

# YIRD 2019



## 3<sup>rd</sup> Young Investigator Research Day

8-9 August 2019, Kiel, Germany

Metaorganism research & career development



### Career

1<sup>st</sup> day sessions:

**Keynote speaker**

**Dr. Mary Beth Decker, Yale**

- Personal development
- Proposal writing tips
- Funding opportunities:



### Science

2<sup>nd</sup> day sessions:

**Keynote speaker**

**Prof. Paul Turner, Yale**

- Metaorganism ecology & evolution
- Small scale host-microbe interaction
- Virus: Functional role & application



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### Social

- Networking BBQ
- Metaorganism PARTY
- Poster cross-talk



### Registration

until **10 July 2019**

**No registration fee!**  
**Social events included.**

 **GEOMAR, Wischhofstrasse 1-3, 24148 Kiel, Germany**

**Organisers:**

Cornelia Jaspers - GEOMAR  
Jinru He - CAU



Email: [yird2019@outlook.com](mailto:yird2019@outlook.com)

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**Program: 8-9 August 2019, Kiel, Germany**

**Metaorganism research & career development**

Thursday 8.8.2019

10:00-11:00: Registration & coffee

11:00-11:15: Opening & welcome: General outline of funding opportunities

11:15-12:00: Keynote Dr. M.B. Decker (Yale University): Women in science, career options in the US

12:00-12:30: German Exchange Service short & long term funding opportunities

(Deutscher Akademischer Austauschdienst – DAAD) Cordula Behrsing cancelled to be presented by Cornelia Jaspers

12:30-13:00: How to build up a career in science Prof. P. Turner (Yale University, USA)

13:00-14:00: *Lunch*

14:00-14:45: Application for individual fellowships e.g. Marie Skłodowska-Curie  
Alexandra Pohl (NKS MSC, DLR Projektträger)

14:45-15:30: Science management - DFG as employer Astrid Evers

15:30-15:45: *Coffee*

15:45-17:15: Personal development - SWOT analyses (Ute Jülly)

17:15-17:30: *Break*

17:30-17:40: Group picture by Christian Urban

17:40-18:00: How to utilize strengths and weaknesses for future development (Ute Jülly)

18:00-18:45: What's the secret behind a successful academic career? Discussion round with Prof T. Bosch (Christian-Albrechts-Universität)

19:00- *open*: Networking *Metaorganism science* BBQ

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Friday 9.8.2019

08:45-09:00 Welcome

**09:00-10:20 Metaorganism Ecology I**

09:00-09:20 Mohamed-Amine Hassani

09:20-09:40 Ryszard Soluch

09:40-10:00 Jay Bathia

10:00-10:20 Fabian Nies

**10:20-10:40 Poster Flash Mob I [4 min/each]**

Florence Bansept, Lara Schmittmann, Christoph Giez, Barbara Pees, Kim-Sara Wagner

10:40-11:10 *Coffee*

**11:10-12:30 Metaorganism Ecology II**

11:10-11:30 Lucía Pita

11:30-11:50 Janina Lange

11:50-12:10 Julia Johnke

12:10-12:30 Michael Sieber

**12:30-12:55 Poster Flash Mob II [4 min/each]**

Georgios Marinos, Christine Blurton, Vaibhvi, Jakob von Frieling, Jelena Rajkov, Cornelia Jaspers

12:55-14:00 *Lunch*

**14:00-15:40 Metaorganism Function**

14:00-14:20 Román Zapién-Campos

14:20-14:40 Danielle Harris

14:40-15:00 Shauni Doms

15:00-15:20 Clinton Azuure

15:20-15:40 Felix Sommer

**15:40-16:00 Metaorganism Discussion**

16:00-16:15 YIRD2019 Award ceremony & Conclusion

16:30-18:00: *Transport with ferry or bike to GEOMAR West shore building*

18:00-18:05: Introduction by Prof. Thomas Bosch

18:05-19:00: Keynote Prof. Paul Turner (Yale) Virus and phage biodiversity: Potential in human therapy (all CRC members invited) to be held at GEOMAR West shore building

19:00-19:15: Award Ceremony of: Outstanding CRC Young Investigator Mentors

19:15-19:45: Reception with beer and wine

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**YIRD end**

*16:30-18:00: Transport with ferry or bike to GEOMAR West shore building*

### **CRC 1182 Public lecture series (open to all)**

18:00-18:05: Introduction by Prof. Thomas Bosch

18:05-19:00: Keynote Prof. Paul Turner (Yale) Virus and phage biodiversity: Potential in human therapy (all interested people welcome) to be held at GEOMAR West shore building

19:00-19:15: Award Ceremony of Outstanding CRC Young Investigator Mentors

19:15-19:45: Reception with beer and wine

### **CRC 1182 Event – only with registration (send mail to [cjaspers@geomar.de](mailto:cjaspers@geomar.de))**

20:00-open end: Networking Metaorganism Party (only for registered people)

# Paul Turner

## Virus and phage biodiversity: Potential in human therapy

Earth's biodiversity is numerically dominated by viruses that infect eukaryotes, and by phages which specifically use bacteria and archaea as hosts. Basic research on this teeming multitude yields new biological insights. In addition, these discoveries suggest that virus and phage biodiversity may be harnessed to solve difficult human problems. For example, the extreme genetic and species diversity of viruses is being used to develop oncolytic virotherapy, where tumor-destroying viruses provide alternative treatments against cancers. Also, the widespread failure of antibiotics predicts that human mortality from multidrug resistant bacterial infections will exceed cancer deaths in the coming decades, suggesting that classic phage therapy approaches should be reconsidered as possible solutions. This seminar concerns recent data on viruses and phages that are potentially useful in human therapy, especially success in bioprospecting for lytic phages that select against virulence and multidrug-resistance in target bacterial pathogens. Such phages bind to virulence-related proteins of bacteria and force evolutionary trade-offs: they kill the target bacteria, while selecting for these pathogens to evolve phage resistance by modifying (or losing) the virulence factor, causing bacterial pathogenicity to decrease, on average. Prime examples are phages that bind to bacterial proteins used in efflux (removal) of antibiotics from the cell; the phages kill susceptible bacterial cells while enriching for bacterial mutants that become re-sensitized to currently-failing antibiotics. Supportive data come from laboratory and animal studies, as well as from human cases where phages are used in emergencies to treat multidrug-resistant bacterial infections.