Announcement for a mutagenisation workshop on the toxigenic cyanobacterium *Planktothrix*
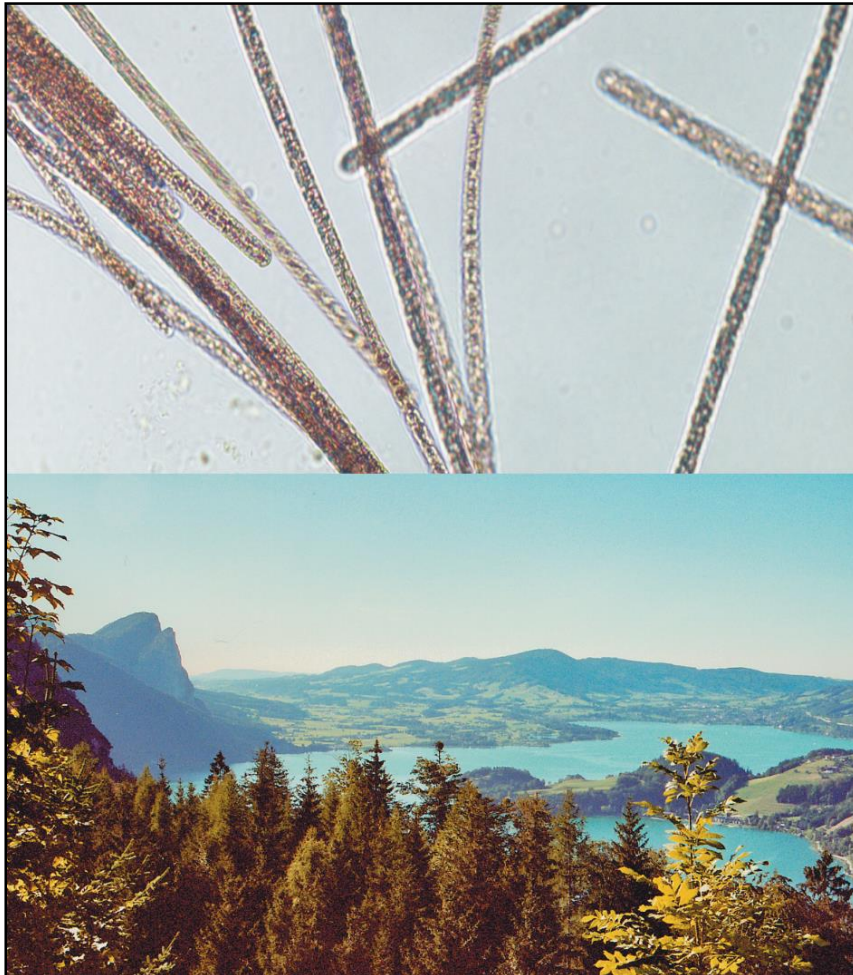
Organized by Rainer Kurmayer & Guntram Christiansen

Time:

June 13 – 17, 2016 (arrival June, 12th, departure June, 18th)

Location: Research Institute for Limnology, University of Innsbruck, Mondseestraße 9, 5310 Mondsee, AUSTRIA/EUROPE

Background:

Genetic manipulation techniques are fundamental to our understanding of the biology of cellular processes. While several cyanobacteria are amenable to genetic manipulation, genera with an interesting secondary metabolism in general are more difficult to manipulate.

In that respect the toxin-producing freshwater cyanobacterium *Planktothrix* spp. is an exception as particular strains have been repeatedly genetically manipulated and genes involved in secondary metabolism such as microcystin, aeruginoside, microviridin synthesis could be inactivated by insertional mutagenesis.

The first workshop held in July 2011 was well received by the scientific community with participants from Australia, Italy, Czech Republic, Finland, France, Portugal, USA and Switzerland. In the meantime new inquiries concerning mutants emerged.

Therefore we propose a course of lab training on our mutagenesis protocol to manipulate strains of *Planktothrix agardhii* and *Planktothrix rubescens*.

It is planned that max. **10 participants** will be trained in the preparation of constructs for homologous recombination and subsequent transformation protocols. Since the growth of the mutants will take time (12 weeks), participants will be informed about the success of their mutagenisation experiments via posting photographs on the growth of the mutants on a website. The course language will be English.

The course will include a practical guide to the construction of vectors for homologous recombination, and their preparation and subsequent *Planktothrix* mutagenesis (5 days). This course is intended for participants with little experience in molecular biology.

Please send your filled **application form** (see own form) including your research field and your previous experience in molecular biological techniques to rainer.kurmayer@uibk.ac.at . **Deadline for registration is 30th of April 2016.** If the number of participants is more than ten, the applications will be considered on a first come, first serve basis in addition to the level of expertise in molecular biological techniques. All applicants will be informed on the **decision** of their participation on **6th May 2016.** The course will be cancelled if there are fewer than three participants.

Registration fees:

Registration fee: EUR 550.-
Reduced registration for **students** EUR 450.-
please note: for reduced fees we require a copy of your student ID card with expiry date and a confirmation of your supervisor.

As soon as you will be informed on your approval for participation, please transfer the adequate course fee to the project account within one week. Please take care to pay all fees including bank charges from abroad and send us your personal data for the participants list.

If we do not receive your **payment on our account until May 31st, 2016** we will invite the next applicant on the waiting list.

Account details:
Bank name: Hypo Tirol Bank, address: Meraner Str. 8, 6020 Innsbruck, Austria

IBAN: AT47 5700 0210 1113 0470

BIC/SWIFT: HYPTAT22XXX,

Payment Reference/Purpose: P7470-013-015

(Note: The purpose No. is essential to locate and assign the payment).

Tentative Agenda:

Daily schedule: 09:00am – approx. 18:00pm

Mon, June 13th	Lecture: Introduction into the construction of vectors for homologous recombination (**G. Christiansen**) PCR amplification of the gene of interest from *Planktothrix* genomic DNA, Bench work: Ligation of amplicons into cloning vector, transformation of *E. coli* host
Tue, June 14th	Bench work: Colony PCR with transformed *E. coli*, overnight culturing of positive clones
	Lecture: Introduction to genetic manipulation techniques in cyanobacteria (**G. Christiansen**) Lecture: Introduction to the genus *Planktothrix*: Morphology, Phylogeny, Ecophysiology, Ecology and distribution (**R. Kurmayer**)
Wed, June 15th	Bench work: Plasmid mini preparation, restriction and ligation of the resistance marker gene into the linearized plasmid, transformation of *E. coli* host
Thur, June 16th	Bench work: Colony PCR with transformed *E. coli*, overnight culturing of positive clones
	Lecture: Electroporation for introducing foreign DNA and cultivation of mutants (**G. Christiansen**) Lecture: Toxin production in *Planktothrix*, genetic basis and evolution of toxin synthesis genes (**R. Kurmayer**)
Fri, June 17th	Bench work: Plasmid mini preparation of the constructs and delivery into *Planktothrix* by electroporation, Preparation for sequencing
optional	
Sun, June 19th	Bench work: Addition of antibiotics and starting the selection phase

Participants may bring laptop computers. If you are staff member or student at a university, you may use EDUROAM and your own internet university login data for WIFI/WLAN internet access in the whole building. Please bring your lab coat.

Travel to Mondsee:
by air:

Munich airport – GERMANY
take the train from Munich Airport to „München Ostbahnhof", (S-Bahn direction Herrsching), then take the train to Salzburg „Hauptbahnhof", 2.5 h, then take bus No 140 from "Salzburg" in front of railway station to Mondsee (bust stop is directly in front of the institute building "destination, "Mondsee Leitnerbräukeller")
http://www.postbus.at/en/index.jsp

Vienna airport – AUSTRIA
train to Salzburg „Hauptbahnhof", 3.5 h then take bus No 140 from "Salzburg" in front of railway station to Mondsee (see above)

Salzburg Airport – AUSTRIA

take bus No 2 from "Airport Center" to Salzburg railway station ("Hauptbahnhof"), 20 min, then take bus No 140 from "Salzburg" in front of railway station to Mondsee (see above)

by train:

via Salzburg
Salzburg railway station → take bus No 140 from "Salzburg" in front of railway station to Mondsee (see above)

by car:

Highway A1 Vienna-Salzburg, Exit Mondsee, direction "St.Gilgen, Wolfgangsee" to Mondsee (see https://www.uibk.ac.at/limno/location/)

Accommodation:

We propose accommodation at the institute, EUR 30.- per day for Postdocs, EUR 10.- per day for students, https://www.uibk.ac.at/limno/rooms/index.html.en

There are also relatively cheap hotels nearby in walking distance:

1) Pension Klimesch, Meinrad Guggenbichler-Str. 13, 5310 Mondsee, phone 0043-6232/2563 (http://www.oberoesterreich.at/klimesch.mondsee),

2) Pension Hemetsberger, Seebadstraße 1, 5310 Mondsee, phone 0043-6232/4934 (http://www.seepension.at/en) ,

3) Pension Herned, Hernedstraße 22, 5310 Mondsee, phone 0043-6232/2171 (http://www.pensionherned.at),

4) Gasthof Grüner Baum, Herzog Odilostraße 39, 5310 Mondsee, phone 0043-6232/2314 (www.gruenerbaum-mondsee.at),

5) Hotel Stabauer, Salzburgerstraße 2, 5310 Mondsee, phone 0043-6232/2285 (http://www.mondseeland.org/hotelstabauer.html),

6) Hotel Krone, Rainerstraße 1, 5310 Mondsee, phone 0043-6232/2236 (http://www.booking.com/hotel/at/krone-mondsee.en.html)

7) Seegasthof & Segelschule Weiße Taube, Schwarzindien 59, 5310 Mondsee, phone 0043-6232/2270, (http://www.mondseeland-info.com/weisse_taube_mondsee.html)

For general information:

Tourist Information Mondseeland, Dr. Franz Müller-Straße 3, 5310 Mondsee, phone 0043-6232/2270 (http://www.mondsee.at/en), online booking available.

Climate:

In June Mondsee will be relatively warm and sunny with an average temperature of 20-25 °C. Swimming in Mondsee is possible at that time. It might also be the case that we get a lot of rain, so please do not forget to bring along some rain protection with you.
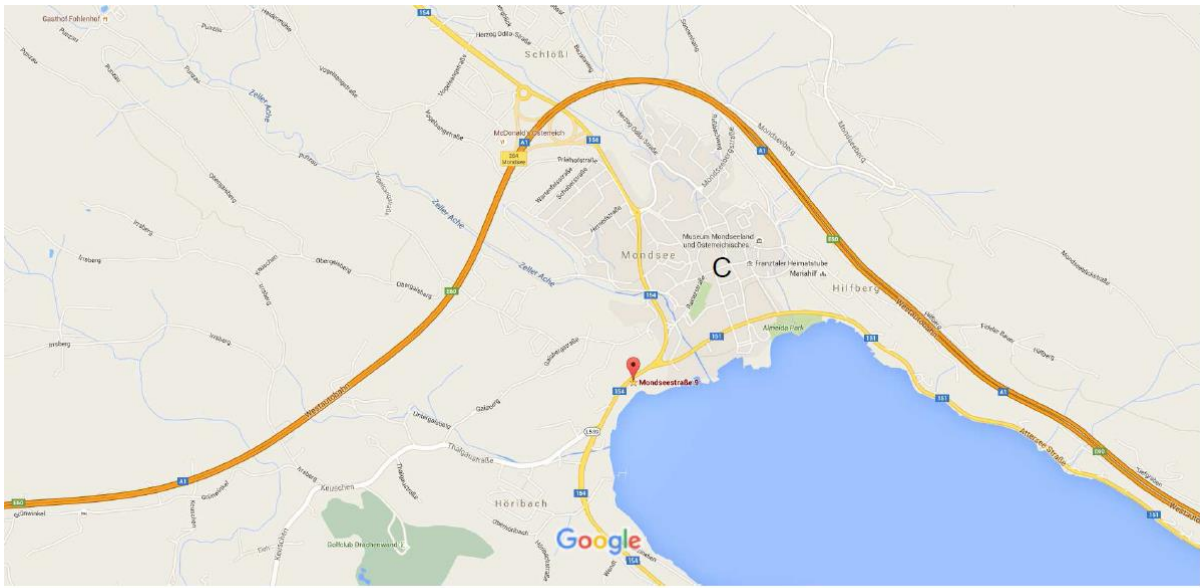
Above: map of Mondsee with the location of the Institute building (red mark) and the center of Mondsee (C).

Below: location of Mondsee next to the city of Salzburg