1st BESLAB Summer School on Computational and Experimental Economics, Barcelona

Sunday, June 12th 2022-Saturday, June 18th 2022.

Sunday, June 12, 2022: Introduction

10:00-11:00	**Welcome.** Introduction.
11:00-11:30	Coffee break
11:30-13:00	**Rosemarie Nagel**: Basics of the Experimental Methodology **Participation in Experiment online, prior to summer school** (Beauty Contest) **Readings:** Handbook of Experimental Econ, Kagel and Roth (2016), Mauersberger, F. and Nagel, R. (2018). Levels of Reasoning in Keynesian Beauty Contests: A Generative Framework in the Handbook of Computational Economics, Volume 4, Heterogeneous Agents. Editors: Cars Hommes and Blake LeBaron. Amsterdam: North-Holland. Bosch, A., J. G. Montalvo, R. Nagel, A. Satorra (2010). Finite Mixture Analysis of Beauty-Contest Data from Multiple Samples, *Experimental Economics* vol. 13(4): 461-475.
	Lunch
14:30-16:00	**John Duffy, Herbert Dawid:** Agent-based Models and Human Subject Experiments **Readings:** "Agent-Based Models and Human Subject Experiments." Handbook of Computational Economics. Vol 2: pp 949-1011. 'Agent-based Macroeconomics' in the Handbook of Computational Economics, Vol. 4: pp. 63-156
16:00-16:30	Coffee break
16:30-18:00	**Yaroslav Rosokha** **Hands-on:** Programming Simple Agent-based Models; Best practices

Monday June 13, and Tuesday, 14: Computational and Experimental Economics Workshop (BSE Summer fórum)

Student participation required, by the end of the two days, students should split up into groups and decide on project.

Wednesday, June 15: Markets

09:30-11:00	**Rosemarie Nagel**: Overview of Market Experiments. **Participation in Experiment** (Double Auction) **Readings:** Smith, V., L.. G. L. Suchanek & A. W. Williams (1988) "Bubbles, Crashes, and Endogenous Expectations in Experimental Spot Asset Markets" *Econometrica* Vol. 56, No. 5 (Sep., 1988), pp. 1119-1151 (33 pages). Gode, D. K & Sunder, S, 1993. "Allocative Efficiency of Markets with Zero-Intelligence Traders: Market as a Partial Substitute for Individual Rationality," *Journal of Political Economy*, University of Chicago Press, vol. 101(1), pages 119-137,
11:00-11:30	Coffee break
11:30-13:00	**Herbert Dawid:** Market Simulations **Readings:** Arifovic, J. (1994), "Genetic Algorithm learning and the Cobweb model", Journal of Economic Dynamics and Control, 18, 3-28. Dawid, H. and Kopel, M. (1998), "The Appropriate Design of a Genetic Algorithm in Economic Applications Exemplified by a Model of the Cobweb Type", Journal of Evolutionary Economics, 8, 297-315. Vriend, N. (2000), "An illustration of the essential difference between individual and social learning, and its consequences for computational analyses", Journal of Economic Dynamics and Control 24, 1-19. Calvano, E., G. Calzolari, V. Denicolò, and S. Pastorello (2020), "Artificial Intelligence, Algorithmic Pricing, and Collusion", American Economic Review, 110, 3267-3297.
	Lunch
14:30-16:00	**Yaroslav Rosokha** **Hands-on:** Programming Gode & Sunder (1993), Arifovic (1994)

16:00-16:30	Coffee break
16:30-18:00	**Group session:** work on project
20:00	Summer School Dinner. Restaurant

Thursday, June 16: Two-player Games

09:30-11:00	**Yaroslav Rosokha:** Overview of Repeated Games Experiments **Participation in Experiment** (Repeated PD) **Readings:** Dal Bó, Pedro, and Guillaume R. Fréchette. "On the determinants of cooperation in infinitely repeated games: A survey." Journal of Economic Literature 56, no. 1 (2018): 60-114.
11:00-11:30	Coffee Break
11:30-13:00	**Yaroslav Rosokha:** Reinforcement Learning **Readings:** Erev, Ido, and Alvin E. Roth. "Predicting how people play games: Reinforcement learning in experimental games with unique, mixed strategy equilibria." American economic review (1998): 848-881.
	Lunch
14:30-16:00	**Yaroslav Rosokha** **Hands-on:** Learning to Cooperate with RL
16:00-16:30	Coffee break
16:30-18:00	**Group session:** work on project

Friday, June 17: Multi-player Games

09:30-11:00	**John Ledyard:** Overview of Public Goods Experiments. **Participation in Experiment** (VCM) **Readings: Handbook of Experimental Econ, Kagel and Roth (2016), Section 2**
11:00-11:30	Coffee Break
11:30-13:00	**John Ledyard:** Individual Evolutionary Learning **Readings:** Arifovic, Jasmina, and John Ledyard. "A behavioral model for mechanism design: Individual evolutionary learning." Journal of Economic Behavior & Organization 78, no. 3 (2011): 374-395. Arifovic, Jasmina, and John Ledyard. "Individual evolutionary learning, other-regarding preferences, and the voluntary contributions mechanism." Journal of Public Economics 96, no. 9-10 (2012): 808-823. Arifovic, Jasmina, and John Ledyard. "Learning to Alternate." Experimental Economics 21,no.3, (2018) 692-721. Arifovic, Jasmina, Donmez, Anil, Ledyard, John, and Megan Tjandrasuwita. "Individual Evolutionary Learning and Zero-Intelligence in the Continuous Double Auction." To appear in the Handbook of Experimental Finance.
	Lunch
14:30-16:00	**Yaroslav Rosokha** **Hands-on:** Programming IEL or Miller 1996
16:00-16:30	Coffee break
16:30-18:00	**Group session:** work on project

Saturday, June 18: Conclusion

09:30-11:00	**John Ledyard, Rosemarie Nagel, and Yaroslav Rosokha:** Discussion of open questions at the intersection of computational and experimental economics **Readings: To Be Confirmed**
11:00-11:30	Coffee break
11:30-13:00	**Group session:** work on project
	Lunch
14:30-16:30	**Student presentations**