



# News of the ISOLDE Group

27<sup>th</sup> of June 2017

Maria J. G. Borge



# Outline

- Associates, Fellows and Students
- Focus on Exotic beams at ISOLDE: A Laboratory portrait.
- Long Range Plan
- EURISOL-DF → Postponed for 2020
- Collaboration matters
- 5 years summary
- Future prospects

# Associates & Corresponding Associates & staff

- Associates (**16<sup>th</sup> September 2017**)
  - Bertram Blank ( – August 2017)
  - Angela Bracco (– July 2017)
  - Andrei Andreyev ( July 2017– June 2018)
  - Joakim Cederkal (September 2017 – August 2018)
- Corresponding Associates (**16<sup>th</sup> September 2017**)
  - Olof Tengblad (-June 2017)
- Staff members :
  - Magda Kowlaska (Oct 2015 – Sep 2018)  
**ERC betaDropNMR**
  - Stephan Ettenbauer (Feb 2017-Jan2021)  
**ERC MIRACLS**
- Technician ? 50% (Francois d' Oliveira, Francois Garnier) Projects via Karl J. (ENSAR2)
- ISOLDE User Support:
  - Jennifer Weterings (2002 - )

## 2012-2013

- Associates
  - Marek Pfützner ( – June 2013)
- Corresponding Associates
  - Olof Tengblad (Sept-Dec 2012)



# Fellows & Associates & Corresponding Associates

## **Fellows:** (4<sup>th</sup> September 2017)

- ✓ Liam Gaffney (Oct 2016 – Sep 2019)
- ✓ Hanne Heylen (Oct 2017-Sep 2020)
- ✓ Kara Lynch (Jan 2015 – **Dec 2017**)
- ✓ Vladimir Manea (Jan2016 – **April 2018**)

## **APPLIED:**

- ✓ Akira Miyazaki (May 2017- Dec 2018, SC cavities → Manchester Contract)
- ✓ Lina Pallada (Applied Fellow, June 2017-, ERC)
- ✓ Andree Welker (August 2017 - ) (Applied Fellow, setting zero-spectrometer)
- ✓ Frank Wienholtz (Jan2016 – Dec2018) (Applied Fellow, ERC)

## **Fellows:** (2012-2013)

- ✓ Susanne Kreim, Dec2014  
(+ 1y COFUND)
- ✓ Elisa Rapisarda, Sept 2014

## **APPLIED:**

- ✓ Monika Stachura, starting April 2013- March 2015
- ✓ Jan Kurcewicz, nov 2013 (Applied Fellow, ENSAR)

# Doctoral Students (Present/ Past)

- ✓ CERN Doctoral Student for IDS:  
Razvan Lica (Sep2014 – August 2017)
- ✓ Doctoral Program with Germany  
-Andree Werkens (Feb 2015- Jan2018) ISOLTRAP  
-Jonas Karhein (Nov2017-
- ✓ Doctoral student York-CERN (BETADROP) Rob Harding (Jan 2017-)
- ✓ Doctoral student Leuven-BETADROP : Fredrik P. Gustafsson (july 2017-)
- ✓ Doctoral student MIRACLS:  
Simon Lechner (Sept 2017)  
Varvara Lagaki (Sept 2017)
- ✓ CERN money for hiring a student from January 2018: Deadline:  
**16 October 2017**

## 2012

- ✓ Doctoral student: Kara Lynch, July2010-August 2013.
- ✓ Technical student: Rikard Vinge, July 2013 (Twin-EBIS)

# NuPECC / Long Range Plan

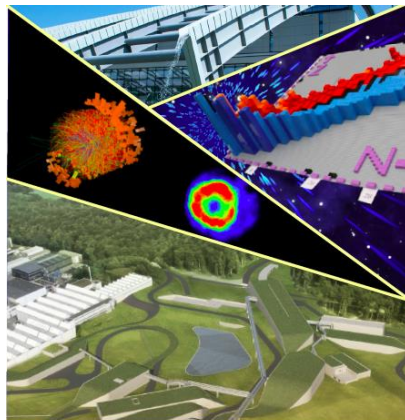
● NuPECC meeting @ CERN : 10-11 of March

Mini-workshop

Friday Morning opening by Eckhart Elsen

Visits to ALICE and ISOLDE

Important that someone represent ISOLDE in NuPECC



**NuPECC** NuPECC  
Long Range Plan 2017  
Perspectives  
in Nuclear Physics



● Long Range Plan: approved in The  
NuPECC Lisbon Meeting 16-17 June

**Support for construction, augmentation and exploitation of world leading ISOL facilities in Europe.**

The urgent completion of the ESFRI facility SPIRAL2 along with SPES and with the energy and intensity upgrade of HIE-ISOLDE (+ storage ring) will consolidate the leading role of Europe in the

Launch LRP in Brussels 27th of November

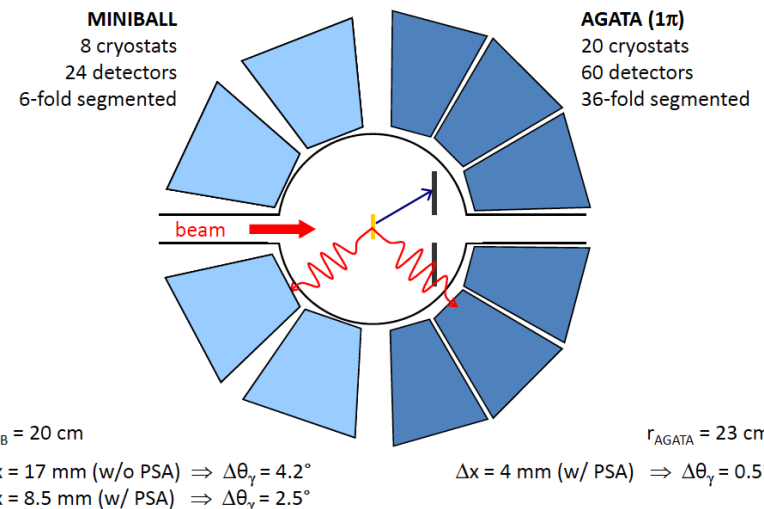


# AGATA @ ISOLDE (June 2017)

- AGATA steering committee suggested exploring the option for in-beam  $\gamma$ -ray spectroscopy with AGATA coupled to the HIE-ISOLDE accelerator after the CERN long shutdown 2.

A "White Book" with the physics that will be done with AGATA during the 10 year time period from 2021 to 2030. Five facilities are considered to be of interest for hosting AGATA during this period: GANIL/SPIRAL1/SPIRAL2, GSI/FAIR, HIE-ISOLDE, JYFL and LNL/SPES.

Unique opportunity to exploit the potential of reaccelerated HIE-ISOLDE beams with the position sensitive  $\gamma$ -ray tracking array due to improved energy resolution up to 10 MeV/u and increased detection efficiency.



# ISOLDE Laboratory Portrait

- Title: “Focus on exotic beams at ISOLDE: A laboratory Portrait ”
- To be publish in J Phys G in 2017
- Content: 17 already fully accepted!!
  - **Experimental facilities and methods:** <http://iopscience.iop.org/journal/0954-3899/page/ISOLDE%20laboratory%20portrait>
    - ✓ 16 received / 9 on the web
    - **invited contributions by theoreticians**
    - ✓ 2 received Articles by submission/ 1 on the web
    - ✓ 10 contributions received: / 7 on web
  - Volumen: J. Phys. G Nucl. Part. Phys 44, 2017
  - Contact person in IOP **Claire Fullarton:** [Claire.fullarton@iop.org](mailto:Claire.fullarton@iop.org)
- **Should we pay for Open Access?** Cost for the volumen : **35.000 CHF**
- Push to have it released October the 16<sup>th</sup>.
- Bind in a hard-copy



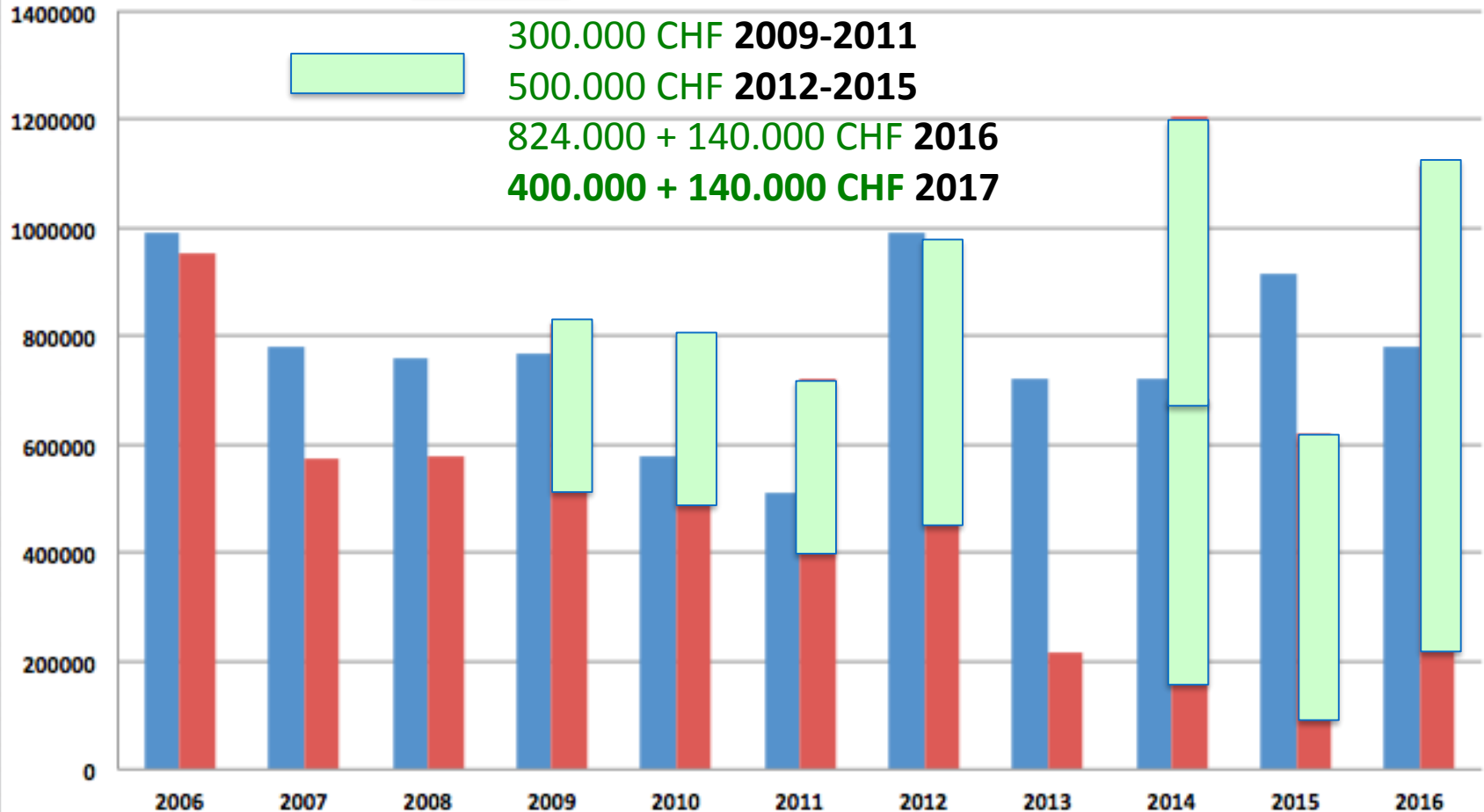
# CERN Open Access

- CERN is pushing to get the publication in Open access
- It has negotiated with the following Journals (SCOAP3)
  - Acta Fisica Polonica B
  - Chinese Physics C
  - Eur Phys J. C
  - Nuclear Physics B
  - Physics Letters B
  - Phys Rev C (from 2018)
  - Phys Rev D (from 2018)
  - Phys Rev Lett (from 2018)

**Important to negotiate and get Eur Phys J A and Nuc Phys A**

# Collaboration Account

## INCOME & EXPENDITURE 2006 - 2016 /CHF



# HIE-ISOLDE payments

	2016	2017	2018	2019	2020	2021	2022	2023	Total
Expenses without in-kind and contingency on CERN codes	1'779	874	30						2'683
Loan instalments		1'779							1'779
Funding HIE-ISOLDE expenses		400	400	104					904
Loan reimbursement				400	400	400	400	179	1'779
3 <sup>rd</sup> Beam Line Loan	140	140	140	140	140				

Present Balance of the Collaboration account = **529.579 CHF**

Outstanding 2016 : Greece and Norway

Paid 2017: CERN, F, Fi, Ge, P(1/2), S, Sk, SA,UK

# ISOLDE Statistics

- We have taken a “photo” of the ISOLDE Community according to the CERN user office.
- “Photo” taken the 23rd of June 2017
  - Users : **487**
  - PART (users which CERN affiliation has expired) : **711**
  - **CERN in house group ( more than 50% @ CERN) approx 30**
- We would like that the ISOLDE users subscribe for long periods to facilitate the work of our User officer.

# Summary ( 5 Years)

- Increase of the in-house Group staff + Target (LC Sebastien Rothe) + RILIS ( permanent Bruce Marsh) + OP (A. Rodriguez Section Leader)
- Design the hands-on RP and Electricity courses for ISOLDE (M. Kowlaska)
- New building 508
- 6 courses 2013-2017
- Multiple presence in the media: CERN Courier, PH Newsletters, Hangout
- New web page following CERN standards ( J. Weterings)
- Minutes of GUI also linked to ISOLDE web page
- New format for the ISOLDE Newsletter (V. Manea) with index of content
- Launch of a laboratoty portrait to celebrate the 50 years.
- The limit of 2micro-Amp has been able to be removed in some cases as the important factor is the over all radioactivity per year and we have now many detectors in the hall that allow for abetter control of radioactivity than previously.

# Courses 2013 - 2017

- **Themes in the physics of Atomic Nuclei**, complex interaction and extraordinarily simple behaviour. The new Frontier of exotic Nuclei— shattering cherished paradigms and building a new synthesis  
-Emergent collectivity, phase transitions and cosmological consequences.  
➤ Rick Casten, July 2012
- **Statistical methods for Nuclear Physics**  
Karsten Riisager, 18-20 of March, 2013 (25 attendants!!)
- **Shell model for non Practitioners**  
Frederick Nowacki, Alfredo Poves, C. Sieja, 14-18 October 2013
- **Nuclear Reactions and Nuclear Structure Course** Wilton Cartford, Alexia DiPietro, and Antonio Moro, 22-25 April 2014
- **Coulex school**  
M. Zielinska et al, the 27<sup>th</sup>-29<sup>th</sup> of January 2016
- **Nuclear astrophysics**  
Francois de Oliveira, Gabriel Martinez Pinedo, Olivier Sorlin, 9-11 of May

# User Facilities

1. Building 507 is in very bad stage. Profit for the shutdown to demolish and build a new one



Ceiling

Cracks on the external wall



Broken external panels

# Building 508 (115+ 507+601)

- Started 2013: Packed material, removed Asbestos, declassify building 115



- Asbestos: Desamiantage of bat 601 and 115 finished 5 July 2013
- Demolition: 14th July – 5th of August 2013
- Drains and water networks: 5th August – 31st of August
- New access to the hall
- Summer 2013 the layout of the building defined:
- Building 508 layout:**
- The new building 508 Light metal structure with 2 concrete floors:
  - Total surface 864m<sup>2</sup>
- Ground floor (only accessible from within the classified area): 432 m<sup>2</sup>
  - Solid state, Laser labs and workshop
- First floor (accessible from outside the classified area): 432m<sup>2</sup>
  - Data Acquisition rooms
  - Meeting room/Visitors Center
  - Kitchen
  - Isolde Control Room





# Timeline & Budget (as October 2013)

**Total costs light structure building 508 (incl. ICR & services): 1.8MCHF (October 2013)**

Includes Infrastructure: CV

- **Approved budget:**  
600kCHF for consolidation  
350kCHF for LS1  
400kCHF by PH dept.  
**1.35MCHF** (without control room)
- New Isolde Control room: 185 kCHF by BE+EN dept.  
**Extra costs light structure building: 200kCHF by GS dept**  
**385kCHF → Missing=65kCHF**



## TIMELINE:

- Finished 2014. **CV TOO Expensive (Only ground floor. No!!! Building ready May 2014 / Infrastructure November 2014, LASERS @ Hall to do physics**
- CV in bottom Floor from the start 2015
- Control room, visitors room and kitchen completed for the start of 2016.
- CV in 1st floor working in June 2017.

# Future Prospects

- HIE-ISOLDE phase 3: Angela conversation with Fabiola at the beginning of July crucial.
  - IMPORTANT TO KEEP the team of experts.
  - Create a working group to look and the original project.
- Automatic LN2 filling installation in the hall. (LS2).
- New large instrumentation :ISS, HiFi (HiE-ISOLDE Fragment Identifier, AGATA?)
- Boost study of safety to be able to profit from the higher intensity of LINAC4.
- Following up on the Beam Dumps
- Storage Ring plans for the future.

