Encounters in Econometric Theory
Nuffield College, May 14–15, 2026

Christophe Gaillac (University of Geneva), Ayden Higgins (University of Exeter),
Martin Mugnier (PSE), Claudia Noack (University of Bonn),
Myungkou Shin (University of Surrey), Martin Weidner (University of Oxford)

Programme

Thursday

9.00 - 09.30	Welcome
9.30 - 11.00	Andrei Zeleneev, Facundo Arganaraz, Ben Deaner
11.00 - 11.30	Coffee break
11.30 - 12.30	Keynote: Áureo de Paula
12.30 - 14.00	Lunch
14.00 - 15.00	Jad Beyhum, Victor Sancibrian
15.00 - 15.30	Coffee break
15.30 - 16.30	Keynote: Daniel Wilhelm
16.30 - 17.00	Coffee break
17.00 - 18.00	Martina Pons, Julia Koh
18.45 - 19.15	Pre-dinner drinks
19.15	Dinner

Friday

9.30 - 11.00	Xiaolin Sun, Mengshan Xu, and Lina Zhang
11.00 - 11.30	Coffee break
11.30 - 12.30	Keynote: Max Kasy
12.30 - 14.00	Lunch
14.00 - 15.00	Vincent Starck, Kamila Nowakowicz
15.00 - 15.30	Coffee break
15.30 - 16.30	Oriol González-Casasús, Rosnel Sessinou
16.30	Departure

Speakers and Talks

Keynote Speakers

1. Áureo de Paula, Professor at University College London (PhD 2006, Princeton University)

   Prediction Sets and Conformal Inference with Interval Outcomes
   joint with Weiguang Liu, Elie Tamer
   Given data on a scalar random variable Y, a prediction set for Y with miscoverage level α is a set of values for y that contains a randomly drawn Y with probability $1-\alpha$, where $\alpha \in (0,1)$. Among all prediction sets that satisfy this coverage property, the oracle prediction set is the one with the smallest volume. This paper provides estimation methods for such prediction sets given observed conditioning covariates when Y is *censored* or *measured in intervals*. We first characterise the oracle prediction set under interval censoring and develop a consistent estimator for the shortest prediction *interval* that satisfies this coverage property. The consistency results are extended to accommodate cases where the prediction set consists of multiple disjoint intervals. We use conformal inference to construct a prediction set that achieves finite-sample validity under censoring and maintains consistency as the sample size increases, using a conformity score function designed for interval data. The procedure accommodates irreducible prediction uncertainty (due to the stochastic nature of outcomes), modelling uncertainty due to partial identification, and sampling uncertainty that diminishes as the sample size grows. We conduct a set of Monte Carlo simulations and an application to data from the Current Population Survey. The results highlight the robustness and efficiency of the proposed methods.

2. Max Kasy, Professor at University of Oxford (PhD 2011, University of Berkeley)

   Machine learning, causal inference, and economics

3. Daniel Wilhelm, Professor at Ludwig-Maximilians-University Munich (PhD 2012, University of Chicago)

   The Causal Interpretation of the AKM Estimand
   with X. Huang, T. Lamadon, M. Mogstad, A. Shaikh

The Abowd–Kramarz–Margolis (AKM) regression is widely used to analyze firm wage premia. We derive a general potential outcome decomposition of the AKM estimand and show that it is a worker-weighted average of causal effects of moving between pairs of firms. Under strong assumptions, this decomposition collapses so that the AKM estimand for a specific firm equals the causal effect of moving from the left-out firm to that firm. We give necessary and sufficient conditions for the AKM estimand to have this causal interpretation and propose tests for the sufficient conditions. In an application to Italian administrative data we document that the standard AKM estimator can be severely biased when these conditions fail. We propose a matched-AKM estimator that consistently estimates causal firm effects under weaker and more realistic assumptions.

Featured Speakers

1. Facundo Argañaraz, Assistant Professor at Sciences Po (PhD 2025, University Carlos III of Madrid)

   Debiased Machine Learning for Unobserved Heterogeneity

   joint with Juan Carlos Escanciano

   Developing robust inference for models with nonparametric Unobserved Heterogeneity (UH) is both important and challenging. We propose novel Debiased Machine Learning (DML) procedures for valid inference on functionals of UH, allowing for partial identification of multivariate target and high-dimensional nuisance parameters. Our main contribution is the characterization of all relevant Neyman-orthogonal moments in models with nonparametric UH, where relevance means informativeness about the parameter of interest. Under additional support conditions, orthogonal moments are globally robust to the distribution of the UH. They may still involve other high-dimensional nuisance parameters, but their local robustness reduces regularization bias and enables valid DML inference. We apply these results to: (i) common parameters, average marginal effects, and variances of UH in panel data models with high-dimensional controls; (ii) moments of the common factor in the Kotlarski model with a factor loading. Monte Carlo simulations show substantial efficiency gains from using efficient orthogonal moments relative to ad-hoc choices. We illustrate the practical value of our approach by detecting heterogeneous treatment effects of union membership on wages in a panel of young males—using a high-dimensional specification, which other low-dimensional procedures fail to uncover.

2. Ben Deaner, Assistant Professor at University College London (PhD 2021, Massachusetts Institute of Technology)

Transferring Causal Estimates: a Latent Balancing Approach

joint work with Liyang Sun

We present novel methods for transferring causal estimates between subpopulations of individuals. We suppose that within one subpopulation causal objects are readily identified, for example because an RCT has been carried out within that subpopulation, but we wish to identify and estimate causal objects for another subpopulation consisting of individuals who are all untreated. This problem nests a number of important challenges for causal inference including transfer estimates with RCTs, imperfect covariate overlap in observational studies, and extrapolating causal effects in multivariate regression discontinuity designs. Existing methods typically rely on reweighting the experimental group to balance the distribution of shared covariates between groups. These approaches can fail when unobserved factors differ between groups and affect potential outcomes. Instead, we reweight the experimental subpopulation to balance the distribution of untreated potential outcomes across subpopulations rather than observed covariates. This strategy allows for imbalance in latent variables and does not require overlap in measured covariates between groups. Under novel assumptions, our method identifies causal effects in the untreated subpopulation. When standard covariate balancing assumptions hold, our approach nests covariate balancing methods, as covariate balancing weights necessarily balance untreated potential outcomes. Our reweighting function can be interpreted as a confounding bridge in the sense of proximal causal inference, but the weights have unit mean by construction and we enforce positivity to ensure stable, interpretable estimates.

3. Victor Sancibrian, Assistant Professor at Bocconi University (PhD 2021, Center for Monetary and Financial Studies)

Estimation uncertainty in repeated finite populations

Often, datasets cover much of the population under study — think of censuses of firms or workers, or state-level panels. Yet, standard practice remains to treat the sample as drawn from a hypothetical superpopulation, and classical finite-population adjustments are of limited use since they rule out unobserved heterogeneity. In this paper, I study settings where interest is in population averages over a latent characteristic, and the data only provides noisy, repeated measurements. I show that conventional standard errors are generally too large, and propose Finite Population Corrections (FPCs) that guarantee non-conservative inference. FPCs are very simple to implement via covariance restrictions. I apply these to (i) predicting lethal police encounters using data from all U.S. police departments and (ii)

studying labor misallocation from a census of Indonesian firms. FPCs yield standard errors that properly combine uncertainty from measurement and from sampling — and lead to confidence intervals that are up to 50% shorter in these applications.

4. Martina Pons, Assistant Professor at University of Zurich (PhD 2025, University of Bern)

   Preprocessing Algorithms for the Maximum Score Estimator

5. Oriol González-Casasús, Postdoc at Pompeu Fabra University (PhD University of Pennsylvania, 2025)

   Misspecification-Robust Shrinkage and Selection for VAR Forecasts and IRFs

   joint work with Frank Schorfheide

   VARs are often estimated with Bayesian techniques to cope with model dimensionality. The posterior means define a class of shrinkage estimators, indexed by hyperparameters that determine the relative weight on maximum likelihood estimates and prior means. In a Bayesian setting, it is natural to choose these hyperparameters by maximizing the marginal data density. However, this is undesirable if the VAR is misspecified. In this paper, we derive asymptotically unbiased estimates of the multi-step forecasting risk and the impulse response estimation risk to determine hyperparameters in settings where the VAR is (potentially) misspecified. The proposed criteria can be used to jointly select the optimal shrinkage hyperparameter, VAR lag length, and to choose among different types of multi-step-ahead predictors; or among IRF estimates based on VARs and local projections. The selection approach is illustrated in a Monte Carlo study and an empirical application.

6. Julia Koh, Assistant professor at Tilburg University (PhD 2024, McGill University)

   Factor Inference under Common Components in Volatility

   joint with joint with S. Gonçalves and B. Perron

   Dependence in volatility plays a crucial role in financial applications such as portfolio allocation. However, the latent factor literature does not account for potential common components in volatility. In this paper, we introduce alternative sets of assumptions that can accommodate strong volatility dependence and develop inference methods for factor models

in this context. Three key applications are revisited: factor estimation, factor-augmented regression models, and a test for the number of factors in group factor models. Under our new assumptions, we show that the results for factor estimation and factor-augmented regression models are not affected. However, we find that the variance of the test statistic for the number of factors in the group model is modified. We propose a new estimator and prove its consistency.

7. Kamila Nowakowicz, Lecturer at University of Surrey (PhD 2025, London School of Economics)

Nonparametric Network Bootstrap

Inference on network data is challenging due to the strong dependence between observations, which renders standard techniques incorrect. To address this, I propose a valid bootstrap procedure for network data based on a nonparametric linking function estimator. I characterise the conditions under which this estimator is uniformly consistent. I prove that the distribution of the bootstrap network is consistent for the distribution of the original network in terms of a Wasserstein distance. I also provide conditions under which distributions of a class of functions related to U-statistics on the bootstrapped networks consistently replicate the distributions of the corresponding statistics on the original network. Monte Carlo simulations show good confidence interval coverage for a wider class of network functions than those accounted for by my theory. I apply my method to the data from Banerjee, Chandrasekhar, Duflo, and Jackson (2013): I replicate their findings, but also show that my method works under weaker assumptions and with a significantly smaller sample size. Finally, I propose an alternative specification of their model which takes advantage of my linking function estimator and may be of interest independently of my bootstrap procedure.

8. Jad Beyhum, Associate Professor at KU Leuven (PhD 2020, Toulouse School of Economics).

Approximate Operator Inversion for Average Effects in Nonlinear Panel Models
joint with Geert Dhaene, Cavit Pakel, Martin Weidner

We study the estimation of average effects in nonlinear panel data models with fixed effects when the time dimension T is only moderately large. Our approach, called approximate op-

erator inversion (AOI), offers a new perspective on bias correction. Instead of first estimating unit-specific fixed effects and then correcting the resulting plug-in bias, AOI approximately inverts the likelihood-induced mapping from the fixed-effect distribution to the outcome distribution. AOI can be interpreted as the limit of an infinitely iterated bias correction scheme, and this limit is available in closed form. We show that the bias of the AOI estimator has a rate double robustness property and converges to zero at an exponential rate in T under regularity conditions. Our asymptotic theory requires $T \to \infty$, but the exponential convergence rate of the bias means that finite-sample performance is very good even for moderately large T. We establish asymptotic normality and provide feasible inference.

9. Rosnel Sessinou, Lecturer at University of Surrey (PhD 2022, Aix-Marseille University)

Robust Inference in Large Panels and Markowitz Portfolios

joint work with D. Ardia

We propose a general framework for testing the significance of parameters in large panels of multiple linear regression models, focusing on mean-variance spanning (MVS) tests. The proposed methodology is versatile and applicable even when the number of equations is large, requiring only stationary data, and allows the number of regressors to grow asymptotically toward the sample size. Monte Carlo simulations demonstrate that the testing procedure maintains correct size and power, even when residuals exhibit asymmetry, fat-tails, serial correlation, and GARCH effects, outperforming existing methods. We apply the methodology to assess whether including blue-chip stocks from the U.S., Europe, and Switzerland enhances each country's domestic mean-variance efficient frontier. The findings suggest that the benefits of international diversification depend on economic conditions and vary by country, with the rejection of the MVS hypothesis linked to variance reduction within the domestic global minimum-variance portfolios.

10. Vincent Starck, Assistant Professor at Ludwig-Maximilians-University Munich (PhD 2023, Brown University)

Peer Effect Analysis with Latent Processes

I study peer effects that arise from irreversible decisions in the absence of a standard social equilibrium. I model a latent sequence of decisions in continuous time and obtain a closed-form expression for the likelihood, which allows to estimate proposed causal estimands.

The method avoids regression on conditional expectations or linear-in-means regression by modeling the (possibly unobserved) realized direction of causality, whose probability is identified. I provide identification and estimation results under two settings, several networks and one large network, while allowing for various forms of peer effect heterogeneity. Estimation proceeds by maximum likelihood methods and parameters lend themselves to standard inference.

11. Xiaolin Sun, Lecturer at University of Manchester (PhD 2022, Simon Fraser University)

Conditional Moment Restriction Approach for Panel Data: Revisiting the Democracy-Growth Relationship

This paper introduces a new estimator for studying the relationship between democracy and economic growth in a panel data setting. Our approach utilizes conditional moment restrictions directly, based on the foundational work of Bierens (1982), i.e., the Integrated Conditional Moment (ICM) principle, eliminating the need for parametric assumptions about the relationship between the instrument and democracy. This method reduces model specification biases and enhances estimation efficiency. Under regularity assumptions, our new estimator is consistent and asymptotically normal. Applied to data from Acemoglu et al. (2019), our method produces positive estimates of democracy's impact on log GDP per capita, similar to 2SLS results but with lower standard errors. This yields more statistically significant estimates of long-term gains from democracy..

12. Mengshan Xu, Assistant Professor at University of Mannheim (PhD 2021, London School of Economics)

Semiparametric and nonparametric instrumental variable estimation with first-stage isotonic regression

joint work with Kazuhiko Shinoda and Taisuke Otsu

This paper proposes a semiparametric and a nonparametric instrumental variable (IV) estimator, under the assumption that the conditional mean of the endogenous variable, given the instrumental variable, is known to be monotone increasing. We employ isotonic estimation to obtain the fitted instruments in the first stage of a two-stage semiparametric or nonparametric estimation procedure. We show that the proposed semiparametric IV estimator is tuning-parameter-free and achieves the semiparametric efficiency bound. Moreover,

we show that compared to the nonparametric two-stage least squares estimator (Blundell, Chen and Kristensen, 2007; Horowitz, 2011, 2012), our proposed nonparametric IV estimator requires notably fewer tuning parameters and achieves the same convergence rate. Additionally, it exhibits greater stability as evidenced by Monte Carlo simulations.

13. Andrei Zeleneev, Assistant Professor at University College London, (PhD 2020, Princeton University)

Identification Using Internal Instruments in Large Panel Models

We present a novel approach to causal identification and estimation with large N and T panel data without external instruments. Existing approaches aim to extract and purge individual- and/or period-specific factors from the outcomes and continuous treatments. They assume that the remaining idiosyncratic variation in treatment is exogenous. By contrast, we exploit the presence of exogenous an period-specific factor or factors (internal instruments) to identify causal effects. Thus our approach is applicable when idiosyncratic variation in the continuous treatments (sources of variation that vary both over time and between individuals) is endogenous. Aggregate shocks (i.e., factors that vary over time but not between individuals) are commonly used to identify causal effects, but existing studies require that these shocks are directly observed, using them as external instruments. Our analysis demonstrates that causal effects are identifiable in such settings even if these aggregate shocks are unobserved. Our results allow for the presence of both endogenous and exogenous period-specific factors, and indeed the latter may only be exogenous after controlling for the former. Our identification results extend to settings with heterogeneous causal effects and to non-parametric additive models with heterogeneity. We propose a practical estimation method and provide simulation evidence of its efficacy.

14. Lina Zhang, Assistant Professor at University of Amsterdam (PhD 2021, Monash University)

Policy Relevant Treatment Effects with Multidimensional Unobserved Heterogeneity

joint work with Takuya Ura

This paper provides a unified framework for bounding policy relevant treatment effects using instrumental variables, in which the treatment selection may depend on multidimensional unobserved heterogeneity. We derive bilinear constraints on the target parameter based on

identifiable estimands. We apply a convex relaxation method to these bilinear constraints and provide conservative yet computationally simple bounds. Our proposed bounds extend and robustify the bounds by Mogstad, Santos, and Torgovitsky (2018) which require the threshold-crossing structure for the treatment: if this condition holds, our bounds are simplified to theirs for a large class of target parameters; even if it does not, our bounds include the true parameter value whereas theirs may not and are sometimes empty. Linear shape restrictions can be easily incorporated to narrow the proposed bounds. Numerical and simulation results illustrate the informativeness of our convex-relaxation bounds.

Conference Venue

The conference venue is

Nuffield College, New Road, Oxford OX1 1NF

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