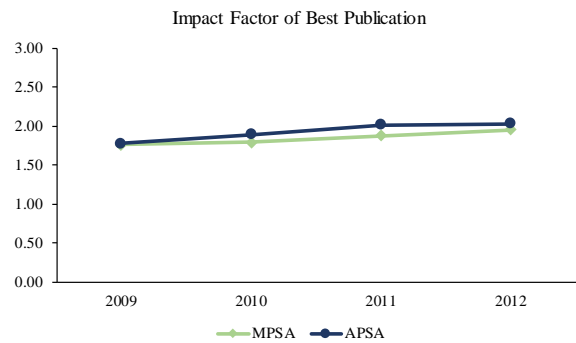
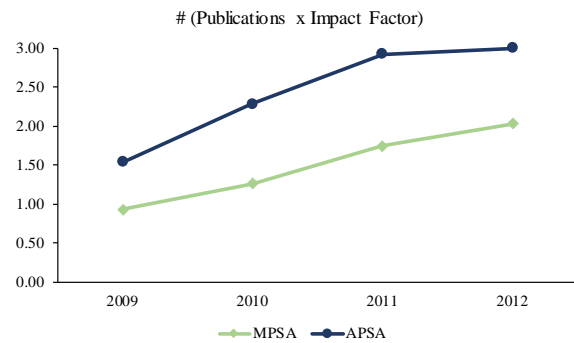
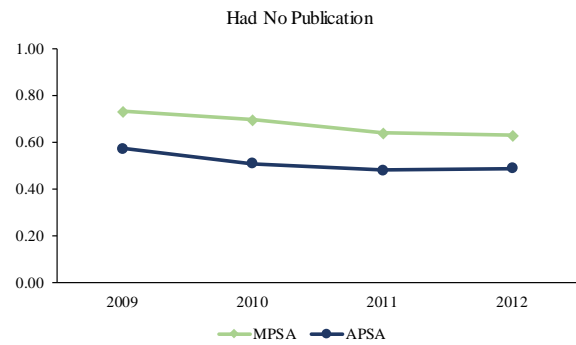
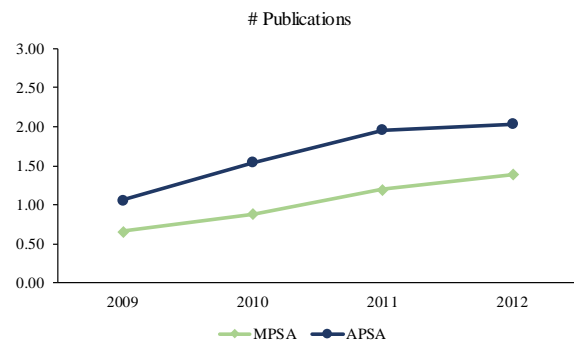
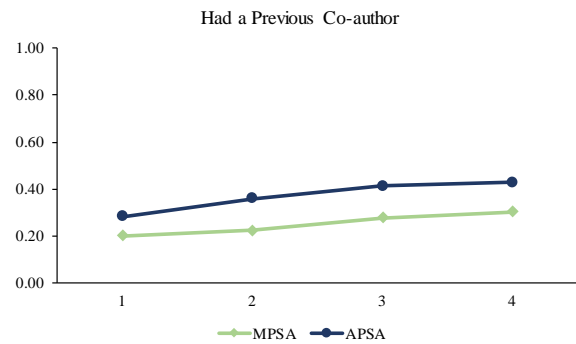
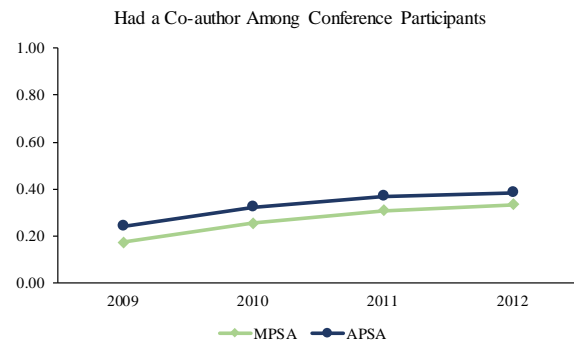
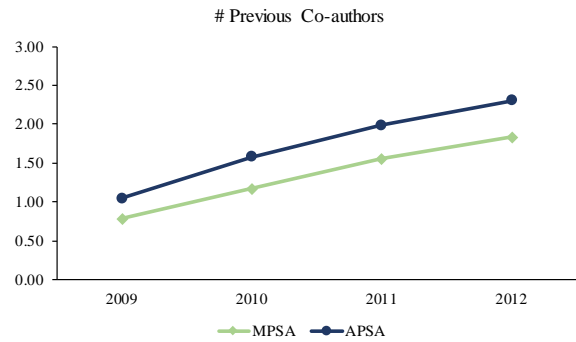
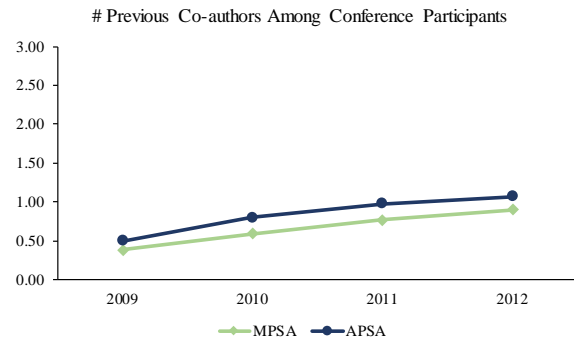
# Appendix.

## List of Journals

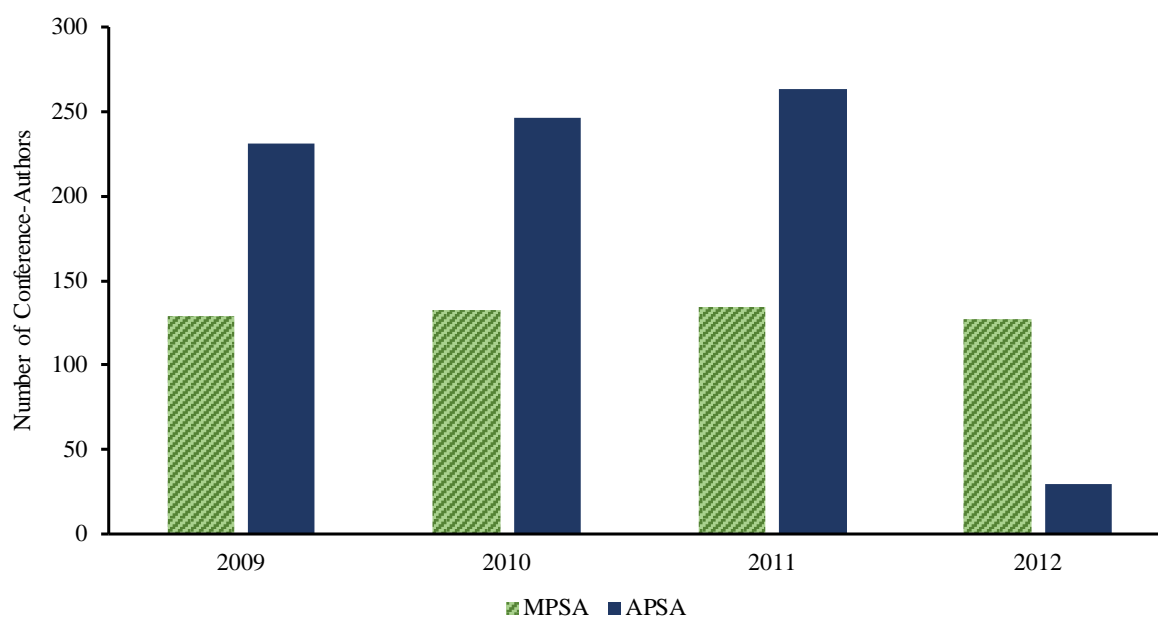
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Law Review, Common Market Law Review, Communist and Post-Communist Studies, Comparative European Politics, Comparative Political Studies, Comparative Politics, Comparative Studies in Society and History, Contemporary Political Theory, Contemporary Politics, Cooperation and Conflict, Cornell Law Review, Current History, Democratization, Diplomatic History, Dissent, Duke Law Journal, East European Politics and Societies, Ecological Economics, *Econometrica*, Economic Geography , Economics & Politics, Economy and Society , Electoral Studies, Environmental History , Environmental Politics, Ethics & International Affairs, Ethics & Global Politics, Europe-Asia Studies, European History Quarterly, European Journal Of International Relations, European Journal of Political Economy, European Journal of Political Research, European Political Science, European Political Science Review, European Sociological Review, European Union Politics, Foreign Affairs, Forum-A Journal of Applied Research in Contemporary Politics, Gender & Society, Geopolitics, Georgetown Law Journal, German History, German Politics, Global Environmental Politics, Global Networks-A Journal Of Transnational Affairs, Global Policy, Governance An International Journal of Policy Administration and Institutions, Government and Opposition, Harvard Law Review, *Historia y Politica*, Historical Materialism-Research in Critical Marxist Theory, History Workshop Journal , Human Rights Quarterly, Independent Review, *Internasjonal Politikk*, International Affairs, International Environmental Agreements- Politics Law and Economics, International Feminists Journal of Politics, International Journal of Conflict and Violence, International Journal of Press-Politics, International Journal of Transitional Justice , International Organization, International Political Science Review, International Political Sociology, International Politics, International Security, International Studies Quarterly, International Studies 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**Figures A1 - Pre-determined Characteristics by Conference**



**Figure A2 - Conference-Authors that Petitioned Against the 2012 APSA Venue**





**Table A1- Timeframe for Collaboration Outcome**

Conference	SSRN Working Paper	Publication
APSA 2009	Sept 2010-August 2012	Jan 2012 - Dec 2013
APSA 2010	Sept 2011-August 2013	Jan 2013 - Dec 2014
APSA 2011	Sept 2012-August 2014	Jan 2014 - Dec 2015
APSA 2012	Sept 2013-August 2015	Jan 2015 - Dec 2016
MPSA 2009	April 2010-March 2012	Jan 2012 - Dec 2013
MPSA 2010	April 2011-March 2013	Jan 2013 - Dec 2014
MPSA 2011	April 2012-March 2014	Jan 2014 - Dec 2015
MPSA 2012	April 2013-March 2015	Jan 2015 - Dec 2016

Note: The realization of a collaboration was assumed if a co-authored paper was found in window dates described in Table A1.

**Table A2- Robustness Checks**

Dependent Variable:	Sample:	All Participants ( <i>n</i> =36957)			Sure-participants ( <i>n</i> =25433)		
		Mean	2012 APSA		Mean	2012 APSA	
# Co-authors		1.5210	0.0969	[0.0966]	1.2731	0.0512	[0.1095]
# Co-authors Attending Conference		0.7454	-0.0050	[0.0459]	0.6199	-0.0011	[0.0531]
# Publications		1.3162	0.0360	[0.0701]	1.1959	-0.0230	[0.0813]
# (Publication* Impact Factor)		1.9272	0.0353	[0.1145]	1.7166	-0.0533	[0.1307]
Impact Factor of Best Publication		1.9002	-0.0145	[0.0411]	1.8450	-0.0510	[0.0501]
Has No Publication (Dummy)		0.6001	0.0298	[0.0118]**	0.6187	0.0362	[0.0143]**

Notes: Each entry represents estimates for the 2012 APSA coefficient from a separate regression. All regressions include year dummies and an indicator for whether the pair was in an APSA Meeting.

\*\*Significant at the 5 percent level.

**Table A3 - Likelihood of Selected Pairs of Participants**

	All Pairs	Occuring Collaborations	[2]/[1]
Sample:	[1]	[2]	
Same Session	0.2%	8.2%	39.6
Same Topic	6.7%	24.5%	3.6
Previous Co-author	0.0%	16.7%	785.5
Same Country	66.1%	85.5%	1.3
Same Institution	0.6%	28.8%	45.2
Distance (in km)	3,354	1,612	0.5

Notes: Entries in column 1 refer the frequency with which a specific pair-characteristic is noticed among all dyads. Entries in column 2 refers to the same frequency, but only among dyads that co-published a paper subsequent to the conference. The number of observations in column 1 is 84,767,914 and in column 2 is 3,838.

**Table A4 - Composition of Collaborations Formed in Conferences by Pair Characteristic**

Dependent variable:	Productivity (Average)	High-High Productivity	High-Low Productivity	Low-Low Productivity
<b>2012 APSA Estimate</b>	-0.6726 [0.45412]	-0.02154 [0.03638]	-0.00187 [0.03631]	0.02342 [0.02617]
Dependent variable:	Same Theme	Collocated	In the Same Country	Distance (in km)
<b>2012 APSA Estimate</b>	-0.07049 [0.03099]**	0.01842 [0.03303]	0.04478 [0.02725]*	-181.3 [177.1]
Dependent variable:	Both in Large Institutions	Large-Small Institutions	Both in Small Institutions	Size of Institution
<b>2012 APSA Estimate</b>	0.1199 [0.0348]**	-0.06455 [0.03402]*	-0.05537 [0.03527]	25.23936 [12.648]**

Notes: The unit of observation is at the pair level and the sample is composed by pairs that co-published a paper subsequent to the conference. Each entry represents estimates for the 2012 APSA coefficient from a separate regression. All regressions include year dummies and an indicator for whether the pair was in an APSA Meeting. In terms of dependent variables, “productivity” refers to the dyad average number of individuals’ previous publications weighted by journal impact factor (Npub\*IF). An individual was classified as high (low) productivity whether his Npub\*IF was above (below) the mean in the sample, and whether he is affiliated to a large (small) institutions whether the size of his institution is above (below) the mean among participants in the sample. The dependent variables in the first row are, respectively, indicators to whether both individuals in the dyad are classified as high productivity, whether one is high-productivity and the other is low-productivity, and whether both are classified as low-productivity. The dependent variables in the last row are indicators to whether both individuals are affiliated to large institutions, whether one is in a large and other is in a small institution and whether both are in small institutions, respectively. The number of observations is 3,828. Standard errors are in brackets. In each regression the number of observations (i.e. the number of dyads that co-published) is 3,828.

\*\*Significant at the 5 percent level. \*Significant at the 10 percent level.

**Table A5 - Effects of Conferences on the Formation of Academic Collaborations**

Sample: Attend only one Conference (APSA or MPSA) in a year ( $n=26329$ )			
Outcomes:	Mean Dependent Variable	2012 APSA Estimates	
		[2]	[3]
Formed a collaboration with another ...	[1]		
[1] conference participant	0.1025	-0.0281 [0.0127]**	-0.0287 [0.0127]**
Formed a collaboration with another conf. participant ...			
[2] from the same institution	0.0388	-0.0107 [0.0087]	-0.0105 [0.0087]
[3] from a different institution	0.0769	-0.0292 [0.0011]**	-0.0293 [0.0118]**
Formed a collaboration with another conf. participant ...			
[4] in the same session	0.0129	-0.0065 [0.0058]	-0.0063 [0.0057]
[5] in the same theme	0.0320	-0.0182 [0.0087]**	-0.0175 [0.0087]**
[6] in a different theme	0.0826	-0.0205 [0.0119]*	-0.0210 [0.0119]*
Formed a collaboration with another conf. participant ...			
[7] who is an existing co-author	0.0190	0.0010 [0.0069]	-0.0023 [0.0069]
[8] who is a new co-author	0.0924	-0.0262 [0.0123]**	-0.0233 [0.0123]*
Time-varying controls?		No	Yes

Notes: Each entry in columns 2 and 3 represents estimates for the 2012 APSA coefficient from a separate regression. Outcomes are indicator for whether the conference-author has come to collaborate with someone with the specific characteristics. All regressions include author fixed effects. Time varying controls include: total number of previous publications weighted by journal impact factor, number of previous co-authors, previous co-authors attending the same conference, and the size of own institution (as explained in Section 2.4). The definition of 'sure-participant' is explained in Section 2.2. Standard errors are in brackets.

\*\*Significant at the 5 percent level. \*Significant at the 10 percent level.

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