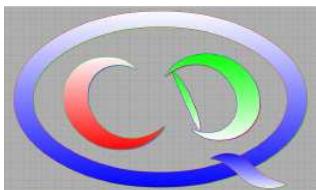


RHEINISCHE FRIEDRICH-WILHELMUS-UNIVERSITÄT

# Regional Training Network in Theoretical Physics

Akaki Rusetsky, University of Bonn

Tbilisi State University, 14 March 2013



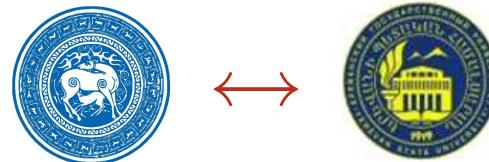
## Statement of need

- Severe brain drain both in Georgia and Armenia since 1990's:  
*For example,  $\geq 1200$  qualified specialists left Georgia  
(data from "Kvali" Association 2003-2004 research)*
- Slowing down the pace of the research due to the poor financing
- Scientific exchanges become difficult

- Worsening of the educational standards
- Problem of the replacement of the scientific cadre
- Lowering the prestige of a scientist in the society

# The idea of regional cooperation



- **The Regional Training Network in Theoretical Physics:**
  - Covers PhD training and research phase
  - Sets **standards of excellence** for the region
- Using positive synergy effect from regional cooperation:
  - Different fields of specialization in Georgia and Armenia
  - Co-supervision of the PhD theses;  
A wider choice of supervisors and research fields
  - Promoting student/researcher mobility
  - Organizing joint schools, workshops, etc
- Jointly using the potential of the Georgian and Armenian **scientific diaspora**

## The diaspora

- Yerevan: University Center of Excellence "**Algebraic and Geometric Studies for Condensed Matter Physics**" (2007-2009)  
Close collaboration with:
  - Prof. Ruben Minasian (Saclay)
  - Prof. Hovahnnes Khudaverdyan (Manchester University)4 PhD theses were defended
- **American-Georgian association “Kvali,”** focusing on the educational programs in the fields on natural sciences (2001-present)
- **Georgian Virtual Institute for Physics (2010-present): video transmission via Internet**
  - 5 lecture courses + exercises, exams at master/PhD level
  - Co-supervision of 2 MSc theses
  - Seminars organized

# University of Bonn



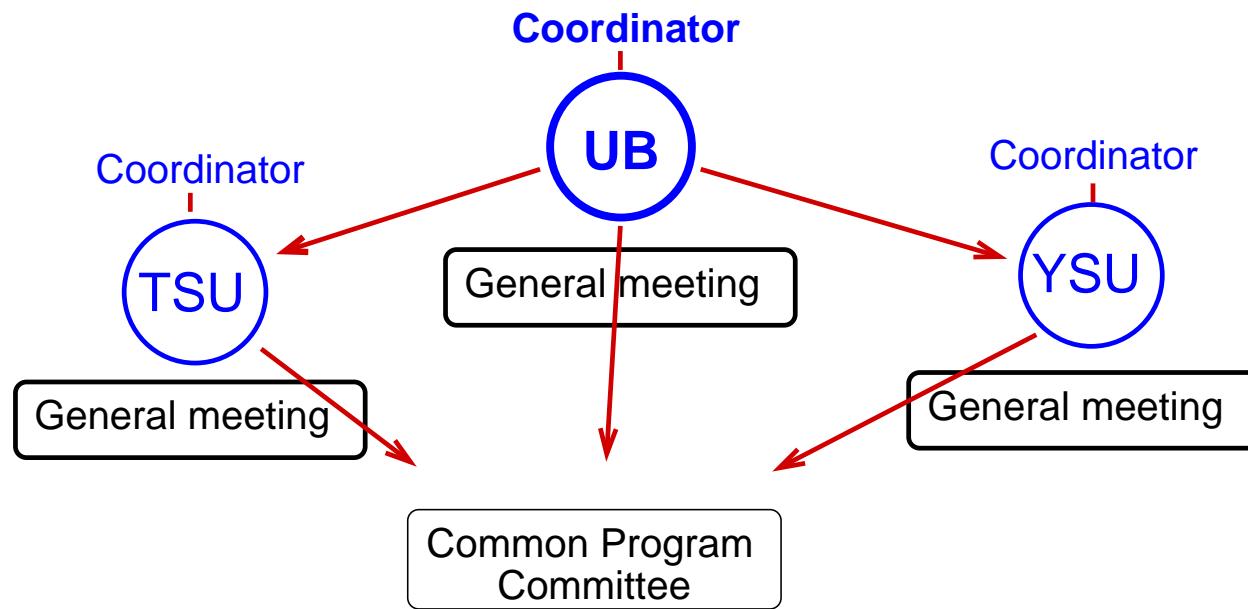
- Participation of the University of Bonn guarantees the adherence of the joint PhD program to the **highest educational standards**
- The collaboration profits from the experience of the **Bonn-Cologne Graduate School in Physics and Astronomy (BCGS)**
- University of Bonn has interest in educating and attracting young, highly-talented academics from Georgia and Armenia

*Example: A. Agadjanov and D. Agadjanov  
Georgian Virtual Institute ⇒ PhD at University of Bonn (2012)*

# Common PhD program

- MoU signed between:
  - University of Bonn (UB)
  - Ivane Javakhishvili Tbilisi State University (TSU)
  - Yerevan State University (YSU)
- Common Program Committee shall be created
- Enrollment: PhD students of UB, TSU or YSU
- Co-supervisors are assigned. The students stay part of the time in the guest institutions
- PhD assigned by the Universities + a **certificate** of participation in the program

# The structure of the Regional Training Network



# Activities of the Network (first 2,5 years)

- Working out a **common PhD program** in theoretical physics
- Delivering **joint PhD courses** in UB/TSU/YSU, widely using Internet communication means ( $\geq 14$  courses)
- Promoting lecturer/student **mobility** between UB/TSU/YSU
- **Co-supervising** PhD theses ( $\geq 8$  students)
- Organizing **schools/workshops** on a yearly basis

⇒ Lecturers from other institutions may individually participate in the activities, are attached to one of the nodes

⇒ Students from other institutions can be enrolled in the program with the consent of their home institutions

# People (March 2013)

## **UB node:**

Ulf-G. Meißner, HISKP, UB (project coordinator)  
Akaki Rusetsky, HISKP, UB

## **TSU node:**

Merab Eliashvili, TSU  
Merab Gogberashvili, TSU  
Anzor Khelashvili, High Energy Physics Institute, TSU  
Tamaz Mdzinarashvili, TSU  
Mirian Tabidze, TSU (node coordinator)

## **YSU node:**

Armen Allahverdian, YerPhI  
Tigran Hakobyan, YSU  
David Karakhanyan, YerPhI & YSU  
Yevgeniy Mamasakhlisov, YSU  
Armen Nersessian, YSU (node coordinator)  
Vadim Ohanyan, YSU  
Gor Sarkissian, YSU

## Collaboration with the scientific diaspora

Gregory Gabadadze (*New York University, USA*)

Jambul Gegelia (*Ruhr Universität Bochum, Germany*)

George Jackeli (*Max-Planck-Institut, Stuttgart, Germany*)

George Japaridze (*Clark Atlanta University, Atlanta, Georgia, USA*)

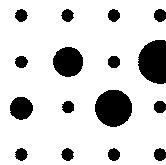
Ruben Minasian (*IPhT, Saclay, France*)

Emil Yuzbashyan (*Rutgers University, USA*)

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# Financing of the project (first 2,5 years)

**≈ 340,000 Euro** is provided by



Volkswagen**Stiftung**

- Preparing and delivering lecture courses
- Mobility, including **1,5 year stay of 2 PhD students in UB**
- Co-supervision
- Workshops, schools
- Hardware

Co-financed by:



**Ivane Javakhishvili Tbilisi State University**



**Yerevan State University**

## The future of the project

It is a general understanding between our team members that the projects like the “Regional Training Network in Theoretical Physics,” which could play an important role in the Educational Reform in Georgia and Armenia, can function only with a substantial **state support**.

in order to get a substantial financial support from the national funding agencies, one has to demonstrate that one is dealing with an already **established and functioning body**.

A model for the future: establish the Tbilisi node of the Regional Training Network as a part of the new **excellence cluster**

→ see the talk by S. Vashakidze