ACROSS DISCIPLINES AND CULTURAL DIFFERENCES
CROSSING BORDERS: UNRAVELING PRINCIPLES OF LIFE WITH QUANTITATIVE TOOLS

2012 SUMMER SCHOOL OF THE HeKKSaGOn CONSORTIUM
HEIDELBERG UNIVERSITY, KYOTO UNIVERSITY, KARLSRUHE INSTITUTE OF TECHNOLOGY,
TOHOKU UNIVERSITY SENDAI, UNIVERSITY OF GÖTTINGEN, OSAKA UNIVERSITY
HEIDELBERG UNIVERSITY, SEPTEMBER 17-26, 2012

Date: 17-26 September 2012
Venue: HCA Heidelberg Center for American Studies, Hauptstr. 120, 69117 Heidelberg

PROGRAM
SUNDAY 16 SEPTEMBER 2012
17:00–18:00 Welcome information desk

MONDAY 17 SEPTEMBER 2012
09:00–09:30 Poster set up
09:30 Opening
Welcome
Announcements
Prof. Thomas Holstein, Prof. Motomu Tanaka
10:00 Introduction of Participants
11:00 Prof. Erich Sackmann
"Physic and functions of cell adhesion: Lessons learned from model membrane studies"
12:00–13:00 Lunch break
13:00–14:30 Crash Courses “Survival Japanese” – “Survival German”
14:30–15:30 Prof. Thomas Holstein
“Wnt signaling and de novo pattern formation in hydra”
15:30–15:45 Coffee break
15:45–16:45 Prof. Motomu Tanaka
“Physical modeling of diseases and development by quantitative functionalization of soft interfaces”
18:00–20:00 Welcome Reception (Shimadzu Dinner)
Haus Buhl, Hauptstr. 232-234
Welcome Speech: Vice Rector Prof. Dr. Thomas Rausch
TUESDAY 18 SEPTEMBER 2012
09:30  Prof. Norio Nakatsuji
    "Cell-material integration for stem cell research at iCeMS, and how I began to enjoy'
    multidisciplinary research in 1980s"
10:30  Dr. Johann Engelhardt
    "Diffraction-unlimited fluorescence microscopy"
11:30  Prof. Izumi Takagi
    "From metaphors to models, or top-down vs. bottom-up approaches"
12:30 – 13:30  Lunch break
13:30  Prof. Marciniak-Czochra
    "Mathematical approaches to understand biological
    pattern formation"
     Transfer to Neuenheimer Feld 267
16:00  BIOQUANT, Greenier Room
    Vice-Rector Prof. Thomas Rausch
    "BioQuant and the institutes of the Science Campus"
16:45  Visit of BioQuant Core Facilities ‘Nikon Imaging Center’ and
    ‘Electron Microscopy’ (in small groups)

WEDNESDAY 19 SEPTEMBER 2012
12:30 – 13:00  Dr. Fernanda Rossetti
    "Model cell membranes: interfacial interactions with solid substrates and
    living tissue sheets”
13:00 – 15:45  Presentation of PhD projects by students and poster session (1) (LINK)
     Coffee break integrated
16:00 – 18:30  Heidelberg Sightseeing
    Guided tour of University, Old Town and Castle of Heidelberg
    Meeting point: in front of the Neue Universität

THURSDAY 20 SEPTEMBER 2012
08:30  Departure: Uniplatz
09:00 - 10:45  Max Planck Institute for Astronomy - Guided tour
    Dr. Markus Pössel
10:45  Departure from MPI
11:00 – 12:30  EMBL – Guided tour
    Dr. Takashi Hiiragi
12:45  Departure from EMBL
14:15 – 15:15  Dr. Takashi Hiiragi
    "Symmetry breaking in mammalian development”
15:15 – 15:30  Coffee break
15:30 – 18:30  Presentations of PhD projects by students and poster session (2) (LINK)
FRIDAY 21 SEPTEMBER 2012

09:30  Prof. C. Schmidt
"Exploring the boundaries between physics and biology: single-molecule experiments with mitotic motor proteins"

10:30  Prof. Masaaki Sato
"Road to biomechanics research and cellular mechanobiology as my work"

11:30  Discussion with students
Moderator: Prof. Motomu Tanaka

13:00 – 14:00  Lunch break

14:00 – 16:55  Presentations of PhD projects by students & poster session (3) (LINK)
Coffee break integrated

17:00 – 18:00  Prof. Harald Fuess
"Transfer of brewery systems from Germany to Japan"

18:15  Walk to Kulturbrauerei
18:30  Guided tour and beer tasting, Kulturbrauerei Heidelberg

SATURDAY 22 SEPTEMBER 2012

Cultural/Social framework program (optional):
Visit to Mercedes-Benz Museum/Porsche Museum Stuttgart

SUNDAY 23 SEPTEMBER 2012

Cultural/Social framework program (optional):
Sightseeing tour in the Palatinate and wine tasting

MONDAY 24 SEPTEMBER 2012

09:30 – 10:30  Lecture N.N.

10:30 – 11:30  Prof. Akira Harada
"Macroscopic self-assembly and self-healing through molecular recognition"

11:30 – 12:30  Prof. Anthony D. Ho
"Past achievements, present hope and hype, and future perspectives of stem cell research"

12:30 – 13:30  Lunch break
Transfer to Neuenheimer Feld 267

14:00 – 17:30  Participation in Workshop “Physics of Active Soft Matters” (LINK)
BioQuant, Im Neuenheimer Feld 267
TUESDAY 25 SEPTEMBER 2012
09:00  Departure for Karlsruhe
10:00 – 10:30  Introduction to the KIT Karlsruhe Institute of Technology
              Prof. Martin Bastmeyer
10:30 – 11:15  Prof. Stefan Bräse
              “Combinatorial synthesis of small molecular entities –
              natural products, drug delivery and beyond”
11:15 – 12:00  Prof. Martin Bastmeyer
              “Taking cell adhesion to the third dimension”
12:00 – 12:45  Dr. Urban Liebel
              “Next generation High Content Screening – from intelligent robotic microscopes to
              integrated knowledge”
12:45 – 14:00  Lunch break
14:00 – 14:45  Dr.-Ing. Stefan Giselbrecht
              “Getting SMARTer – From biofunctional surfaces to
              bioinspired microdevices”
14:45 – 15:30  Dr. Bastian Rapp
              “Microfluidics et al.: biofunctional interfaces, biosensing and
              microfluidic device prototyping”
15:30 – 16:00  Coffee break
16:00 – 17:45  Tour
18:00  Departure for Heidelberg

WEDNESDAY 26 SEPTEMBER 2012
09:30 – 10:30  Prof. Takao Ohta
              “Individual and collective motions of self-propelled
              soft particles”
10:30 – 11:30  Prof. Kenichi Yoshikawa
              “Emergence of smart structure & function in a cell-sized confinement”
11:30 – 12:30  Prof. Ulf Diederichsen
              “Artificial peptide topologies as mimetics in biochemistry”
12:30 – 13:30  Lunch break
13:30 – 15:30  Evaluation and feedback session
18:00  Farewell Dinner and Poster Prize Award Ceremony)  (LINK)

THURSDAY 27 SEPTEMBER 2012
Departure of participants

Supported by
Robert Bosch Stiftung
INVITED SPEAKERS

1. Martin Baselmeyer, Prof. Dr., KIT Karlsruhe
2. Stefan Bräse, Prof. Dr., KIT Karlsruhe
3. Ulf Diedrichsen, Prof. Dr., University of Göttingen
4. Johann Engelhardt, Dr. rer. nat., Heidelberg University
5. Harald Fues, Prof. Dr., Heidelberg University
6. Stefan Giselbrecht, Dr.-Ing., KIT Karlsruhe
7. Akira Harada, Prof. Dr., Osaka University
8. Takashi Hiiragi, M.D., Ph.D., EMBL Heidelberg
9. Anthony D. Ho, Prof. Dr., Heidelberg University
10. Thomas Holstein, Prof. Dr., Heidelberg University
11. Urban Liebel, Dr., KIT Karlsruhe
12. Anna Marciniak-Czochra, Heidelberg University
13. Norio Nakatsuji, Prof. Dr., Kyoto University
14. Takao Ohta, Prof. Dr., Kyoto University
15. Bastian Rapp, Dr., KIT Karlsruhe
16. Fernanda F. Rossetti, Dr., Heidelberg University
17. Erich Sackmann, Prof. Dr., TUM München
18. Masaaki Sato, Prof. Dr. Tohoku University
19. Christoph Schmidt, Prof. Dr., University of Göttingen
20. Izumi Takagi, Prof. Dr., Tohoku University
21. Motomu Tanaka, Prof. Dr., University of Göttingen
22. Kenichi Yoshikawa, Prof. Dr., Kyoto University

SCIENTIFIC ORGANIZERS

Prof. Dr. Motomu Tanaka, Institute of Physical Chemistry, Heidelberg University
Prof. Dr. Thomas Holstein, Centre for Organismal Studies, Heidelberg University
in close cooperation with colleagues of all six Japanese and German universities.

ADMINISTRATIVE COORDINATION

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Ms Ursula Schöttler (ursula.schoettler@med.uni-heidelberg.de)
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