

# Programme of the Bad Honnef Physics School

## *“Physics of Bacteria”*

Bad Honnef, August 4th - 9th, 2019

### **Day 1, Sunday, August 4th, 2019: Arrival and Opening Keynote Lecture**

Arrival and Check-in until 17:00

17:00 – 18:00 Icebreaker

18:00 – 19:30 Dinner

20:00 – 21:30 Opening Keynote Lecture “Physics of Life” (Erwin Frey, LMU München)

### **Day 2, Monday, August 5th, 2019**

08:50 – 09:00 Introduction to today’s programme

09:00 – 10:30 Lecture “Introduction to Bacteriology I” (Ralf Heermann, Universität Mainz)

10:30 – 11:00 Coffee break

11:00 – 12:30 Lecture “Physics of bacterial colonies and biofilms” (Berenike Maier, Univ. zu Köln)

12:30 – 14:00 Lunch

14:00 – 15:30 Lecture “Dynamics of Bacterial Biofilms” (Knut Drescher, MPI Marburg)

15:30 – 16:00 Coffee break

16:00 – 17:30 Flash talks (participants presenting a poster)

17:30 – 18:30 Poster session

18:30 – 20:00 Dinner

from 20:00 Poster session (continued)

### **Day 3, Tuesday, August 6th, 2019**

08:50 – 09:00 Introduction to today’s programme

09:00 – 10:30 Lecture “Introduction to Bacteriology II” (Ralf Heermann, Universität Mainz)

10:30 – 11:00 Coffee break

11:00 – 12:30 Lecture “Single-cell growth and gene expression” (Ariel Amir, Harvard University)

12:30 – 14:00 Lunch

14:00 – 15:30 Lecture “Bacterial growth rates and tradeoffs”

(Markus Basan, Harvard Medical School)

15:30 – 16:00 Coffee break

16:00 – 17:30 Lecture “Growth transitions & starvation” (Ulrich Gerland, TU München)

17:30 – 18:30 Informal discussions

18:30 – 20:00 Dinner

from 20:00 Discussions at the Posters

#### **Day 4, Wednesday, August 7th, 2019**

- 08:50 – 09:00 Introduction to today's programme
- 09:00 – 10:30 Lecture "Self-organisation and pattern formation in cellular systems"  
(Erwin Frey, LMU München)
- 10:30 – 11:00 Coffee break
- 11:00 – 12:30 Lecture "Gene expression" (Stephan Klumpp, Universität Göttingen)
- 12:30 – 13:30 Lunch
- 13:45 – 17:00 Hike to Drachenfels
- 17:00 – 18:30 Lecture "Microfabrication and Microbiology" (Lars Renner, Leibniz Inst. Dresden)
- 18:30 – 20:00 Dinner

#### **Day 5, Thursday, August 8th, 2019**

- 08:50 – 09:00 Introduction to today's programme
- 09:00 – 09:45 Lecture "Antibiotics" (Rosalind Allen, University of Edinburgh)
- 09:45 – 10:30 Coffee break
- 10:30 – 12:00 Lecture "Antibiotic stress and resistance" (Tobias Bollenbach, Univ. zu Köln)
- 12:00 – 13:30 Lunch
- 13:30 – 15:00 Lecture "Mechanics and growth of the cell envelope"  
(Sven van Teeffelen, Pasteur Institute, Paris)
- 15:30 – 16:00 Coffee break
- 16:00 – 17:30 Lecture "Bacterial endospores" (Ilka Bischofs, MPI Marburg)
- 17:30 – 18:30 Informal discussions
- 18:30 – 20:00 Dinner

#### **Day 6, Friday, August 9th, 2019**

- 08:50 – 09:00 Introduction to today's programme
- 09:00 – 10:30 Lecture "Null models of bacterial evolution"  
(Oskar Hallatschek, University of California at Berkeley)
- 10:30 – 11:00 Coffee break
- 11:00 – 11:45 Lecture "Evolution of antibiotic resistance"  
(Rosalind Allen, University of Edinburgh)
- 11:45 – 12:30 Final discussion
- 12:30 – 14:00 Lunch & Departure