

Report from the chair

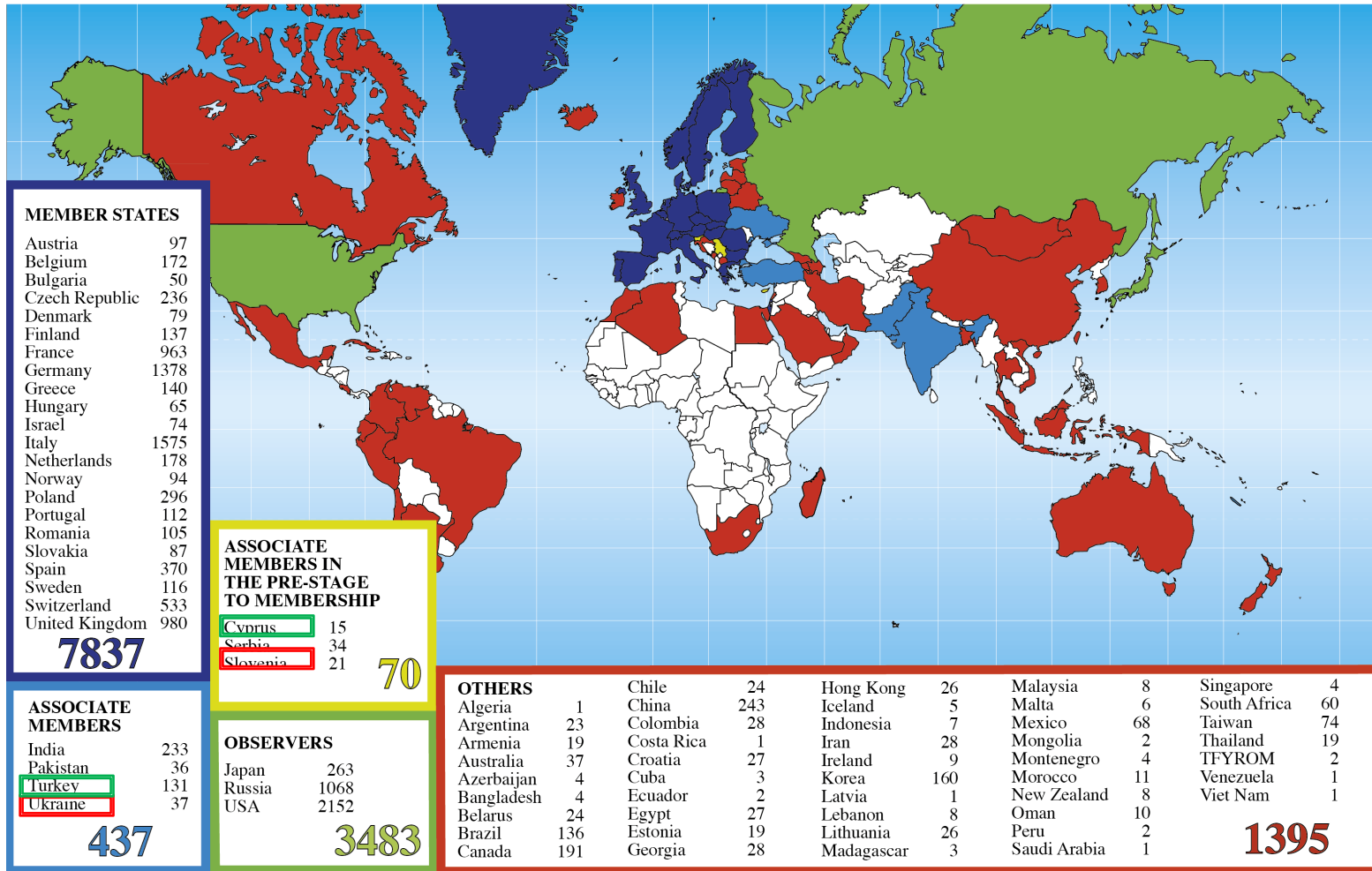
H. Abramowicz
Tel Aviv University

ECFA European Committee for Future Accelerators

Status of ECFA membership

New ECFA members
 Potential ECFA members

Distribution of All CERN Users by Location of Institute on 5 July 2017



RECFA Country Visits

- ❖ Bulgaria - 24-25 March 2017
<http://indico.cern.ch/event/616732/>
- ❖ Belgium - 21-22 April 2017
<http://indico.cern.ch/event/632880/>
- ❖ Finland - 19-20 May 2017
<http://indico.cern.ch/event/626143/>
- ❖ Turkey - 6-7 October 2017
<https://indico.cern.ch/event/658901/>

RECFA Country Visits

Program content

- education, organization, funding
- experimental particle physics
- theory
- nuclear physics (mostly CERN related activities)
- astroparticle (including neutrino physics)
- detector R&D and technology transfer
- accelerator science
- computing
- outreach
- perspective of young scientists

The findings and the recommendations are presented to both the physics community and the government

ECFA supported Workshops and Studies

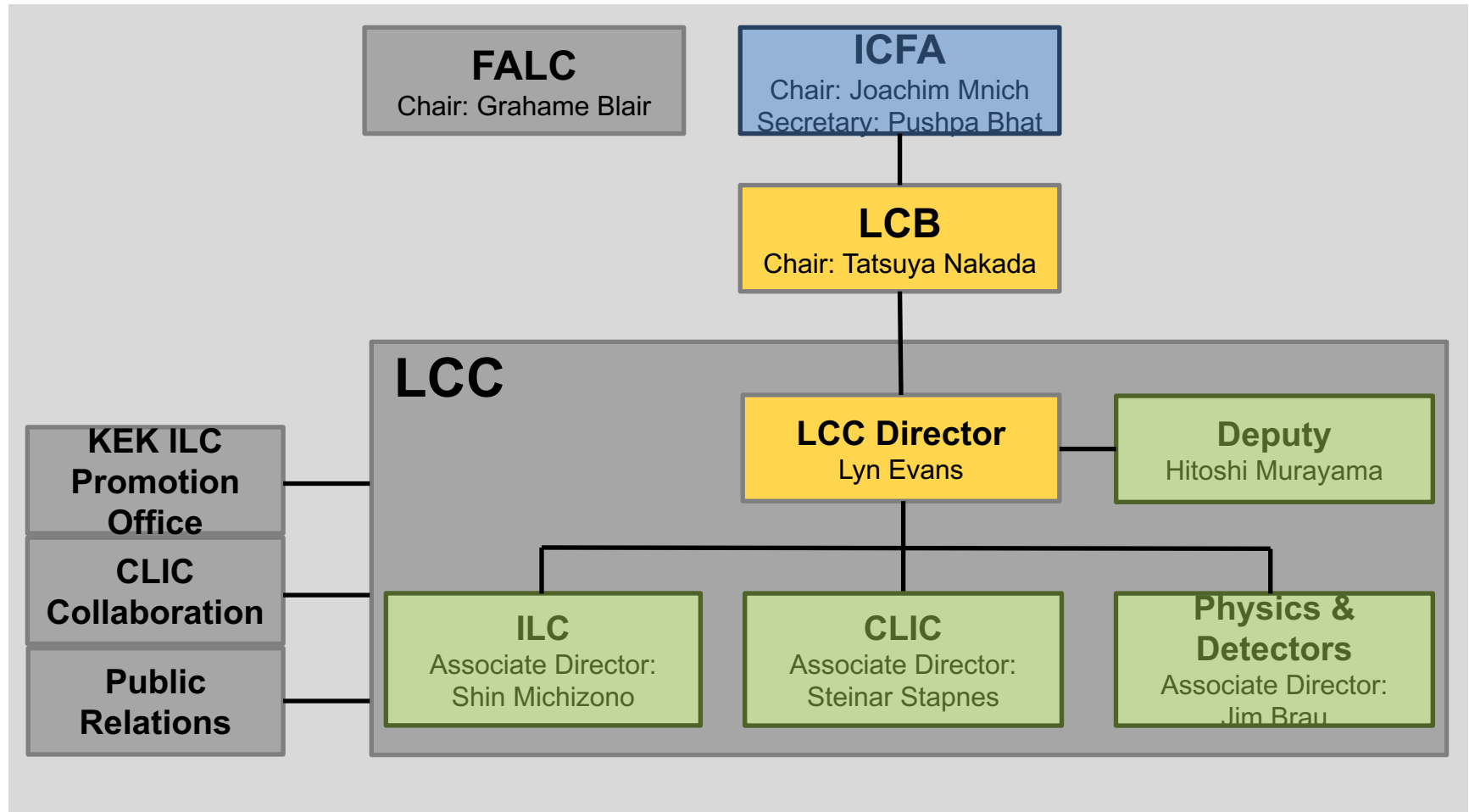
- **Linear Collider Workshops (LCWS)**
 - International - 4-9 December 2016, Marioka
<https://agenda.linearcollider.org/event/7371/>
 - Regional - Americas WLC17, 26-20 June 2017, SLAC
<https://agenda.linearcollider.org/event/7507/>
 - International - 23-27 October 2017, Strasbourg
- **Future Circular Collider Study**
 - 3rd meeting = 29 May = 2 June 2017, Berlin
<https://indico.cern.ch/event/556692/>

Reports at this meeting

Detector R&D Panel

- | | |
|-------------------|--------------------------------------|
| Astroparticle | - Els Koffemann (NL) |
| Calorimetry | - Laurent Serin (FR) |
| Gaseous Detectors | - Silvia Dalla Torre (IT) |
| Silicon | - Phil Allport (UK) |
| Electronics/DAQ | - Arno Straessner (DE) |
| General | - Lucie Linssen (CERN) |
|
 | |
| Ex-officio | - Ariella Cattai (ICFA, CERN) |
|
 | |
| Chair | - Els Koffemann (since January 2017) |

ICFA matters - LC new organization (to be reviewed in <3 years)



ICFA Current Membership

J. Mnich, Chair and CERN Member States

P. Bhat, Secretary

H. Abramowicz, CERN Member States **Jorgen D'Hondt as ECFA chair**

F. Gianotti, CERN Member States

D. MacFarlane, USA

N. Lockyer, USA

N. Hadley, USA

S. Ivanov, Russia

A. Bondar, Russia

Y. Wang, China

E. Álvarez, Other Countries

V. Matveev, Other Countries

M. Cho, Other Countries

T. Mori, Japan

M. Yamauchi, Japan

M. Roney, Canada

J. Fuster, Chair of the IUPAP

Commission on Particles and Fields

(ex officio) **Heidi Schellman as C11 chair**

**ICFA Chair-elect:
Geoffrey Taylor
(COEPP, Melbourne)**

ICFA Seminar, Ottawa, November 2017

<https://meetings.triumf.ca/indico/event/9/overview>

- ICFA seminars take place every three years with the aim of bringing together government officials involved in strategic decisions for High Energy Physics (HEP), representatives of the major funding agencies, the directors of major HEP laboratories, and leading scientists from all of the regions with HEP activity.
- Provides broad overview of the field
- **Opportunity for ICFA - Community - Agency interactions**
- Previous ICFA seminars
 - 2014 at IHEP, Beijing
<http://indico.ihep.ac.cn/event/3867/>
 - 2011 at CERN
<https://indico.cern.ch/event/113370/>

ICFA Statement on the ILC

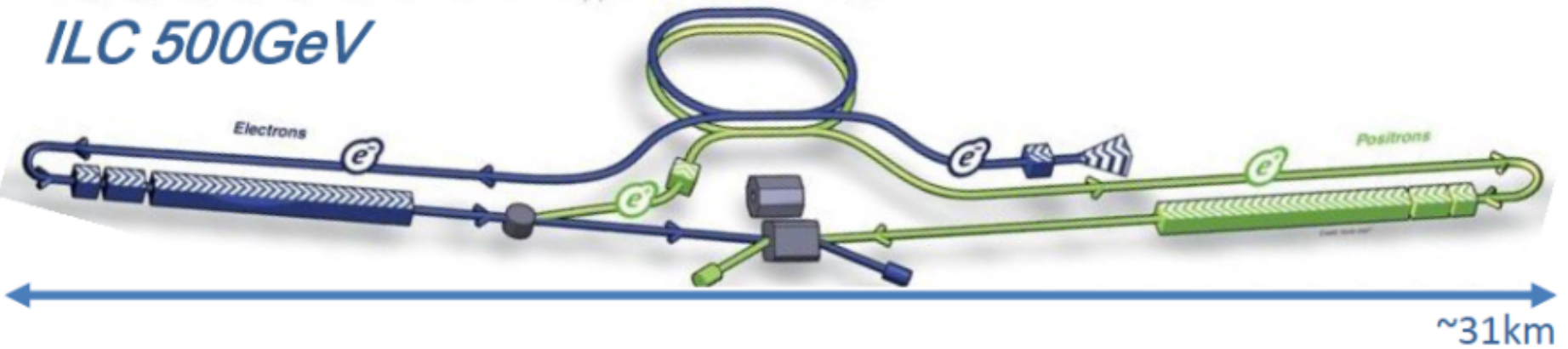
From summary presentation by Geoff Taylor

ILC – READY FOR APPROVAL?

- ▶ Many reports demonstrating advanced status of
 - ▶ Physics Motivation
 - ▶ Machine Design
 - ▶ Experiment Concepts and Technology
- ▶ But the price tag close to O(\$10¹⁰)
 - ▶ ILC250 (with Upgrade capacity)
 - ▶ Major cost reduction.
 - ▶ Higgs Factory - excellent first stage for ILC

Staging

ILC 500GeV



ILC 250GeV



Physics Case for the 250 GeV Stage of the ILC arXiv:1710.07621

ILC

Conclusions of “Committee on the Scientific Case of ILC250 Higgs Factory (Chair: Shoji Asai)”

Commissioned by the Japan Association of High Energy Physicists

- In order to make the most out of the HL-LHC physics results, concurrent running of the ILC250 is desired.
- Because the energy scale of new physics is currently not known, the reach of precision Higgs and other SM probes of ILC250 are comparable to those of ILC500.
- Combining with HL-LHC, SuperKEKB, and other experiments, ILC250 “Higgs Factory” will play an indispensable role: fully cover new phenomena up to $\Lambda \sim 2\text{-}3$ TeV & uncover the origin of matter-antimatter asymmetry
- The inherent advantage of a linear collider is its energy upgradability. Thus the ILC250 can not only uncover the energy scale of new physics, but has the potential to fulfill this requirement by an energy upgrade.

Yasuhiro Okada

ICFA STATEMENT ON THE ILC OPERATING AT 250 GEV AS A HIGGS BOSON FACTORY

The discovery of a Higgs boson in 2012 at the Large Hadron Collider (LHC) at CERN is one of the most significant recent breakthroughs in science and marks a major step forward in fundamental physics. **Precision studies of the Higgs boson will further deepen our understanding of the most fundamental laws** of matter and its interactions.

The International Linear Collider (ILC) operating at 250 GeV center-of-mass energy will provide excellent science from precision studies of the Higgs boson. Therefore, **ICFA considers the ILC a key science project complementary to the LHC and its upgrade.**

ICFA welcomes the efforts by the Linear Collider Collaboration on cost reductions for the ILC, which indicate that up to **40% cost reduction** relative to the 2013 Technical Design Report (500 GeV ILC) is possible for a **250 GeV collider.**

ICFA emphasises the **extendibility of the ILC to higher energies** and notes that there is large discovery potential with important additional measurements accessible at energies beyond 250 GeV. ICFA thus supports the conclusions of the Linear Collider Board (LCB) in their report presented at this meeting and **very strongly encourages Japan to realize the ILC in a timely fashion** as a Higgs boson factory with a center-of-mass energy of 250 GeV as an international project¹, led by Japanese initiative.

¹ In the LCB report the European XFEL and FAIR are mentioned as recent examples for international projects.

Ottawa, November 2017

ECFA meetings in 2018

PECFA meetings

- 102th meeting, Synchrotron Light facility ALBA, Barcelona, 19-20 July 2018
- 103th meeting, CERN, 15-16 November 2018

RECFA country visits

- Romania, Bucharest, 23-24 March 2018
- Austria, Vienna, 6-7 April 2018
- Slovakia, Bratislava, 18-19 May, 2018
- Cyprus, venue/date to be determined

European Particle Physics Strategy Update

- **Secretariat of the EPPSU is in place**
Halina Abramowicz (chair), Keith Ellis (chair of the SPC), Jorgen d'Hondt (ECFA chair), Lenny Rivkin (Directors Group)
- **Preliminary timeline**
 - Official launching of the process - September 2018;
 - Collect inputs - end of 2018;
 - Open meeting - mid May 2019;
 - Drafting strategy update document - mid January 2020;
 - Conclusion of the process - May 2020.