



Program Overview

Monday, September 15th

- 09:00 *Registration*
- 09:00 - 17:00 Career Fair for Life Sciences
- 17:15 - 17:30 **Horizons Opening Ceremony**
- 17:30 - 18:15 **Keynote Lecture: Ingo Potrykus**
“The Golden Rice Project”
- 18:15 - 19:00 **Jeff Lichtman**
“Imaging the Connectome”
- 21:00 Pub Crawl - Join us for a Beer

Tuesday, September 16th

- 09:00 *Registration*
- 09:30 - 10:15 **Patrick Cramer**
“Recent insights into the mechanisms of genome transcription”
- 10:15 - 11:00 **Awarded Student Talks**
Monica Risley - “Controlling electroconvulsive seizure recovery time in *D. melanogaster* and *C. elegans*”
Markus Kröss - “The molecular cause for high holding efficiency in specialized smooth muscles”
Lando Schwenen - “Pore spanning membranes as a model system for SNARE mediated membrane fusion”
- 11:00 - 11:30 *Coffee Break*
- 11:30 - 12:15 **Linda Van Aelst**
“Rho regulators in neuronal development and associated disorders”
- 12:15 - 13:00 **Gero Miesenböck**
“Light Sleep”
- 13:00 - 14:30 *Lunch*
- 14:30 - 15:15 **Vinzenz Unger**
“How Membranes Get Bent”
- 15:15 - 16:00 **Steffen Lemke**
“Turning stochastic into coordinated cell behavior”
- 16:00 - 16:25 *Elevator Pitch Session*
- 16:25 - 16:45 *Coffee Break*
- 16:45 - 17:30 **Nobel Lecture: Sir John Walker**
“The ATP synthase: new life and death in old enzyme”
- 17:30 - 19:00 *Wine and Cheese*
Poster Session I - odd numbers
- 20:00 *Bowling*

**Wednesday, September 17th**

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| 09:00 | <i>Registration</i> |
| 09:30 - 10:15 | Margaret Liu “Gene-Based vaccines: Immunogenicity, Efficacy, and Unintended Consequences” |
| 10:15 - 11:00 | Anne Spang “From protein transport to mRNA translation” |
| 11:00 - 11:30 | <i>Coffee Break</i> |
| 11:30 - 12:15 | Nobel Lecture: Ada Yonath “Can structures lead to advanced therapeutics?” |
| 12:15 - 12:30 | Awarded Student Talk Inessa De - “Structural insights into the function of the spliceosomal RNA helicase Aquarius” |
| 12:30 - 13:00 | <i>Elevator Pitch Session</i> |
| 13:00 - 14:30 | <i>Lunch Buffet</i> Poster Session II - even numbers |
| 14:30 - 15:15 | Mei Hong “Structure and Dynamics of Membrane Proteins from Solid-State NMR Spectroscopy” |
| 15:15 - 15:45 | Awarded Student Talks Kristiane Rusitzka - “4Å cryoEM structure and mutagenesis of the dodecahedral acetylcholine-binding protein from the snail <i>Biomphalaria glabrata</i> ” Sunit Mandad - “A Glimpse at the molecular architecture of Brain pre-synaptic nerve terminal” |
| 15:45 - 16:30 | Sara Zanivan “Unravelling the pro-angiogenic potential of cancer-associated fibroblasts using high resolution proteomics” |
| 16:30 - 16:45 | <i>Coffee Break</i> |
| 16:45 - 17:30 | Gabriel Lander “Deciphering the molecular mechanism of eukaryotic protein degradation using cryoEM” |
| 17:30 - 18:15 | Jason Chin “Reprogramming the Genetic Code” |
| 18:30 - 20:00 | <i>City Tour</i> |
| 20:00 | <i>Dinner and Conference Party</i> |

Thursday, September 18th

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| 09:00 | <i>Registration</i> |
| 10:15 - 11:00 | Ian Chambers “Transcription factor control of transitions in pluripotent cells” |
| 11:00 - 11:30 | <i>Coffee Break</i> |
| 11:30 - 13:00 | Round Table: “How to Choose a PostDoc Position” |
| 13:00 - 14:30 | <i>Lunch</i> |
| 14:30 - 15:15 | Sir Adrian Bird “DNA Methylation and Rett syndrome” |
| 15:15 - 15:35 | Awarded Student Talk Lucy Stark - “Metatranscriptome dynamics during disturbed biogas production” |
| 15:35 - 16:20 | Dame Linda Partridge “Nutrient-Sensing Pathways and Ageing” |
| 16:20 - 16:45 | <i>Coffee Break</i> |
| 16:45 - 17:30 | Peter Cresswell “Molecular Mechanisms of MHC Class I-Restricted Antigen Processing” |
| 17:30 - 18:15 | Frances Ashcroft “From bench to bedside and back again: KATP channels and neonatal diabetes” |
| 18:15 | <i>Closing Ceremony</i> |





GENERAL INFORMATION



Elevator Pitch Sessions

This is a chance for our participants to promote their posters in a new series of fun sessions held for the first time in Horizons. Participants prepare one slide with their most favorite figure and present it to everyone in a limited time, introducing the topic and raising interesting questions about the poster. This gives the opportunity to attract the interest of field experts and other participants to the poster, to which they can proceed for more details during the poster session that follows the elevator pitch session on the same day.

Poster Sessions

Around 70 posters will be presented during Horizons 2013. Students can therefore discuss their research individually with speakers and fellow students. A jury, consisting of three speakers, and three students from our PhD program will evaluate the posters, and prizes will be given for the best three posters (Prize 1-3). To allow the jury to talk to the presenters of the the posters, students should be at their posters during the following subsessions:

Odd poster numbers will be viewed preferentially on Tuesday, even poster numbers on Wednesday.

Posters will be presented in the Ludwig Prandtl Hall.

Wine and Cheese: During the first poster session, a wine and cheese tasting is organized, where a great variety of cheese from different places will be served. With a glass of wine in hand, you can have candid discussions regarding the research of young scientists from all parts of the world.

Poster Prize

The poster prizes will be awarded to three PhD students presenting innovative work in the field of Molecular Biology. All registered PhD students presenting a poster at the International PhD Student Symposium "Horizons in Molecular Biology" 2014 will be eligible for the awards.

The only requirement is to be available during the poster sessions to present the work to members of the jury. The jury (to be announced) will comprise the invited speakers and IM-PRS PhD students and faculty.



Awarded Student Talks

One of the main aims of Horizons is sharing the research across the disciplines and among scientists at different stages of their career. Therefore, this year we introduced the Awarded Student Talks sessions.

The concept is that students present their original work focusing on the results and the impact of their work. Based on the submitted proposals for the award, we selected students who will give the oral presentation.

- **Inessa De**, Max Planck Institute for Biophysical Chemistry
Structural insights into the function of the spliceosomal RNA helicase Aquarius
- **Markus Kröss**, University of Salzburg
The molecular cause for high holding efficiency in specialized smooth muscles
- **Sunit Mandad**, Max Planck Institute for Biophysical Chemistry
A Glimpse at the molecular architecture of Brain pre-synaptic nerve terminal
- **Monica Risley**, Florida Atlantic University
*Controlling electroconvulsive seizure recovery time in *D. melanogaster* and *C. elegans**
- **Kristiane Rusitzka**, University of Mainz
*4Å cryoEM structure and mutagenesis of the dodecahedral acetylcholine-binding protein from the snail *Biomphalaria glabrata**
- **Lando Schwenen**, University of Göttingen
Pore spanning membranes as a model system for SNARE mediated membrane fusion
- **Lucy Stark**, Hochschule Mittweida
Metatranscriptome dynamics during disturbed biogas production

Congratulation to all the awardees!

Selection committee:

Roland Dosch, University of Göttingen Medical School
Shrutee Jakhanwal, MPI for Biophysical Chemistry
Manuel Maidorn, University of Göttingen Medical School
Dragomir Milovanovic, chair, MPI for Biophysical Chemistry
Anita Smarandache, University of Göttingen Medical School
Sven Truckenbrodt, University of Göttingen Medical School
Kanika Vanshylla, University of Göttingen Medical School

IMPRS for Molecular Biology

For the 11th time, the Horizons Symposium is organized by students of the International Max Planck Research School (IMPRS) for Molecular Biology at the University of Göttingen. The Molecular Biology Program is jointly conducted by many different departments of the University of Göttingen, the Max Planck Institutes for Biophysical Chemistry and Experimental Medicine, the European Neuroscience Institute as well as the German Primate Center. The common aim is to offer an intensive, research-oriented education in order to prepare the students for a professional career in the life sciences. This broad spectrum of topics is mirrored in the fields covered in Horizons. In addition to the small classes and specialized hands-on laboratory courses, the intercultural experience is extraordinary. Excursions, culture nights and workshops with students from all over the world naturally become a “seminar” on intercultural communication. Students can join the program after completing their Bachelor studies. During the first year, students receive a broad education in molecular biology through lectures, lab rotations and methods courses delivered by the participating institutions. From the second year, the students conduct their own research during their MSc or PhD thesis projects and receive further training in specialized methods and skills courses within the Göttingen Graduate School for Neurosciences and Molecular Biosciences (GGNB), which is funded by the German Excellence Initiative.

In September 2000 the first brave students from as far away as Ghana, China, Mexico and Malaysia came to Göttingen to join the new International MSc/PhD Molecular Biology Program. Today, with the fifteenth batch of twenty students joining the IMPRS, the program has become very successful as demonstrated by excellent evaluations, awarded prizes, and an ever increasing number of applicants. By now, more than 100 students have successfully defended their PhD theses within the program and kissed the Gänseliesel. Kissing this statue that stands on a fountain on the market place in the middle of the city and giving her flowers is an old tradition for Göttingen PhD students (read more about this in the text about Göttingen, page 22) For more detailed information about the International MSc/PhD Molecular Biology Program in Göttingen, please take a look at our website:

www.gpmolbio.uni-goettingen.de





History of Horizons

In 2003, the coordinators and students of the IMPRS Molecular Biology in Göttingen decided to host an international conference the way they felt it should be, "from PhD students for PhD students" - and Horizons in Molecular Biology was born! The meeting was designed to promote scientific exchange between young life scientists from different disciplines and to provide a relaxed and direct exchange with internationally renowned researchers. This concept has been followed throughout the history of Horizons and is still at the heart of the 11th time that our (and your! - because what would a conference be without its participants?) Horizons in Molecular Biology symposium takes place.

The inaugural International PhD Student Symposium Horizons in Molecular Biology took place at the Göttingen Center for Molecular Biosciences (GZMB) on December 4th, 2003. It was a small event with the majority of its approximately 90 participants coming from Göttingen. Two years later, the 2nd Horizons symposium "Decoding Nature - Hierarchy of Interactions" had already quite different dimensions: more than 200 participants were attracted by the impressive list of invited speakers presenting their latest research during thirteen lectures in four sessions. Among the speakers were Eric Westhof, Walter Gehring, Anthony Hyman, and Lewis Wolpert.

September 14th-16th, 2006, the Horizons Symposium went into its 3rd round and expanded even further: 18 renowned scientists presented their research in five sessions to approximately 300 participants from 25 countries. More than 100 posters were presented in three poster sessions and twelve students were chosen to give a talk in one of the three student talk sessions. The 4th Horizons Symposium, September 12th-15th, 2007, was an even greater success including over 300 participants representing 35 different countries. In conjunction with the symposium, more than 500 young researchers also had the amazing opportunity to explore career options at the first Horizons Career Fair. More than 20 companies and institutions provided a unique program of career presentations, CV checks, workshops and a live interview.

During the 5th Horizons symposium, apart from the, by now, "usual" program, during the Career Fair, young scientists were able to interact with scientists working in different fields in small groups in Brunch Club sessions. A highlight in the 6th Horizons was a panel discussion on career paths for scientists, featuring two professors at different stages in their careers, a study director from a pharmaceutical company and the head of global marketing of Roche Applied Science.

The 7th Horizons conference was special, since it coincided with the 10th anniversary of our graduate programme, the International Max Planck Research School for Molecular Biology. Special guests for the celebrations were two recent Nobel Laureates: Venki Ramakrishnan and Carol Greider. Additionally, there were alumni talk sessions in which six alumni shared their latest research not only with their former colleagues from Göttingen, but with all 300 participants. The 8th Horizons featured a novel concept of enhancing interaction between speakers and participants: the "Connectomics" session offered the possibility to discuss science in a relaxed atmosphere.