ECT* update

Gert Aarts

KHuK Annual Meeting Dec 2022

ECT* mission

- ✓ to be a Centre at the frontline of research in theoretical nuclear physics
- ✓ to promote active contacts between theory and experiments, and to related areas of research
- ✓ to further the training of young researchers

- established in 1993
- Institutional member of ESF-Expert Committee NuPECC (Nuclear Physics European Collaboration Committee)
- community-driven, bottom-up approach

ECT* Scientific Board

membership suggested
by ECT* associates
3-year term

Almudena Arcones | TU Darmstadt (D)

Constantia Alexandrou | The Cyprus Institute (CY)

Carlo Barbieri | University of Milan (I)

Anna Corsi | IRFU/DPhN (F)

David Kaplan | University of Washington (USA)

Denis Lacroix | CNRS/IN2P3 (F)

Marek Lewitowicz | NuPECC/GANIL (F)

Barbara Pasquini | University of Pavia (I)

Urs Wiedemann, Board Chair | CERN-TH (CH)

Ex officio: Sandro Stringari | University of Trento (I)

Local Researchers (December 2022)

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ECT* PhD students

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GIOVANNI NOVI INVERARDI
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CALL FOR EXPRESSION OF INTEREST IN ECT* VISITING SCIENTIST POSITIONS FOR UKRAINIAN RESEARCHERS

Call for Expression of Interest in ECT* Visiting Scientist positions for Ukrainian researchers

Who we are

The European Centre for Theoretical Studies in Nuclear Physics and Related Areas (ECT*) in Trento (Italy) is a Research Centre of the Fondazione Bruno Kessler (FBK). It provides a dedicated and structured combination of scientific activities for a large international scientific community in theoretical nuclear physics and related areas, in the broadest sense. ECT* is registered as an European Research Infrastructure, and it is an institutional member of NuPECC, the ESF Associated Nuclear Physics European Collaboration Committee. It promotes coordination of European research efforts in nuclear physics and related research areas.

www.ectstar.eu

direct link

Fellowships 2022

The activities of ECT* also include a limited number of fellowships for senior and junior researchers in the area of research of the Centre. This year ECT* offers 3 fellowships, that may last from 3 to 6 months, that are dedicated to Ukrainian researchers. Each fellowship provides a financial monthly contribution.

Staff

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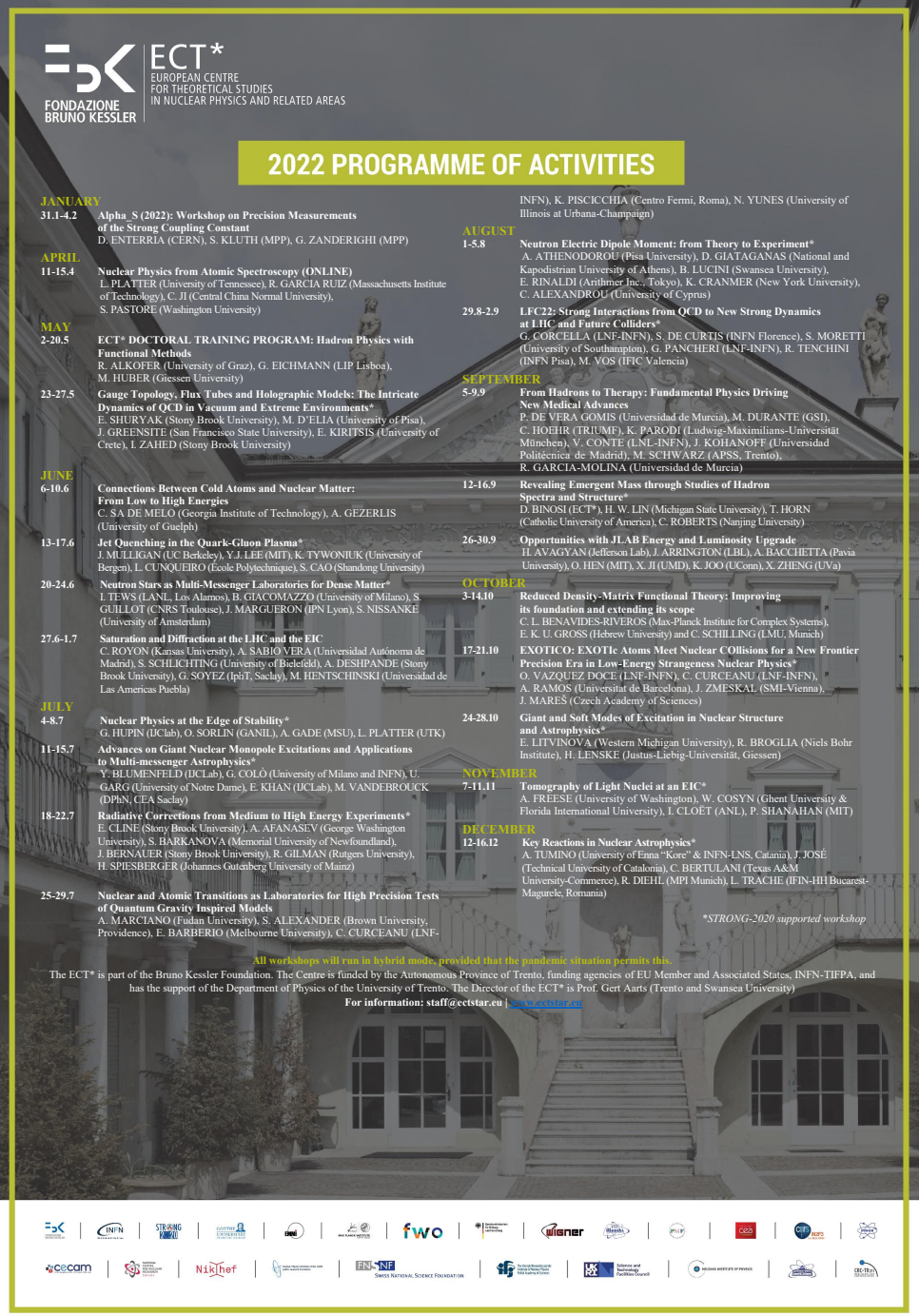
responsible for all the day-to-day work to keep ECT* running

delivery of workshop and training programme

2021 Annual report

available on the ECT* website



2022 Activities

(almost) all meetings were hybrid

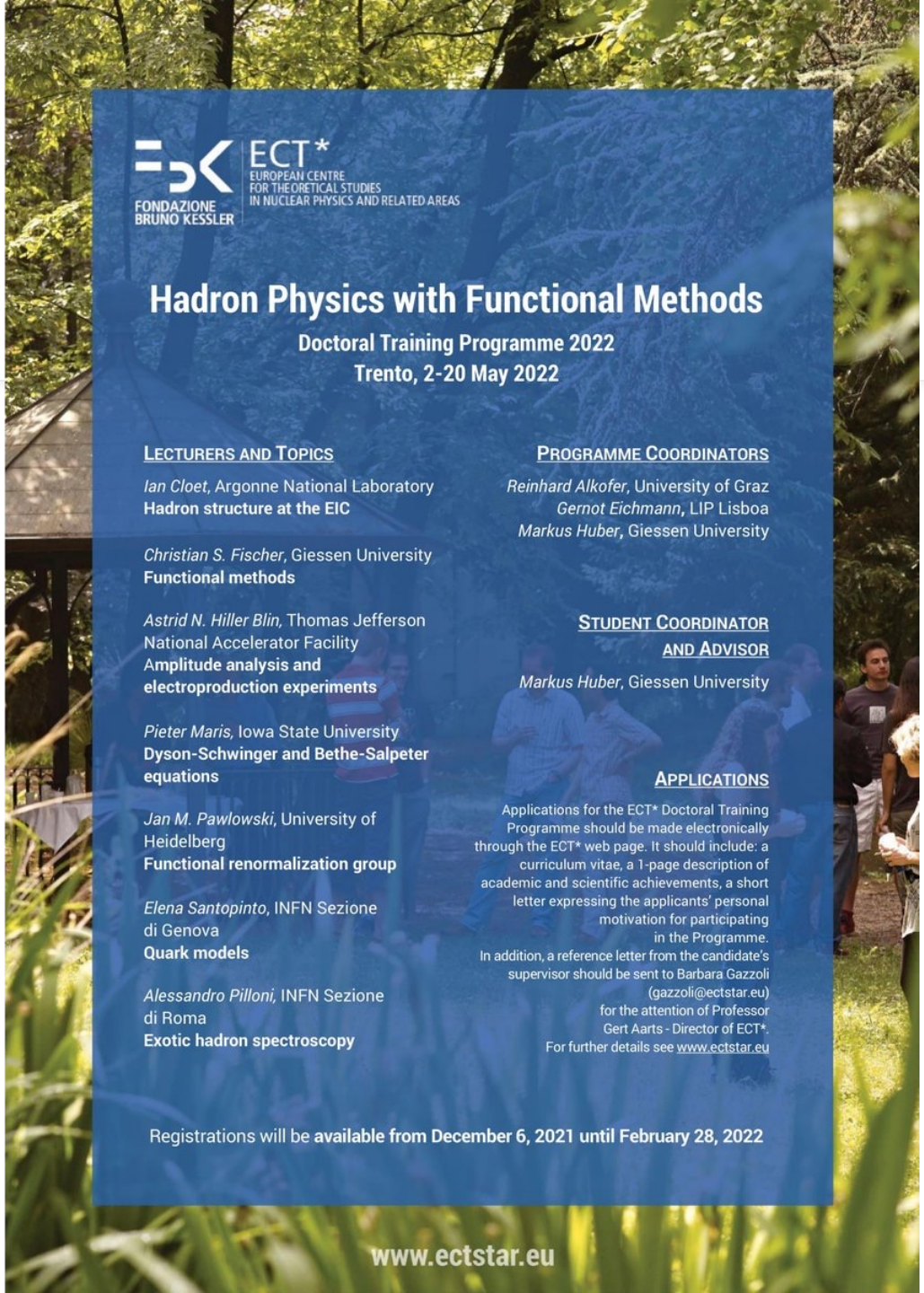
visitor programme restarted

one workshop remaining:

Key Reactions in Nuclear Astrophysics

12-16 December 2022

DTP 2022


FONDAZIONE BRUNO KESSLER
ECT*
EUROPEAN CENTRE FOR THEORETICAL STUDIES IN NUCLEAR PHYSICS AND RELATED AREAS
Hadron Physics with Functional Methods
Doctoral Training Programme 2022
Trento, 2-20 May 2022
LECTURERS AND TOPICS
Ian Cloet, Argonne National Laboratory
Hadron structure at the EIC
Christian S. Fischer, Giessen University
Functional methods
Astrid N. Hiller Blin, Thomas Jefferson National Accelerator Facility
Amplitude analysis and electroproduction experiments
Pieter Maris, Iowa State University
Dyson-Schwinger and Bethe-Salpeter equations
Jan M. Pawlowski, University of Heidelberg
Functional renormalization group
Elena Santopinto, INFN Sezione di Genova
Quark models
Alessandro Pilloni, INFN Sezione di Roma
Exotic hadron spectroscopy
PROGRAMME COORDINATORS
Reinhard Alkofer, University of Graz
Gernot Eichmann, LIP Lisboa
Markus Huber, Giessen University
STUDENT COORDINATOR AND ADVISOR
Markus Huber, Giessen University
APPLICATIONS
Applications for the ECT* Doctoral Training Programme 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 applicants' personal motivation for participating in the Programme.
In addition, a reference letter from the candidate's supervisor should be sent to Barbara Gazzoli (gazzoli@ectstar.eu) for the attention of Professor Gert Aarts - Director of ECT*.
For further details see www.ectstar.eu
Registrations will be available from December 6, 2021 until February 28, 2022
www.ectstar.eu

2023 Activities

- programme selected by Scientific Board
- indico pages being finalised
- 24 workshops and collaboration meetings
- please check website for details

- 1 Doctoral Training Programme

DTP 2023: Ab Initio Methods and Emerging Technologies for Nuclear Structure

- 10-28 July 2023

organizers:

- Carlo Barbieri (University of Milan, INFN)
- Alessandro Roggero (University of Trento)

registration:

- from 13/02/2023 until 15/05/2023
- please advertise to your students!

DTP 2023: Ab Initio Methods and Emerging Technologies for Nuclear Structure

The DTP will focus on **ab initio nuclear theory**, with emphasis on **modern computational methods and emerging technologies**. The past decade has seen considerable progress in this field, leading to fully fledged computations with three-nucleon forces in medium mass isotopes. High-performance computing is now pivotal to the quest for reaching predictions of complex and heavy isotopes. Future frontiers will exploit **Machine Learning** and **Quantum Computing** algorithms as **tools for many-body nuclear physics**.

The aim of the DTP 2023 is to provide the participants with a **pedagogical introduction to many-body theories** that allow a deep understanding of nuclear structure, present the open challenges in relation to **modelling nuclear reactions and interaction with weak probes**, and providing know how for **implementation with high-performance and GPU computing**.

From hybrid to the new(er) normal

- one of the aims of ECT* is to stimulate scientific discussion in an informal and creative environment
- hence, ECT* returns to in-person participation as the preferred way of interaction
- to build on the experiences gained during the pandemic and to support an inclusive global research community, presentations at workshops can be broadcast via zoom, if the workshop organisers choose to do so
- ECT* expects organisers and speakers to be present in person (when possible)

Funding and MoUs

Funding agencies and supporting institutions

Funding

Local support

European networks

Additional contributors (Germany):

EU funding

- essential contribution to ECT* budget

FRIB Theory Alliance EUSTIPEN Program

Europe-U.S. Theory Institute for Physics with Exotic Nuclei (EUSTIPEN):

- facilitate collaborations between U.S.-based and Europe-based scientists working on exotic nuclei, including nuclear structure and reaction theory, nuclear astrophysics, and tests of the standard model
- U.S. participation in EUSTIPEN: travel funds to ECT* for collaboration
- funding for EUSTIPEN provided from the MSU FRIB Theory Alliance with financial assistance from the Office of Nuclear Physics of the U.S. DOE Office of Science.
- MoU renewed 01/09/2022

5-year external review/MoU renewal

- previous review in 2018, chair: Larry McLerran, INT
- new review in preparation, first half of 2023

- MoUs need to be renewed in 2023, for another 5-year period

- support from (European) community of researchers is very much appreciated (and needed!)


Questions/comments?