



65.

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MOSBACHER  
KOLLOQUIUM

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MOLECULAR PROTEIN  
QUALITY CONTROL IN  
HEALTH, AGING AND  
DISEASE

MARCH 27 - 29, 2014



PROGRAM

## SCIENTIFIC ORGANIZERS:

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# TABLE OF CONTENTS

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Organization	2
Welcome address	4
Program at a glance	5
Program	9
Feodor Lynen Medal	14
Otto Warburg Medal	15
Meet the Prof	16
Social program	17
General remarks	
Accommodation	18
Conference office	18
Internet access	18
Lunch & coffee breaks	19
Posters	19
Industrial exhibition	19
Registration	20
Proceedings	21
Venue	21
Sponsors	22
Exhibitors	23

## Images page 1:

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Dear Colleagues,

The spring meetings of the German Society for Biochemistry and Molecular Biology (GBM) are held annually in the picturesque town of Mosbach to promote the exchange of scientific ideas and education of young scientists. The scientific theme of the 65th meeting is “Molecular quality control of proteins in health and disease”.

The picture how proteins acquire and maintain their functional conformation in the cell has changed dramatically in recent years. We have witnessed the discovery of sophisticated mechanisms that regulate the fate of cellular proteins in a manner tailored to physiological needs and requirements. The molecular machines involved help to monitor and control protein conformation at different stages, from their biosynthesis at the ribosome up to the assembly of protein complexes and finally their commitment to degradation. Some of the most detrimental diseases, including neurodegenerative diseases and cancer, are based on the failure of the protein quality control system. A decline in protein quality control also plays a major role in aging. These emerging new concepts mark an exciting era in which interdisciplinary approaches ranging from biophysics to cell biology and organismal studies are setting new paradigms which extend the classical views of protein science.

At the meeting, emerging concepts will be discussed by leading experts covering the different facets of the field including the structure, biochemistry, cell biology and mechanism of protein folding diseases.

We look forward to seeing you in Mosbach.

Johannes Buchner and Ulrich Hartl

# PROGRAM AT A GLANCE

WEDNESDAY, MARCH 26

17:00 - 20:00

Arrival and registration

20:00 - 22:00

Get-together and welcome reception

City hall/Mosbach



## DAY OF ARRIVAL

The Steering Committee of the German Society for Biochemistry and Molecular Biology (Gesellschaft für Biochemie und Molekularbiologie, GBM) and the city of Mosbach invite you to a welcome reception at 8.00 p.m. in the city hall (Rathaus, Marktplatz/ Hauptstraße) in Mosbach (to end about 10 p.m. - no registration required)

We thank the city of Mosbach for the kind hospitality.

# PROGRAM AT A GLANCE

## THURSDAY, MARCH 27

08:50 - 09:00	Opening remarks
09:00 - 10:45	<b>Session 1:</b> Molecular chaperones and protein folding Chris Dobson, Cambridge (UK) Manajit Hayer-Hartl, Martinsried (DE) Judith Frydman, Stanford (US)
10:45 - 11:15	Coffee break
11:15 - 12:25	<b>Session 1 (continuation):</b> David Agard, San Francisco (US) Elke Deuerling, Konstanz (DE)
12:30 - 13:30	Lunch break
12:30 - 13:30	Meet the Prof
13:30 - 15:00	Poster Session 1 (even numbers)
15:00 - 16:45	<b>Session 2:</b> Proteostasis, cell stress and aging Hideki Taguchi, Tokyo (JP) Andrew Dillin, Berkeley (US) Klaus Richter, Munich (DE)
16:45 - 17:05	Coffee break
17:05 - 17:20	Bayer HealthCare PhD Prize: Eva Huber, Munich (DE)
17:25 - 18:55	GBM General Meeting
19:00 - 20:00	Feodor Lynen Lecture: Richard I. Morimoto, Evanston (US)
20:00 - 21:30	Lynen reception
20:00 - 21:30	Poster Session 2 (all numbers)
22:00 - 24:00	Party & Dance (org. by Junior GBM)



# PROGRAM AT A GLANCE

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FRIDAY, MARCH 28

09:00 - 10:10	<b>Session 3:</b> Assembly of complex macromolecular machines Ed Hurt, Heidelberg (DE) Bernd Bukau, Heidelberg (DE)
10:10 - 10:40	Coffee break
10:40 - 11:50	<b>Session 3 (continuation)</b> Reinhard Lührmann, Göttingen (DE) Kazuhiro Nagata, Kyoto (JP)
11:50 - 12:25	<b>Session 4:</b> Ribosomes and the mechanism of translation Roland Beckmann, Munich (DE)
12:30 - 13:30	Lunch break
12:30 - 13:30	Meet the Prof
13:30 - 15:00	Poster Session 3 (uneven numbers)
15:00 - 16:10	<b>Session 4 (continuation)</b> Marina Rodnina, Göttingen (DE) Rachel Green, Baltimore (US)
16:10 - 16:30	Coffee break
16:30 - 17:05	<b>Session 4 (continuation):</b> Linda Partridge, Cologne (DE)
17:15 - 18:30	<b>Otto Warburg Medal &amp; Award Lecture:</b> Rudolf Jaenisch, Cambridge (US)
18:30 - 20:00	Junior GBM Meeting



## SATURDAY, MARCH 29

09:00 - 10:10	<b>Session 5:</b> <b>Misfolding and disease</b> Jeffery Kelly, La Jolla (US) Anne Bertolotti, Cambridge (UK)
10:10 - 10:40	Coffee break
10:40 - 11:50	<b>Session 5 (continuation):</b> Linda Hendershot, Memphis (US) Jeff Brodsky, Pittsburgh (US)
11:50 - 12:10	Poster Prizes and closing remarks



Alte Maelzerei/Congress venue





## WEDNESDAY, MARCH 26

17:00 - 20:00	Arrival and registration
20:00 - 22:00	Get-together and welcome reception (in the city hall)

## THURSDAY, MARCH 27

08:50 - 09:00	Opening remarks: <b>Roger Goody</b> (President of GBM) <b>Johannes Buchner</b> (Scientific Board)
09:00 - 12:25	<b>Session 1 (Chair: J. Buchner):</b> <b>Molecular chaperones and protein folding</b>
09:00 - 09:35	Chris Dobson, Cambridge (UK) <i>The amyloid phenomenon and its significance</i>
09:35 - 10:10	Manajit Hayer-Hartl, Martinsried (DE) <i>GroEL/ES chaperonin modulates the rate and mechanism of TIM-Barrel domain folding</i>
10:10 - 10:45	Judith Frydman, Stanford (US) <i>The interplay of cotranslationally acting chaperones during protein biogenesis</i>
10:45 - 11:15	Coffee break
11:15 - 12:25	<b>Session 1 (continuation, Chair: F.U. Hartl)</b>
11:15 - 11:50	David Agard, San Francisco (US) <i>The structure and mechanism of the Hsp90 Molecular Chaperone: a ubiquitous facilitator of cellular signaling</i>
11:50 - 12:25	Elke Deuerling, Konstanz (DE) <i>Sorting right from wrong: How ribosome-associated chaperones affect co-translational transport processes</i>



## THURSDAY, MARCH 27

12:30 - 13:30	Lunch break
12:30 - 13:30	Meet the Prof (Chair: H. Fleckenstein): Richard I. Morimoto
13:30 - 15:00	Poster Session 1 (even numbers)
15:00 - 16:45	Session 2 (Chair: Estefanía Muciño): Proteostasis, cell stress and aging
15:00 - 15:35	Hideki Taguchi, Tokyo (JP) <i>Non-amyloid oligomer-based phenotype switch in yeast Sup35</i>
15:35 - 16:10	Andrew Dillin, Berkeley (US) <i>HSF-1: A central mediator of cytoskeletal form and function</i>
16:10 - 16:45	Klaus Richter, Munich (DE) <i>Evaluation of polyglutamine induced toxicity</i>
16:45 - 17:05	Coffee break
17:05 - 17:20	Bayer HealthCare PhD Prize: Eva Huber, Munich (DE) <i>The immunoproteasome: structure, function and therapeutic potential</i>
17:25 - 18:55	GBM General Meeting
19:00 - 20:00	Feodor Lynen Lecture: Richard I. Morimoto, Evanston (US) <i>Regulation of organismal proteostasis by intertissue communication</i>
20:00 - 21:30	Lynen reception
20:00 - 21:30	Poster Session 2 (all numbers)
22:00 - 24:00	Party & Dance (org. by Junior GBM)



## FRIDAY, MARCH 28

09:00 - 11:50	Session 3 (Chair: J. Frydman): Assembly of complex macromolecular machines
09:00 - 09:35	Ed Hurt, Heidelberg (DE) <i>Deciphering eukaryotic ribosome biogenesis</i>
09:35 - 10:10	Bernd Bukau, Heidelberg (DE) <i>Folding of newly synthesized polypeptides</i>
10:10 - 10:40	Coffee break
10:40 - 11:50	Session 3 (continuation)
10:40 - 11:15	Reinhard Lührmann, Göttingen (DE) <i>Structure and function of the spliceosome</i>
11:15 - 11:50	Kazuhiro Nagata, Kyoto (JP) <i>Crosstalk among protein, redox and calcium homeostasis in the ER</i>
11:50 - 17:15	Session 4 (Chair: J. Kelly): Ribosomes and the mechanism of translation
11:50 - 12:25	Roland Beckmann, Munich (DE) <i>Structural basis of eukaryotic mRNA surveillance, translation termination and recycling</i>
12:30 - 13:30	Lunch break
12:30 - 13:30	Meet the Prof (Chair: G. Patzer): <b>Rudolf Jaenisch</b>
13:30 - 15:00	Poster Session 3 (uneven numbers)



## FRIDAY, MARCH 28

15:00 - 17:15	Session 4 (continuation)
15:00 - 15:35	Marina Rodnina, Göttingen (DE) <i>Ribosome recoding as a kinetic event</i>
15:35 - 16:10	Rachel Green, Baltimore (US) <i>Mechanisms of mRNA surveillance defined by ribosome profiling and biochemistry</i>
16:10 - 16:30	Coffee break
16:30 - 17:05	Session 4 (continuation)
16:30 - 17:05	Linda Partridge, Cologne (DE) <i>Insulin signalling and the ageing nervous system</i>
17:15 - 18:30	Otto Warburg Medal & Award Lecture: Rudolf Jaenisch, Cambridge (US) iPS Cell technology and disease research: Issues to be resolved
18:30 - 20:00	Junior GBM Meeting



## SATURDAY, MARCH 29

09:00 - 11:50	Session 5 (Chair: A. Dillin): Misfolding and disease
09:00 - 09:35	Jeffery Kelly , La Jolla (US) <i>Small molecule folding probes to quantify the functional fraction of a specific protein in a cell with minimal folding equilibrium shifts</i>
09:35 - 10:10	Anne Bertolotti , Cambridge (UK) <i>Coping with protein quality control failure</i>
10:10 - 10:40	Coffee break
10:40 - 11:50	Session 5 (continuation)
10:40 - 11:15	Linda Hendershot , Memphis (US) <i>Protein folding in the ER: life and death decisions for BiP substrates</i>
11:15 - 11:50	Jeff Brodsky , Pittsburgh (US) <i>Genome-wide screens uncover conserved factors and unexpected pathways that affect ion channel biogenesis and disease presentation</i>
11:50 - 12:10	Poster prizes and closing remarks: <b>Roger Goody</b> (President of GBM) <b>Franz-Ulrich Hartl</b> (Scientific Board)

In 2014, the German Society for Biochemistry and Molecular Biology (GBM) will honor

**Richard I. Morimoto**

from the Northwestern University (Evanston, USA) with the Lynen Medal in the context of the 65th Mosbacher Kolloquium on

March 27th, at 19:00

followed by the Lynen Lecture and the Lynen Reception for all participants of the conference.

Professor Richard Morimoto is renowned for his research on the regulation of the heat shock stress response and the function of molecular chaperones.



The Lynen Lecture is named after the famous German biochemist Feodor Lynen. He had a major impact on the development of biochemistry after the Second World War. His studies were devoted to the understanding of chemical details of metabolic processes in living cells and he was very supportive and active in Science politics.

His work connected chemistry, medicine and biology and he strongly promoted the connection of German scientists to colleagues in the United States, Israel, Japan and China. And Feodor Lynen has been the vice president of the GBM from 1953 – 1956.

This year the German Society for Biochemistry and Molecular Biology (GBM) will honor

## **Rudolf Jaenisch**

from the Whitehead Institute for Biomedical Research and the Massachusetts Institute of Technology (Cambridge, USA) with the Otto Warburg Medal.

Professor Jaenisch will receive the highest award in Germany for biochemists and molecular biologists for his pioneering work in the field of epigenetic regulation of gene expression in mammalian development and disease. He is internationally known for his research on embryonic stem cell biology.

The award ceremony and award lecture will take place on

Fri., March 28, at 17:15.

The award promotes outstanding scientific excellence and encourages ground-breaking achievements on an international level in the field of fundamental biochemical and molecular biological research.

Since 1963 the Otto Warburg Medal is intended to commemorate the outstanding achievements of the eminent researcher Otto Heinrich Warburg. Elsevier and its flagship title *Biochimica et Biophysica Acta* (BBA) are exclusive sponsors of the Medal. To emphasize the importance of excellent scientific research and motivate young researchers to achieve outstanding results, the prize is endowed with 25,000 Euros.



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## MEET THE PROF

Once again the Junior GBM will organize the established event „Meet the Prof“ with successful speakers from science and research.

Guest: Richard Morimoto

Thu., March 27, 12.30 - Rm. Darre

(Chair: Hannah Fleckenstein - Junior-GBM Heidelberg)

Guest: Rudolf Jaenisch

Fri., March 28, 12:30 - Rm. Darre

(Chair: Gwendolyn Patzer - Junior-GBM Marburg)

In an informal atmosphere, you've got the chance to ask the questions which keep you up at night - e.g. how do I make a career in science? Did the speaker have fun on his/her scientific path and which experiences were helpful? You are welcome to join and ask further questions.

For students only! Registration required!



### WELCOME RECEPTION

The Steering Committee of the German Society for Biochemistry and Molecular Biology (GBM) and the city of Mosbach invite you to a welcome reception at 8.00 p.m. in the city hall (Rathaus, Marktplatz / Hauptstraße) in Mosbach (to end about 10 p.m.)

We thank the city of Mosbach for the kind hospitality.

Date:

Wednesday, March 26, 8.00 p.m.

Town hall, (Rathaus, Marktplatz / Hauptstraße)

### LYNEN RECEPTION

The GBM Steering Committee invites you to a reception in honor of Feodor Lynen after the Lynen Lecture.

Date:

Thursday, March 27, 8.00 p.m.

Alte Mälzerei

### PARTY AND DANCE

The students committee of the German Society for Biochemistry and Molecular Biology is organizing an informal get-together with dance.

Date:

Thursday, March 27, 10 p.m.

(after Lynen reception)

Hopfen Keller (Alte Mälzerei)

For all participants

## ACCOMMODATION

Accommodation can be booked through Städtisches Verkehrsamt (Tourist office). Please use the accommodation form at the meeting website.

You will receive confirmation by email.

For further questions concerning hotel reservation please contact the tourist information (Tel. +49 6261-9188-20, Fax -15, Email [tourist.info@mosbach.de](mailto:tourist.info@mosbach.de)).

## CONFERENCE OFFICE

Opening hours:

Wed., March 26	05.00 p.m. - 07.45 p.m.
Thu., March 27	08.00 a.m. - 04.30 p.m.
Fri., March 28	08.30 a.m. - 04.30 p.m.
Sat., March 29	08.30 a.m. - 11.00 a.m.

Telephone and Fax numbers of the conference office (3 - 6 April 2013) are:

Tel. +49 (0) 6261 9292-78,  
Fax. +49 (0) 6261 9292-79

## INTERNET

There will be two wireless LAN access points in the foyer next to the conference office.

SSID: AM	Kongress
Username: gbm	
Password: gbm-2014 (Registration on browser)	Key: gbm-2014 (WPA2 encryption)

### LUNCH & COFFEE BREAKS

Coffee, tea and mineral water will be provided for free during the coffee breaks.

Lunch is available at your own expense in the conference center or you can also visit one of the restaurants in the town of Mosbach.

### POSTERS

Poster sessions:

Thursday, March 27, 13:30 - 15:00: even numbers

Thursday, March 27, 20:00 - 21:30: all numbers

Friday, March 28, 13:30 - 15:00: odd numbers

During the poster sessions the presenting authors are requested to stay near their posters. Please see the abstract book for poster numbers and authors. Posters should be presented throughout the whole meeting.

The best three posters will be awarded (a certificate and 300 €).

The winners will be announced by the end of the Kolloquium on Saturday. To receive the price, personal attendance is required.

The posters should be presented in Portrait format (DIN A0 resp. ~120 x 85 cm)

### INDUSTRIAL EXHIBITION

Please visit the booths of our sponsors!



## REGISTRATION

members* academia	250 €
non-members academia	340 €
undergraduate members*	55 €
undergraduate non-members	85 €
graduate members*	85 €
graduate non-members	130 €
retiree members*	130 €
retiree non-members	180 €
industry	400 €

\*Member of the GBM, VAAM, DGZ, Dechema

Please register online at the meeting homepage.

The registration fee includes coffee/tea/mineral water during the conference breaks.

Please note the payment terms described in the registration confirmation email. With a payment later than February 10, 2014 your registration cannot be accepted as early registration.

After February 28, 2014 the registration fee cannot be refunded.

If you want to join the GBM with your registration to enjoy the reduced participation fee, please fill in the membership application form (s. [www.gbm-online.de](http://www.gbm-online.de)) and send it to the GBM head office.



## PROCEEDINGS

Your name badge, program, abstract booklet are available at the registration desk.

We kindly ask to wear your name badge as an entry ticket during the whole meeting.

## VENUE - MOSBACH

Mosbach is located on the railway line (S-Bahn) Mannheim-Heidelberg-Mosbach-Osterburken, 45 kilometres east of Heidelberg.

The nearest airport is Frankfurt/Main. There are convenient train connections from Frankfurt airport station to Mannheim and from there to Mosbach.

By car:

From Frankfurt / Heidelberg: Motorway A6  
exit Sinsheim - then B292 to Mosbach

From Stuttgart / Heilbronn:

A6 exit Neckarsulm - B27 to Mosbach

From Würzburg / Nürnberg:

A81 exit Osterburken, B 292 to Mosbach.

## VENUE - ALTE MAELZEREI

The congress center is located just above the old city centre.

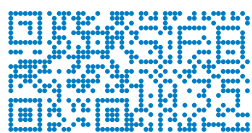
When arriving by car, please follow the yellow signs to parking areas P5 „Alte Mälzerei“ or P6 „Altstadt“.

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Alte Bergsteige 7  
74821 Mosbach  
[www.maelzerei.de](http://www.maelzerei.de)



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### Topics

- Mechanisms of Gene Expression
- Membranes, Receptors & Bioenergetics
- Structural Biology & Biophysics
- From Chemical Biology to Molecular Medicine
- Molecular Neuroscience
- System Biology, Metabolomics & Theoretical Biology

### Conference Chair

Prof. Dr. Volker Haucke

Leibniz Institut für Molekulare Pharmakologie, Berlin

### Organizer

Gesellschaft für Biochemie und Molekularbiologie

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**Molecular  
Life Sciences**

# 66.

## MOSBACHER KOLLOQUIUM

MARCH 26 - 28, 2015  
MOSBACH / BADEN

ORGANIZATION:

ROLAND LILL  
MARTINA MUCKENTHALER  
RALF-R. MENDEL

TOPICS:

METALS IN ENERGY METABOLISM

METALLOPROTEOMICS: INTRACELLULAR TRAFFICKING AND  
HOMEOSTASIS

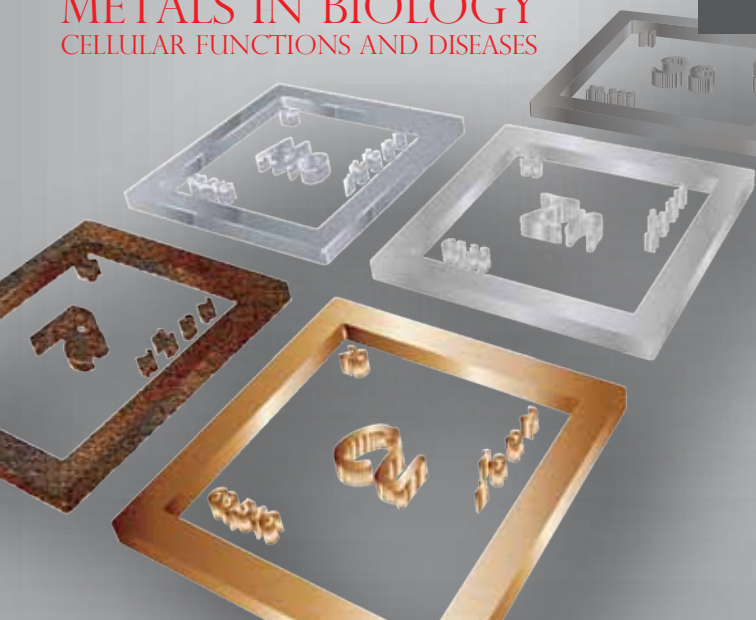
BIOGENESIS OF METALLOPROTEINS

METALS IN ENZYME FUNCTION

METALS IN DISEASE: NEURODEGENERATION, INFLAMMATION,  
INFECTION AND HEMATOLOGY

## METALS IN BIOLOGY

CELLULAR FUNCTIONS AND DISEASES





[WWW.GBM-ONLINE.DE](http://WWW.GBM-ONLINE.DE)