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Employment:
2021 - Assistant Professor at the W. P. Carey School of Business at Arizona State University
2014 - 2015 Chilean College Board (*Consejo de Rectores de las Universidades Chilenas, CRUCH*)

Personal Information:
Date of Birth: June 9th, 1988
Citizenship: Chilean
Visa: J1

Undergraduate Studies:

Undergraduate Degree, Industrial Engineering, University of Chile, Highest Distinction, 2013
B., Engineering Science in Industrial Engineering, University of Chile, Highest Distinction, 2011

Masters Level Work:
M. A., Economics, University of Pennsylvania, 2018
M., Public Policies, University of Chile, Highest Distinction, 2013

Graduate Studies:
University of Pennsylvania, 2015 to present
Thesis Title: "*Essays on Empirical Market Design in Higher Education*"
Expected Completion Date: August 2021

Thesis Committee and References:

Hanming Fang (Advisor)
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Teaching and Research Fields:

Applied Microeconomics, Empirical Market Design, Education, and Labor Economics

Teaching Experience:

2016 (Fall)	Introduction to Economics, University of Pennsylvania, Teaching Assistant for Professor Anne Duchene
2017 (Spring)	Introduction to Economics, University of Pennsylvania, Teaching Assistant for Professor Rebecca Stein
2018 (Fall)	Intermediate level Microeconomics, University of Pennsylvania, Teaching Assistant for Professor Rakesh Vohra
2020 (Spring)	Industrial Organization, University of Pennsylvania, Teaching Assistant for Professor John Lazarev

Research Experience and Other Employment:

2017 - 2019	University of Pennsylvania, R.A. for Professors Hanming Fang and Andrew Shephard
2019	University of Pennsylvania, R.A. for Professor Rakesh Vohra
2019	University of Pennsylvania, R.A. for Professors Juan Pablo Atal and Rakesh Vohra

Professional Activities

Presentations:

2021	Toulouse School of Economics, University of Chile, Pontifical Catholic University of Chile, NYU Stern, Arizona State University, University of Exeter, Western University, NERA, Penn State University (scheduled)
2020	University of Chile, Santiago, Chile
2019	North American Summer Meeting / Econometric Society, Seattle, USA
2018	15th Workshop on Matching Practices in Europe, Mannheim, Germany

Refereeing:

International Economic Review, Higher Education Policy

Professional:

2015 Startup - Consultancy Company, *TwoMatch* Consulting (Design of matching algorithms)

Honors, Scholarships, and Fellowships:

2020-2021	Maloof Family - Dissertation Fellowship in Economics
2018-2019	Rodin Graduate Fellowship
2017	Joel Popkin Award, Graduate Student Teaching Prize in Economics, Department of Economics, University of Pennsylvania
2015-2020	University of Pennsylvania Fellowship Department of Economics, University of Pennsylvania
2014	Eugenio Lahera Prize: Best Thesis in Public Policies, University of Chile

Publications:

"Improving the Chilean College Admissions System" (with R. Cominetti, I. Rios and G. Parra), in Operations Research, 2021. First place, Doing Good with Good OR - Student Paper Competition (2018)

"Hunter-gatherers maintain assortativity in cooperation despite high-levels of residential change and mixing", with K. Smith, I. Mabulla, C. Apicella, in Current Biology 28 (19), 3152-3157, 2018

"Effect of Including High-School Grades Rank in the Admission Process to Chilean Universities", with A. Mizala and I. Ríos, in Pensamiento Educativo, 52 (1), 95–118, 2015.

Research Papers:

Job Market Paper:

"Dynamic College Admissions and the Determinants of Students' College Retention" (with I. Rios)
We analyze the relevance of incorporating dynamic incentives and eliciting private information about students' preferences to improve their welfare and outcomes in dynamic centralized assignment systems. We show that the most common assignment mechanism, the Deferred Acceptance (DA) algorithm, can result in significant inefficiencies as it fails to elicit cardinal information on students' preferences. We collect novel data about students' preferences, their beliefs on admission chances, and their college outcomes for the Chilean college system. We analyze two main behavioral channels that explain students' dynamic decisions. First, by exploiting discontinuities on admission cutoffs, we show that not being assigned to ones' top-reported preference has a positive causal effect on the probability of re-applying to the centralized system and switching one's major/college, suggesting that students switch to more preferred programs due to initial *mismatches*. Second, we find that a significant fraction of students change their preferences during their college progression, and that these changes are correlated with their grades, suggesting that students may learn about their match-quality. Based on these facts, we build and estimate a structural model of students' college progression in the presence of a centralized admission system, allowing students to *learn* about their match-quality over time and re-apply to the system. We use the estimated model to disentangle how much of students' switching behavior is due to initial mismatches and learning, and we analyze the impact of changing the assignment mechanism and the re-application rules on the efficiency of the system. Our counterfactual results show that policies that provide score bonuses that elicit information on students' cardinal preferences and leverage dynamic incentives can significantly decrease switchings, dropouts, and increase students' overall welfare.

"Do "Short-List" Students Report Truthfully? Strategic Behavior in the Chilean College Admissions Problem" (with I. Rios)
We analyze the application process in the Chilean College Admissions problem. Students can submit up to 10 preferences, but most students do not fill their entire application list ("short-list"). Even though students face no incentives to misreport, we find evidence of strategic behavior as students tend to omit programs for which their admission probabilities are too low. To rationalize this behavior, we construct a portfolio problem where students maximize their expected utility given their preferences and beliefs over admission probabilities. We adapt the estimation procedure proposed by Agarwal and Somaini (2018) to solve a large portfolio problem. To simplify this task, we show that it is sufficient to compare a ROL with only a subset of ROLs ("one-shot swaps") to ensure its optimality without running into the curse of dimensionality. To better identify the model, we exploit a unique exogenous variation on the admission weights over time. We find that assuming truth-telling leads to biased results. Specifically, when students only include programs if it is strictly profitable to do so, assuming truth-telling underestimates how preferred selective programs are and overstates the value of being unassigned and the degree of preference heterogeneity in the system. Ignoring the constraint on the length of the list can also result in biased estimates, even if the proportion of constrained ROLs is relatively small. Our estimation results strongly suggest that "short-list" students should not be interpreted as truth-tellers, even in a seemingly strategy-proof environment. Finally, we apply our estimation method to estimate students' preferences for programs and majors in Chile and find strong differences in preferences regarding students' gender and scores.

"College Admissions Problem with Ties and Flexible Quotas" (with R. Cominetti, I. Ríos and G. Parra)
We study an extension of the classical college admission problem where applicants have strict preferences, but careers may include ties in their preference lists. We present an algorithm which enables us to find stable assignments without breaking ties rules but considering flexible quotas. We investigate the properties of this algorithm -- stability, optimality -- and we show that the resulting algorithm is neither monotone nor strategy-proof. The mechanism is used to solve real instances of the Chilean college admission problem. Among our results, we show that the welfare of students is increased if flexible quotas and a student-optimal assignment are combined. Finally, we argue why such assignment may be desirable in the Chilean context.

Research Paper(s) in Progress

"The Effect of Automation on the U.S Labor Market, under the Affordable Care Act" (with H. Fang and A. Shephard)

"Hybrid Dutch auctions and Toxic bonds", (with T. Mylovanov, and R. Vohra)

"Mistakes in College Admissions" (with M. Martinez, C. Neilson, and I. Rios)

Languages: Spanish (Native) and English (Fluent)

Computational Skills: R, Rcpp, C++, Python, SQL, and Stata