

International Summer School



**Empirical Methods
in Market Microstructure Research**

9/13 July, 2018

AGNONE, ITALY

UNDER THE PATRONAGE OF



COMUNE
DI AGNONE



ACCADEMIA ITALIANA
DI ECONOMIA AZIENDALE



THE SUMMER SCHOOL
SCIENTIFIC COMMITTEE

Prof. Francesco Capalbo
University of Molise

Prof. Alex Frino
CMCRC

Prof. Claudio Lupi
University of Molise

Prof. Riccardo Palumbo
ECMCRC

Prof. Alberto Pozzolo
University of Molise

The Department of Economics of the University of Molise, in collaboration with ECMCRC (European Capital Markets Cooperative Research Centre) and CMCRC (Capital Markets Cooperative Research Centre), is organizing an International Summer School on “Empirical Methods in Market Microstructure Research”.

The Summer School will take place from 9 to 13 July, 2018, and it is hosted in the beautiful medieval town of Agnone, located in the upper part of Molise.

Conducted in English, the programme addresses graduate and postgraduate students from Economics with background knowledge in introductory finance and basic statistics.

The programme deals with empirical market microstructure research; it aims at investigating the impact of regulation or market structure on the quality and efficiency of markets, through a combination of introductory classes on how to conduct empirical research and “hands on” practical work in computer laboratory sessions. This course is designed to provide students with an understanding of (1) approaches to empirical tests in market microstructure research, (2) Thompson Reuters Tick History (TRTH) data and how it can be used to conduct empirical tests, and (3) the SAS language and how it can be used to analyse large datasets (Big Data) comprised of billions of observations.

The University of Molise is one of the youngest Italian higher education institutions. The Department of Economics plays a leading role in education and research, as well as in the international commitment and collaboration with social enterprises and corporations on the territory.

The European Capital Markets Cooperative Research Centre (ECMCRC) Foundation operates as a not for profit scientific institution towards promoting and facilitating capital markets research amongst member universities and industry partners on European capital markets, and providing data for academic research purposes.

The Capital Markets Cooperative Research Centre (CMCRC) is Australia’s leading research and development organisation providing break-through technology solutions for capital and health markets and assuring market quality. CMCRC examines issues in health economics and finance, provides consulting, as well as funding for innovation and scholarship programs.

We are looking forward to meeting you in Agnone in summer 2018.

Empirical methods in market microstructure research

Empirical market microstructure research often examines the impact of regulation or market structure (or changes in them) on the quality or efficiency of markets. A typical microstructure “experiment” will require independent (explanatory) and dependent variables to be specified and measured using commonly available databases, and then conduct analysis in order to ascertain the impact of the independent variables on the dependent ones. This analysis usually requires the implementation of sampling procedures (e.g., event study methods or matched pairs sampling) as well as statistical tests (e.g., t tests or regression analysis).

This course is designed to provide students with an understanding of (1) approaches to empirical tests in market microstructure research, (2) Thompson Reuters Tick History (TRTH) data and how it can be used to conduct empirical tests, and (3) the SAS language and how it can be used to analyse large datasets (Big Data) comprised of billions of observations.

The course is designed for students with little or no experience in conducting empirical research in market microstructure, and introduces them to common variables and methodologies used to conduct empirical research. This is followed by “hands on”

practical work in computer laboratory sessions. The aim is to enable students to replicate the empirical analysis in a number of seminal (empirical) microstructure papers, and eventually to be able to design and conduct their own empirical microstructure research. Students are expected to have some background knowledge in introductory finance and basic statistics.

LEARNING CLASSES AND LABORATORIES

27 HOURS IN TOTAL

2 x 4.5 hour classes are intended to offer the necessary background of statistics and finance.

The remaining 18 hour classes are divided into 7 hours of lectures and 11 hours of lab sessions.

Learning also includes direct engagement with researchers and scholars during a dedicated session.

Who should apply?



The **EMMMR School** is targeted to those who would like to supplement their current studies and research in the field of financial markets.

The EMMMR Summer School, taught entirely in English, is intended for Master’s degree students*, PhD students, recent graduates and assistant researchers in all subjects related to the Summer School topics.

Summer School prize winning

Capital Market CRC, a leading research and development organisation assuring market quality, will offer the best performing student a grant of up to 5,000 AUD for reimbursement of costs to spend 3 weeks visiting its headquarter in Sydney to work on a specific research project. The

student, depending on his/her performance, will be offered the possibility to join one of the CMCRC PhD programs. The PhD program has a duration of 3 years, to be spent mainly in Sydney, and the student, if successful, will benefit of **annual scholarship of AUD 50,000**.



* this category is restricted to University of Molise students

Scientific Committee

Francesco Capalbo

PROFESSOR OF ACCOUNTING
University of Molise, Italy



He is currently a member of the International Public Sector Accounting Standard Board (IPSASB) in Toronto (Canada). He has authored many publications on leading journal on financial accounting issues and he has held visiting academic positions at several universities including the University of Gent (Belgium), University of Birmingham (UK), the University of Sydney (Australia), and the Macquarie Graduate Management School of Sydney, where he is currently Adjunct Professor of Accounting and Finance. His current areas of research include public accountability and financial statements quality of public sector entities and State owned entities. He sat on the Scientific Committee of the Internal Training Board of the Italian Auditor General (Corte dei Conti) and chaired the Department of Accounting of the Local State Council. He holds a PhD in international accounting from the University of Naples "Federico II".

Alex Frino

DEPUTY VICE-CHANCELLOR
PROFESSOR OF FINANCE
University of Wollongong, Australia



He is a distinguished economist who fosters the interaction of business with academe. He is an alumnus of UOW and Cambridge University, and is also a former Fulbright Scholar. He is one of the best published finance academics in the world with over 100 papers in leading scholarly journals. He has won over \$10 million in national competitive research funding and is frequently cited by the major mainstream global press. He was previously Chief Executive Officer of the Capital Markets Cooperative Research Centre Limited – a \$100 million research installation funded by the Australian Federal Government and partnering with 20 major global financial corporations. He has held visiting academic positions at leading Universities in Italy, New Zealand, the UK and the United States. He has also held positions with leading financial market organisations including the Sydney Futures Exchange, Credit Suisse and the Commodity Futures Trading Commission in the USA. He is regularly called upon to act as an independent expert witness in major Australian court cases and has acted as a consultant to many large Australian listed companies.

Claudio Lupi

PROFESSOR OF ECONOMIC STATISTICS
University of Molise, Italy



He was formerly Research Director at the Institute for Studies and Economic Analyses (Isae), a public economic research institute based in Rome, and senior researcher at the Italian National Institute of Statistics (Istat). His research has been published in a number of international journals, including Information Sciences, Journal of Statistical Software, Labour Economics, Oxford Bulletin of Economics and Statistics, Oxford Economic Papers, Physica A: Statistical Mechanics and its Applications, Reliability Engineering and System Safety. Prof. Lupi graduated in Economics from "La Sapienza" University in Rome and holds a Doctoral degree in economics from "Federico II" University in Naples and a Ph.D. in Economics from the University of Oxford.

Alberto Franco Pozzolo

PROFESSOR OF ECONOMICS
University of Molise, Italy



He was formerly an economist in the Research Department of the Bank of Italy. His research has been published in international journals, including the Journal of Monetary Economics, the Journal of International Economics, and the Journal of Business. He is currently working on empirical banking and FDIs. Mr. Pozzolo graduated in Economics from Bocconi University in Milan and holds a Doctoral degree in economics from the University of Ancona and a Ph.D. in Economics from the University of Southampton. He has visited a number of international universities, including the University of Chicago, Cass School of Business and Bingham Normal University.

Riccardo Palumbo

PROFESSOR OF ACCOUNTING
AND BEHAVIOURAL FINANCE
University "G. D'Annunzio", Italy



He coordinates (a) the Unit of Behavioral Economics and Neuroeconomics (Department of Neuroscience and Imaging), (b) the Laboratory of Behavioural Economics, Human Centered Design & Health Care (CEsI-MET) and (c) the PhD program on Business and Behavioural Sciences at the University "G. D'Annunzio" of Chieti-Pescara. His research specialization includes behavioural economics and finance and capital markets based research in accounting. He has presented seminars at a number of leading Universities in Europe and Australia. He has held a number of research positions including as a visiting professor at the University of Sydney and as a visiting scholar at the Capital Markets Cooperative Research Centre (Sydney) and at the Macquarie Graduate School of Management. CEO of the European Capital Markets Cooperative Research Centre (www.ecmcr.org) he holds a PhD in International Accounting from the University "Federico II" of Naples.

TOP LEVEL

ACADEMICS

at forefront

of INTERNATIONAL

RESEARCH

FACULTY

Prof. Alex Frino
(University of Wollongong)

Prof. Claudio Lupi
(University of Molise)

Prof. Alberto F. Pozzolo
(University of Molise)

Dr. Ivy Zhou
(University of Wollongong)

Timetable

DATE	TIME	LECTURE	LAB
9 July	2.00 pm 6.30 pm	Statistical methods	
10 July	9.00am 1.30pm	Theoretical modelling financial market microstructure	
10 July	2.30pm 5.30pm	An introduction to empirical microstructure research & Variables typically examined in microstructure research - Part I	
11 July	9.00am 1.00pm	Variables typically examined in microstructure research Part II & The event study methodology	
11 July	2.30pm 5.30pm		Lab 1 An introduction to SAS and TRTH data – reading data and calculating simple statistics
12 July	9.00am 1.00pm		Lab 2 Calculation of variables typically used in microstructure research Lab 3 Conducting cross-sectional and time series regression analysis
13 July	9.00am 1.00pm		Lab 4 Event study – An examination of market behaviour around defined information events

Suggested Readings

PRESCRIBED

DELWICHE AND SLAUGHTER, 2012
The Little SAS Book
SAS Institute Inc.

HARRIS, 1994
Minimum price variations, discrete bid-ask spreads, and quotations sizes
Review of Financial Studies, 149-178

HOLTHAUSEN, ROBERT W., RICHARD W. LEFTWICH, AND DAVID MAYERS, 1990
Large-block transactions, the speed of response, and temporary and permanent price effects
Journal of Financial Economics 26, 71-95

MCINISH AND WOOD, 1992
An analysis of intraday patterns in bid/ask spreads for NYSE stocks
Journal of Finance 47, 753-764

PATELL AND WOLFSON, 1984
The intraday speed of adjustment of stock prices to earnings and dividend announcements
Journal of Financial Economics, 223-252

WOOD, MCINISH AND ORD, 1985
An investigation of transaction data for NYSE stocks
Journal of Finance

BACKGROUND

FOUCAULT, PAGANO AND ROELL, 2013
Market Liquidity: Theory, Evidence, and Policy
Oxford University Press



An **INTERNATIONAL**

NETWORK of peers

at the meeting **POINT**

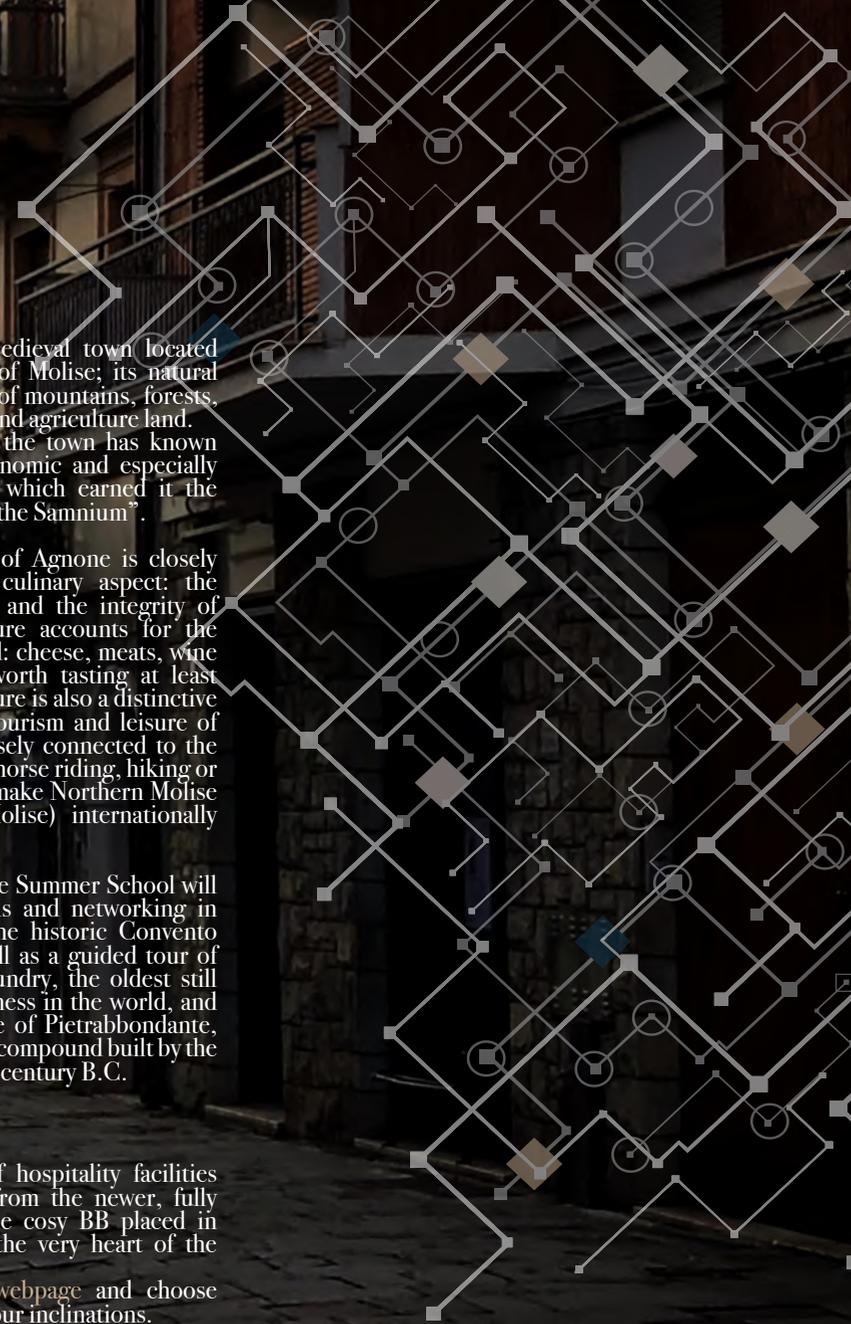
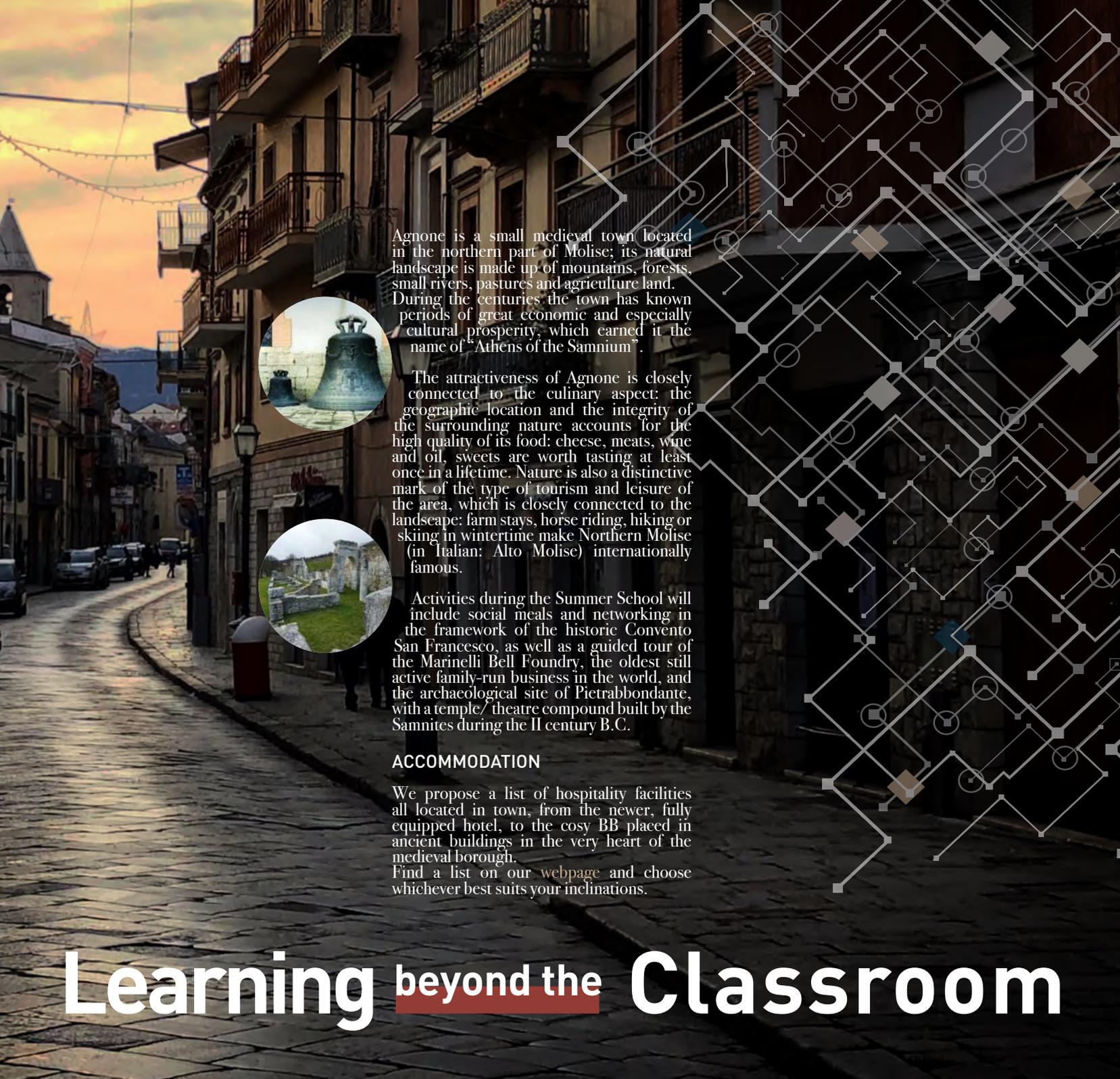
between **STUDY**

and **RESEARCH**

FINAL ASSESSMENT

4 LABORATORY ASSIGNMENTS WORTH 25 PERCENT EACH = 100%

Students will have **one week** to complete their laboratory assignments and are required to hand in the results of their analysis, a print-out of their SAS codes and a short (1 page) write-up of their results **for each lab assignment**



Agnone is a small medieval town located in the northern part of Molise; its natural landscape is made up of mountains, forests, small rivers, pastures and agriculture land. During the centuries the town has known periods of great economic and especially cultural prosperity, which earned it the name of "Athens of the Samnium".



The attractiveness of Agnone is closely connected to the culinary aspect: the geographic location and the integrity of the surrounding nature accounts for the high quality of its food: cheese, meats, wine and oil, sweets are worth tasting at least once in a lifetime. Nature is also a distinctive mark of the type of tourism and leisure of the area, which is closely connected to the landscape: farm stays, horse riding, hiking or skiing in wintertime make Northern Molise (in Italian: Alto Molise) internationally famous.



Activities during the Summer School will include social meals and networking in the framework of the historic Convento San Francesco, as well as a guided tour of the Marinelli Bell Foundry, the oldest still active family-run business in the world, and the archaeological site of Pietrabbondante, with a temple / theatre compound built by the Samnites during the II century B.C.

ACCOMMODATION

We propose a list of hospitality facilities all located in town, from the newer, fully equipped hotel, to the cosy BB placed in ancient buildings in the very heart of the medieval borough. Find a list on our webpage and choose whichever best suits your inclinations.

HOW TO APPLY

To apply please complete the application form available on the Summer School website and return it to EMMMR@unimol.it with the required attachments. The deadline for submission is 30 April 2018. Places will be awarded on a first come first served basis, provided that the application meets the participation criteria and is relevant for its overall strength.

FEES

The participation fee to the Summer School is **200€**. This fee includes all teaching, social activities, some meals and transfer from and to Isernia on shuttle bus. All other expenses incurred by Participants are chargeable to themselves only. Admitted applicants who accept the place shall agree to pay the programme fees in full within 15 days of notification of acceptance. **Failure to do so, will result in the applicant's cancellation.**

A **LEARNING**

ENVIRONMENT

where **INNOVATION**

in teaching and research

meets ancient **HISTORY**

and **CULTURE**

Learning **beyond the** Classroom

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