



ICE 2025 PhD Course

International Chemical Ecology Course

Max Planck Institute for Chemical Ecology, Jena, Germany

June 23 - July 4, 2025

Chemical Ecology

- a multidisciplinary approach -

The course

- focuses on interactions between plants, insects, and microbes, but also delves a little into the chemical communication of vertebrates and even humans
- covers evolutionary processes, physiological and chemical methods, as well as new and upcoming applications

PROGRAM AT A GLANCE

	Monday June 23	Tuesday June 24	Wednesday June 25	Thursday June 26	Friday June 27	Saturday June 28	Sunday June 29
08:30 to 12:00	Registration Introduction/Welcome Tea/Coffee break Institute tour Lunch	Sonja Bisch-Knaden Tea/Coffee break Mohammed Khallaf Lunch	Student presentations (I) Tea/Coffee break Student presentations (II) Lunch	Tom Baker Tea/Coffee break Bill Hansson Lunch	Jin Zhang Tea/Coffee break Astrid Groot Lunch	Excursion	Free
14:00 to 17:30	Markus Knaden Tea/Coffee break Merid Getahun	Robert Hanus Tea/Coffee break Markus Knaden	Poster Session (I) Tea/Coffee break Poster Session (II)	Florian Schiestl Tea/Coffee break Ilona Croy	Paul Becher Tea/Coffee break Jonathan Gershenzon		
17:30 to 18:30	Discussions on lectures	Discussions on lectures	Dinner "Thuringian Evening"	Discussions on lectures	Discussions on lectures		

	Monday June 30	Tuesday July 1	Wednesday July 2	Thursday July 3	Friday July 4		
08:30 to 12:00	Georg Pohnert Tea/Coffee break Martin Kaltenpoth Lunch	Teun Dekker Tea/Coffee break Jared Ali Lunch	Sara Hermann Tea/Coffee break Nicole van Dam Lunch	James Blande Tea/Coffee break Discussion on lecture Lunch	Yuko Ulrich Tea/Coffee break Wrap up and closing		
14:00 to 17:30	Johannes Stökl Tea/Coffee break Franziska Beran	Sarah O'Connor Tea/Coffee break Emmanuelle Jacquin-Joly	Experiments Tea/Coffee break Experiments	Experiments Tea/Coffee break Experiments			
17:30 to 18:30	Discussions on lectures	Discussions on lectures	Discussions on lectures				

DETAILED COURSE PROGRAM

Monday, June 23, 2025

08:00 – 09:30	Registration
09:30 – 10:00	Introduction/Welcome by Markus Knaden
10:00 – 10:30	Tea / Coffee Break
10:30 – 12:00	Institute tour
12:00 – 14:00	Lunch Break
14:00 – 15:30	Insect chemical communication in the Anthropocene <i><u>Markus Knaden</u> (MPI for Chemical Ecology, Germany)</i>
15:30 – 16:00	Tea / Coffee Break
16:00 – 17:30	Application of chemical ecology principles for managing vector borne diseases <i><u>Merid Getahun</u> (International Centre of Insect Physiology and Ecology, Kenya)</i>
17:30 – 18:30	Discussions on lectures

Tuesday, June 24, 2025

08:30 – 10:00	Evolutionary neuroethology in hawkmoths <i><u>Sonja Bisch-Knaden</u> (MPI for Chemical Ecology, Germany)</i>
10:00 – 10:30	Tea / Coffee Break
10:30 – 12:00	An olfactory social language in the naked mole-rat? <i><u>Mohammed A Khallaf</u> (Max Delbrück Center for Molecular Medicine, Germany)</i>
12:00 – 14:00	Lunch Break
14:00 – 15:30	When it's too dark to see: chemical ecology of termites <i><u>Robert Hanus</u> (Academy of Sciences of the Czech Republic)</i>
15:30 – 16:00	Tea / Coffee Break
16:00 – 17:30	Navigation by visual and chemical cues <i><u>Markus Knaden</u> (MPI for Chemical Ecology, Germany)</i>
17:30 – 18:30	Discussions on lectures

Wednesday, June 25, 2025

08:30 – 10:00	Student presentations (Session I)
10:00 – 10:30	Tea / Coffee Break
10:30 – 12:00	Student presentations (Session II)
12:00 – 14:00	Lunch Break
14:00 – 15:30	Posters (Session I)
15:30 – 16:00	Tea / Coffee Break
16:00 – 17:30	Posters (Session II)

Thursday, June 26, 2025

08:30 – 10:00	Early days of insect chemical ecology research: World-wide mission to replace toxic insecticides with behavior-modifying chemicals <i><u>Tom Baker</u> (Penn State University, USA)</i>
10:00 – 10:30	Tea / Coffee Break
10:30 – 12:00	Locust olfactory neurecology <i><u>Bill Hansson</u> (MPI for Chemical Ecology, Germany)</i>
12:00 – 14:00	Lunch Break
14:00 – 15:30	Insect pollination and plant evolution <i><u>Florian Schiestl</u> (University of Zurich, Switzerland)</i>
15:30 – 16:00	Tea / Coffee Break
16:00 – 17:30	You smell great - Deciphering olfactory communication in Humans <i><u>Ilona Croy</u> (Friedrich Schiller University Jena, Germany)</i>
17:30 – 18:30	Discussions on lectures

Friday, June 27, 2025

08:30 – 10:00	Insect chemical ecology in China: Bridging fundamental discoveries and practical applications <i><u>Jin Zhang</u> (Nanjing Agricultural University, China)</i>
10:00 – 10:30	Tea / Coffee Break

- 10:30 – 12:00 The effects of infections on insect chemical communications
Astrid Groot (University of Amsterdam, The Netherlands)
- 12:00 – 14:00 Lunch Break
- 14:00 – 15:30 From fly chemical ecology to pest management
Paul Becher (SLU, Alnarp, Sweden)
- 15:30 – 16:00 Tea / Coffee Break
- 16:00 – 17:30 Biting back: How insect herbivores resist plant chemical defenses
Jonathan Gershenzon (Max Planck Institute for Chemical Ecology, Germany)
- 17:30 – 18:30 Discussions on lectures

Saturday, June 28, 2025

EXCURSION

Sunday, June 29, 2025

FREE

Monday, June 30, 2025

- 08:30 – 10:00 Mass spectrometry-based metabolomics in chemical ecology
Georg Pohnert (Friedrich Schiller University Jena, Germany)
- 10:00 – 10:30 Tea / Coffee Break
- 10:30 – 12:00 An inordinate fondness for symbionts: mutualist-provided defense, digestion, and desiccation tolerance in beetles
Martin Kaltenpoth (Max Planck Institute for Chemical Ecology, Germany)
- 12:00 – 14:00 Lunch Break
- 14:00 – 15:30 The evolution of chemical communication in deceptive flowers, beetles, and parasitic wasps
Johannes Stökl (University of Bayreuth, Germany)
- 15:30 – 16:00 Tea / Coffee Break

- 16:00 – 17:30 Eating plants for defense: chemical ecology and mechanisms of sequestration in insects
Franziska Beran (*The Leibniz Institute of Vegetable and Ornamental Crops, Germany*)
- 17:30 – 18:30 Discussions on lectures

Tuesday, July 1, 2025

- 08:30 – 10:00 tba
Teun Dekker (*SLU, Alnarp, Sweden*)
- 10:00 – 10:30 Tea / Coffee Break
- 10:30 – 12:00 Behaviour and chemical ecology of above-below ground multi-trophic interactions
Jared Gregory Ali (*Penn State University, USA*)
- 12:00 – 14:00 Lunch Break
- 14:00 – 15:30 Basic organic chemistry for chemical ecology
Sarah O'Connor (*Max Planck Institute for Chemical Ecology, Germany*)
- 15:30 – 16:00 Tea / Coffee Break
- 16:00 – 17:30 Insect odorant receptors: functional studies and targets for pest control
Emmanuelle Jacquin-Joly (*INRAE, France*)
- 17:30 – 18:30 Discussions on lectures

Wednesday, July 2, 2025

- 08:30 – 10:00 Unraveling the role of predation risk and predator chemical cues in Arthropod ecology
Sara Hermann (*Penn State University, USA*)
- 10:00 – 10:30 Tea / Coffee Break
- 10:30 – 12:00 Let's spice it up! Applying chemical ecology for sustainable vegetable production
Nicole van Dam (*The Leibniz Institute of Vegetable and Ornamental Crops, Germany*)
- 12:00 – 14:00 Lunch Break
- 14:00 – 15:30 Experiments
- 15:30 – 16:00 Tea / Coffee Break
- 16:00 – 17:30 Experiments
- 17:30 – 18:30 Discussions on lectures

Thursday, July 3, 2025

08:30 – 10:00	Environmental impacts on volatile-mediated interactions <i><u>James Blande</u> (University of Eastern Finland)</i>
10:00 – 10:30	Tea / Coffee Break
10:30 – 12:00	Discussion on lecture
12:00 – 14:00	Lunch Break
14:00 – 15:30	Experiments
15:30 – 16:00	Tea / Coffee Break
16:00 – 17:30	Experiments

Friday, July 4, 2025

08:30 – 10:00	Chemical communication in social insects <i><u>Yuko Ulrich</u> (Max Planck Institute for Chemical Ecology, Germany)</i>
10:00 – 10:30	Tea / Coffee Break
10:30 – 12:30	Wrap up and closing remarks