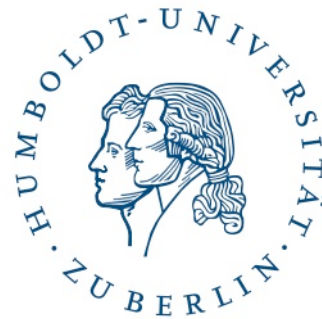




Berlin  
Mathematical  
School

a joint graduate school of



# BMS . . .



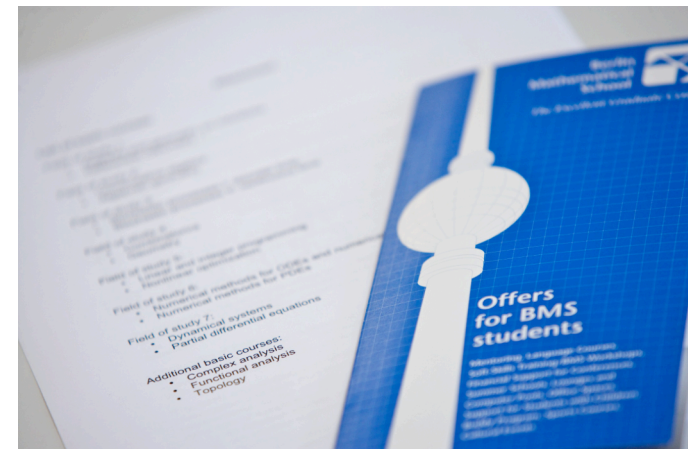
- a graduate school in mathematics
- from Bachelor to PhD
- founded in Summer 2006
- funded by “Excellence Initiative”
- based on broad expertise in mathematics in Berlin



## BMS offers ...



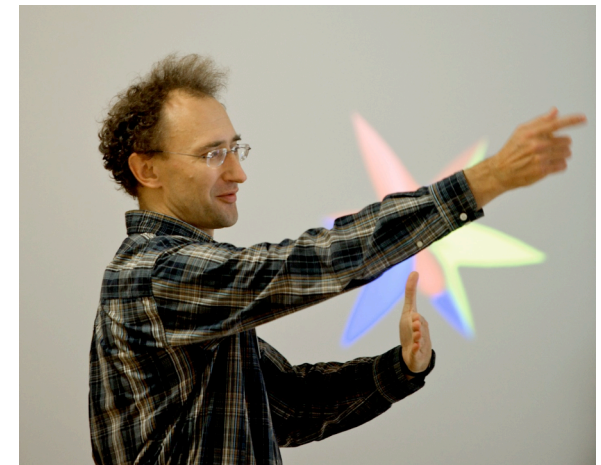
- structured Ph.D. program taught in English
- joint Friday colloquia with distinguished guest speakers
- mentoring for all students
- soft skills training



# BMS offers ...



- first-rate graduate studies environment
- access to research groups at FU, HU and TU
- access to the program and scholarships of  
4 DFG Research Training Groups and  
2 International Max Planck Research Schools,  
MATHEON, WIAS, ZIB, ...





# Scientific Advisory Board



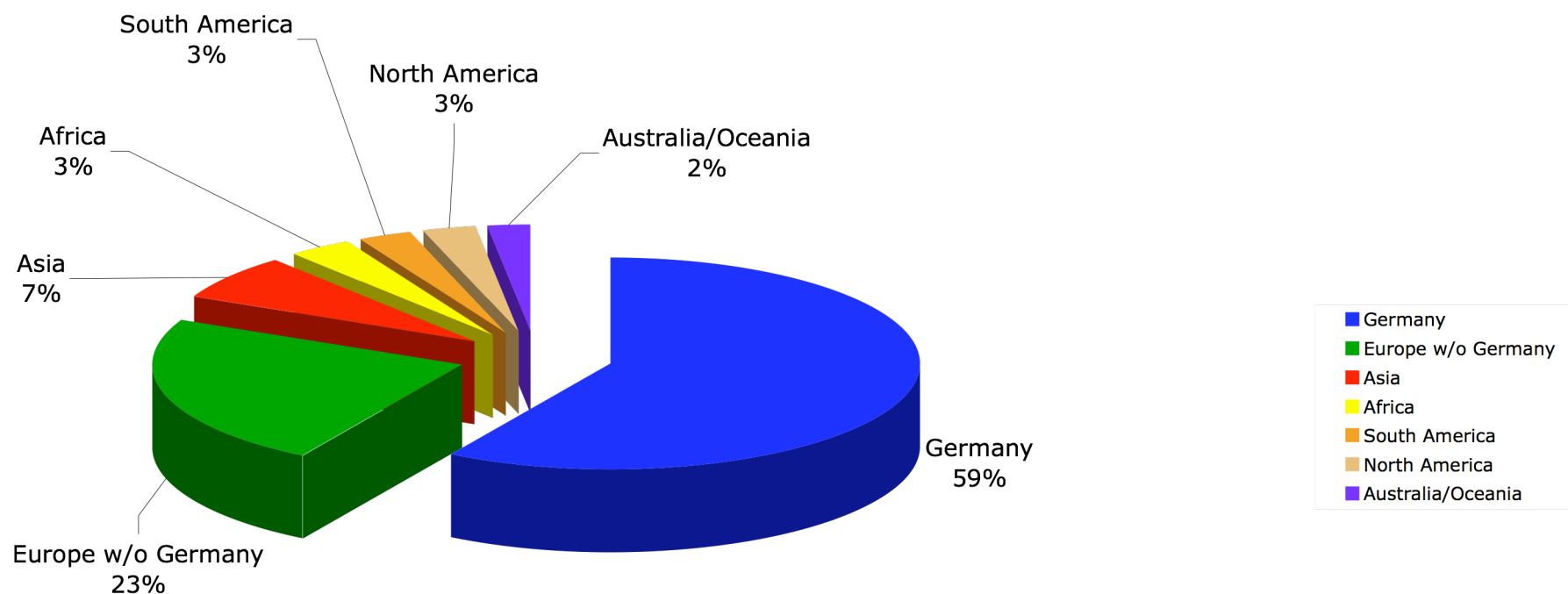
- Eva Bayer (EPF Lausanne)
- Weinan E (Princeton University)
- Benedict Gross (Harvard University)
- Andrei Okounkov (Princeton University)
- Ragni Piene (Universitetet i Oslo)
- Andrew Stuart (University of Warwick)
- Wendelin Werner (Université Paris–Sud)

# Facts

- 139 students (as of October 2009):
  - 42 in Phase I, 97 in Phase II
  - 41 women (14 in Phase I, 27 in Phase II)
  - 59 international students from 31 countries
- Applications for 2009/10:
  - 170 applications (34 from women, 146 from abroad)
  - 18 (6/12) admitted to Phase I
  - 9 (3/6) admitted to Phase II



# BMS Student Origins



# BMS Scholarships



- Phase I
  - for 50% of incoming cohort
  - 800 €/month (for 18 months)
- Phase II
  - for 25% of incoming cohort
  - 1350€/month (for 24 months)
  - Other types of funding available for Phase II, e.g. RTGs
- Additional funding for student parents



# Set-Up: Study Program



Phase I			Phase II				
1	2	3	4	5	6	7	8
Basic courses		Advanced courses					
		Qualifying exam Thesis research (e.g., in RTG)					

# Study Program for Phase I

- Entrance level: Bachelor's degree
- Usually three semesters
- At least five basic courses
- At least two advanced courses, including a seminar course with paper
- BMS colloquium/seminar on Fridays
- End with qualifying exam to enter Phase II
- Find thesis advisor



# BMS Basic Courses



1. *Differential geometry, global analysis, and topology:*
  - Analysis and geometry on manifolds
  - Differential Geometry
2. *Algebra and number theory, algebraic and arithmetic geometry:*
  - Commutative algebra
  - Algebraic geometry
3. *Probability theory and financial mathematics:*
  - Stochastic processes I: discrete time
  - Stochastic processes II: continuous time
4. *Discrete mathematics and discrete geometry:*
  - Combinatorics
  - Geometry

# BMS Basic Courses



## *5. Linear, nonlinear, and combinatorial optimization:*

- Linear and integer programming
- Nonlinear optimization

## *6. Numerical analysis, scientific computing, and visualization:*

- Numerical methods for ODEs and numerical linear algebra
- Numerical methods for PDEs

## *7. Applied analysis, mathematical physics, and dynamical systems:*

- Dynamical systems
- Partial differential equations

## *Additional basic courses:*

- Complex analysis
- Functional analysis
- Topology



# Study Program for Phase II

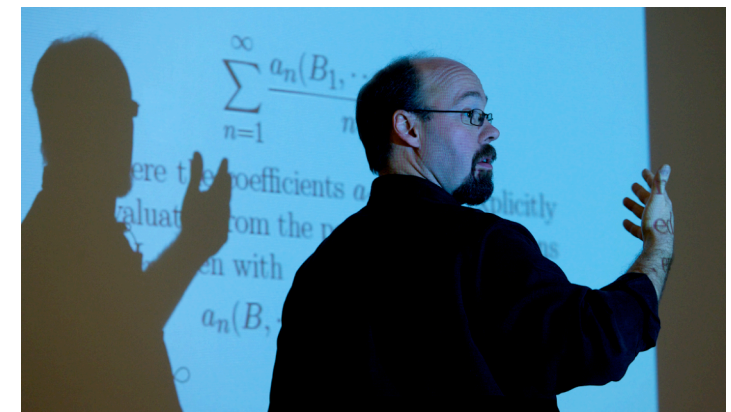


- Entrance level: Qualifying exam or Master's degree
- Thesis advisor, plus separate mentor
- Four to six semesters
- Thesis work, integrated in research group
- One advanced course per semester
- BMS Fridays

# BMS Fridays



- Distinguished guest speakers,  
e.g. Gross, Okounkov, Werner, Wright
- Kovalevskaya Colloquia with “Ladies Lunch”
- Tea & cookies before every Friday
- Student–run “What Is” Seminar





- Writing mathematics
- Presentation and communication
- Creating mathematical graphics
- LaTeX
- Intercultural training
- Project management

Questions?

Contact:



BERLIN MATHEMATICAL SCHOOL  
One-Stop Office  
[office@math-berlin.de](mailto:office@math-berlin.de)  
<http://www.math-berlin.de>



Nicola Tarasca



Kaie Kubjas



Berlin  
Mathematical  
School



Sharad Jamshidi

## BMS Student Representatives



Laura Hinsch



Nathan Ilten