



ExCiTing News

Bira van Kolck
Director



NuPECC meeting, April 2025

Outline

Mission & Structure

Board & research

2025 activities

Call for 2026 proposals

Virtual platforms

Funding



ECT* mission

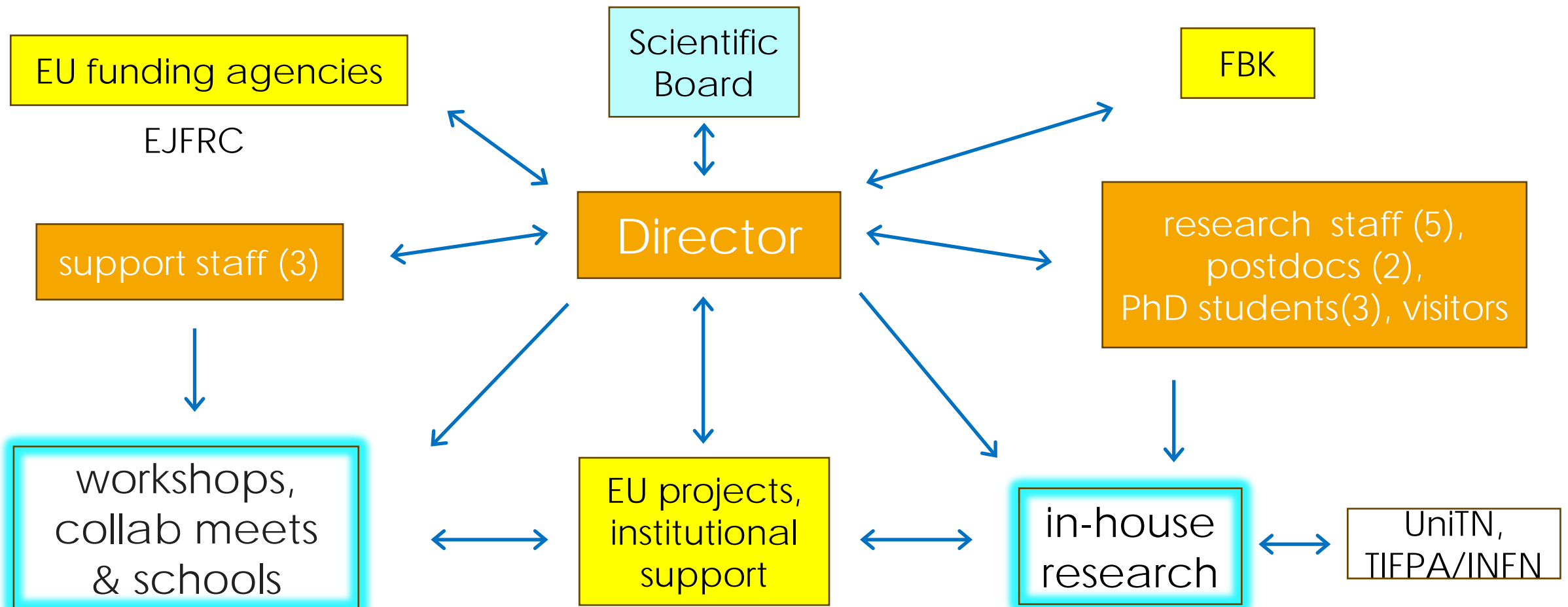


- ✓ to be a center at the frontline of research in nuclear theory
- ✓ to promote contact with experiment and related areas
- ✓ to further train young researchers

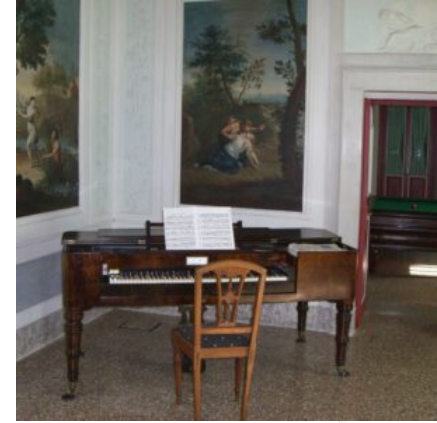
Unique venue in the
European nuclear
ecosystem

- established in 1993 in community-driven approach that continues today
- funding through EU funding agencies, institutions, and projects
- sponsored by Province of Trento, now through Fondazione Bruno Kessler
- institutional member of NuPECC

ECT* structure



Scientific Board news



Sonia Bacca | University of Mainz (D)

Gilberto Colangelo | University of Bern (CH)

Denis Lacroix | CNRS/IN2P3 (F)

Gail McLaughlin | NC State University (USA)

Alexandre Obertelli | TU Darmstadt (D)

Assumpta Parreño Garcia | University of Barcelona (E)

Barbara Pasquini, Board Chair | University of Pavia (I)

Vittorio Somà | CEA Saclay (F)

Eberhard Widmann | NuPECC / Stefan Meyer Institute, Austrian Academy of Sciences (A)

Ex officio: Albino Perego | University of Trento (I)

first Board meeting: Jan 2025

last Board meeting: June 2025

Da: ECT* Direzione <direzione@ectstar.eu>

Data: 16 gennaio 2025 alle ore 08:29:23 CET

A: undisclosed-recipients;

Oggetto: Call suggestions new member ECT* Scientific Board

Dear ECT* Associate,

we are looking for suggestions concerning the nomination of **a new member of the ECT* Scientific Board.**

The mandate of Denis Lacroix will end in June 2025. The ECT* Scientific Board is particularly interested in researchers working on strongly interacting matter at extreme conditions. The Board aims for a broad representation in terms of scientific experience, nationality and gender. Suggestions that reflect this modern idea of diversity will receive particular attention.

Please send your suggestions, together with a short statement about suitability, not longer than 200 words, by e-mail to Susan Driessen (driessen@ectstar.eu). To be useful, your e-mail should arrive no later than **May 01, 2025.**

Best regards,

Ubirajara van Kolck

Director ECT*

Research update



02 October 2024

ECT* WELCOMES NEW POSTDOCTORAL ASSOCIATE

On October 1st Dr. Elena Filandri arrived to ECT* with a splash: on the very same day, her article on dark matter scattering in nuclei appeared in Phys. Rev. C as an "Editors' suggestion".

[More info](#)

effective field theories in nuclear physics
light and halo nuclei
dark matter scattering on nuclei

05 February 2025

ECT* WELCOMES LUCAS MADEIRA

Dr. Lucas Madeira has arrived as a TIFPA/ECT* postdoc!

[More info](#)

Main research
interests

quantum Monte Carlo methods
cold atoms
chiral effective field theory

Workshops in 2025

in-person attendance + remote participation



- *Key Reactions in Nuclear Astrophysics*
17-21 Feb | **41** | EURO-LABS, INFN, FRIB, IReNA
- *Scale Setting: precision Lattice QCD for particle and nuclear physics*
03-07 Mar | **21** + 2 | U Regensburg
- *Holographic Perspectives on Chiral Transport and Spin Dynamics*
24-28 Mar | **36** | INFN, U Autónoma de Madrid, CE Severo Ochoa
- *Mechanical Properties of Hadrons: structure, dynamics, visualization*
31 Mar - 4 Apr | **19** + 9 | INFN, UConn, JLab

- *Lepton Flavor Change in Nuclei*
14-18 Apr | **20** (expected)

Workshops in 2025

in-person attendance



- *Quantum Science Generation 2025*
05-09 May | **65** (expected)
- *Nonequilibrium Phenomena in Superfluid Systems: atomic nuclei, liquid helium, ultracold gases, and neutron stars*
12-16 May | **45** (expected)
- *The Complex Structure of Strong Interactions in Euclidean and Minkowski Space*
19-23 May | **40** (expected)
- *Universality in Strongly Interacting Systems: from QCD to atoms*
09-13 June | **25** (expected)
- *Theory Service for the Low-Energy Nuclear Physics Community: a hands-on workshop*
07-09 July | EURO-LABS | **40** (expected)

Workshops in 2025

in-person attendance



- *Next-Generation Ab Initio Nuclear Theory*
14-18 July | **35** (expected)
- *Penetrating Probes of Hot High- μ_B Matter: theory meets experiments*
21-25 July | **40** (expected)
- *New Perspectives in the Charge-Radius Determination for Light Nuclei*
28 July – 1 Aug | **40** (expected)
- *Bridging Analytical and Numerical Methods for Quantum Field Theory*
25-29 Aug | **35** (expected)
- *Hamiltonian Lattice Gauge Theories: status, novel developments, and applications*
01-05 Sept | **45** (expected)

Workshops in 2025

in-person attendance



- *Analytical Structure of QCD and Lee-Yang Edge Singularity*
08-12 Sept | **25** (expected)
- *Attractors and Thermalization in Nuclear Collisions and Cold Atom Gases*
22-26 Sept | **40** (expected)
- *Superconducting Devices for Quantum Optics and Quantum Simulations*
06-09 Oct | **50** (expected)
- *Pan-American Few-Body Physics Boot Camp: fostering collaboration*
13-24 Oct | **30** (expected)
- *Neutron Capture Reactions for Astrophysical Processes*
03-07 Nov | **40** (expected)

Workshops in 2025

in-person attendance

- *Information and Statistics in Nuclear Experiment and Theory*
17-21 Nov | **45** (expected)
- *Multi-Canonical Methods and Lattice Field Theory*
01-05 Dec | **40** (expected)



DTP 2025: *Quantum Computing for Nuclear Physics*

16 June -- 04 July 2025

Organizers:

- A. Bazavov (Michigan State U)
- Z. Davoudi (U Maryland)
- M. Hjorth-Jensen (U Oslo & MSU)
- R. Larose (MSU)
- D. Lee (MSU)
- A. Roggero (U Trento)

application deadline: 11 April

Quantum Computing for Nuclear Physics

16 June – 4 July, 2025

ECT* Villa Tambosi, Villazzano



Aim of the School

This Nuclear Talent school aims at bringing together the efforts of nuclear many-body theorists, quantum information theorists, and mathematicians in order to present and discuss algorithms for studying nuclear systems using recent progress in quantum information theory.

Organizers and Lecturers

- Alexei Bazavov, Michigan State University
- Zorich Davoudi, University of Maryland
- Morten Hjorth-Jensen, Michigan State University and University of Oslo
- Ryan LaRose, Michigan State University
- Dean Lee, Michigan State University
- Alessandro Roggero, University of Trento

Student coordinators and Advisors

- Morten Hjorth-Jensen
- Alessandro Roggero

Application

Applications for the ECT* TALENT-DTP 2025 should be made electronically through the ECT* web page. It should include: a curriculum vitae, a 1-page description of academic and scientific achievements, a short letter expressing the applicant's personal motivation for participating in the School. In addition, a reference letter from the candidate's supervisor should be sent to Barbara Gazzo (gazzo@ectstar.eu) for the attention of the Director of ECT*. For further details see www.ectstar.eu

ECT* Director: Prof. Ubirajara van Kolck

The ECT* is part of the Fondazione Bruno Kessler. The Centre is funded by the Autonomous Province of Trento, funding agencies of EU Member and Associated states, and by INFN-TFRS and has the support of the Department of Physics of the University of Trento.

For the organization please contact: Susan Steiner – ECT* Secretary - Villa Tambosi - Strada della Tabarella 266 - 38123 Villazzano (Trento) - Italy | Tel: +39-0461 314710, E-mail: steiner@ectstar.eu

All areas of nuclear physics and more



- hard, hot & dense QCD:
chiral transport, probes, singularities, thermalization, Hamiltonian methods, multicanonical methods
- hadronic physics:
scale setting, mechanical properties, Green's Functions, analytical/numerical methods
- nuclear structure and reactions:
theory tools for experiment, *ab initio* theory, charge radii, few-body physics
- nuclear astrophysics:
key reactions, neutron-capture reactions
- symmetries & fundamental interactions:
lepton-flavor violation
- related areas:
quantum science, universality, superfluids, superconducting devices, uncertainty quantification

CALL FOR 2026 PROJECT PROPOSALS

We welcome proposals for projects to take place at ECT* in 2026. Projects can be workshops or collaboration meetings. Other formats can be proposed and will be evaluated by the Board on a case-by-case basis. Decisions on approvals will be made at the Scientific Board meeting in June and October 2025.

The topics of the planned activities should be in line with the main scientific interests of ECT*, i.e. nuclear physics in a broad sense. This involves nuclear structure and reaction dynamics, nuclear astrophysics, Quantum Chromodynamics and hadron physics, strongly interacting matter under extreme conditions, and symmetries and fundamental interactions. Topics can also be in related areas, such as particle physics, astroparticle physics and cosmology, methods of quantum field theory, condensed-matter physics, the physics of ultra-cold atomic gases, nuclear physics tools, machine learning, artificial intelligence, quantum computing, experimental techniques and methods.

The Scientific Board encourages the group of organizers to reflect diversity and combine established and early-career researchers.

Click [here](#) for a template of the form for proposals in Word, PDF and Latex format.

Please send the form no later than **May 26, 2025** by email to: driessen@ectstar.eu.

Encourage your scientists to submit proposals!

<https://www.ectstar.eu/activities/workshops/call-for-2026-project-proposals>

INFO

Workshops

[Guidelines for Workshop Organizers](#)

[Participant Information](#)

[Introductory Talks](#)

[Past Workshops](#)

Doctoral Training Program

[TALENT School](#)

[Seminars and Colloquia](#)

[Visiting Program](#)

[Virtual Platforms](#)

[ECT* Code of Conduct](#)

[Call for 2026 Project Proposals](#)

Virtual Platforms



New initiative: a home for theory tools (lectures, simulators, *etc.*)
for the nuclear physics community

VIRTUAL PLATFORMS

ECT* offers virtual access to theoretical tools developed for the benefit of the nuclear physics and related communities.

LaVA – Lattice Virtual Academy

LaVA is a platform for an evolving collection of e-learning materials in the area of lattice field theory, a powerful computational method for nuclear and particle physics which is rapidly expanding to artificial intelligence and quantum computing. The platform is organized by topics (essentials, algorithms, *etc.*) and by level (beginners, advanced, experienced researcher) for easy access by users.

[Access to the LaVA platform](#)

ACTIVITIES@ECT*

[Workshops](#)

[Doctoral Training Program](#)

[TALENT SCHOOL](#)

[Seminars and Colloquia](#)

[Visiting Program](#)

[Virtual Platforms](#)

[ECT* Code of Conduct](#)

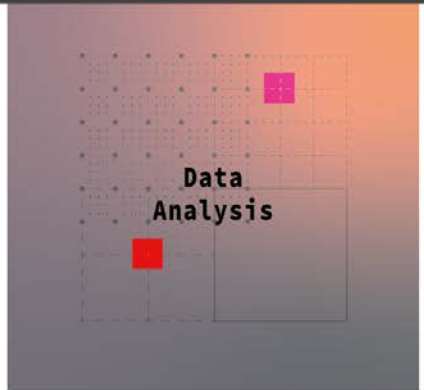
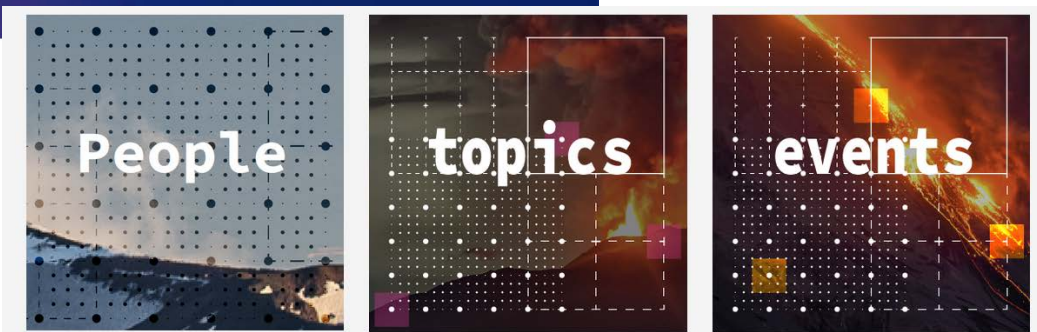


LaVA

lattice virtual academy

LaVA

A virtual platform for advanced e-learning
in Lattice Field Theory



spearheaded by Maria Paola Lombardo
with support from
former ECT* Director Gert Aarts

Funding agencies and supporting institutions:



Additional contributors:



Funding

European network

Local support



Projects



Funding remarks

If you didn't see your logo, let's talk!

Strong leverage from Trentino!!

Thank you for support, including LRP!!!



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We are
awaiting
your visit!

