

5th Annual Loma Linda Workshop on Algorithms for Particle Imaging and Radiation Treatment Planning

Information for Participants

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General Information

We (Yair and Reinhard, and now also Keith) have been organizing a yearly workshop at Loma Linda University, California, USA centered on topics related to algorithms for and optimization of **particle imaging** and **intensity-modulated proton therapy**. This year's workshop will take place **July 22-24** (as always, right after the AAPM conference). For information about past annual Loma Linda workshops see:

<http://ionimaging.org/ws2018-lomalinda/>.

The summer workshops at Loma Linda University are intentionally organized in an informal setting: this is a dynamic workshop and not a conference that is planned in all detail with assigned sessions and speakers, etc. Students and faculty alike present their recent work and ideas; often decisions about talks are made last minute and added to the program. This year's edition will repeat this format, but you will also notice a **gradual change towards a widened scope** because eventually, we would like to include **all modalities of radiation therapy** (not just protons and ions). The workshop intends to create an as large as possible overlap between different topics and different disciplines (mathematics, computer science, radiation therapy) that will enable us to work intensively together, exchange information and ideas, and finalize and/or start new projects. Ongoing projects are often discussed during the pre-workshop on the Friday before the workshop. If you are around, let us know and feel free to attend.

Important Phone Numbers

If you stay in one of LLU's sponsored apartments, studios, condos, etc., there is no need to dial +1 and area code (909) when you are calling Loma Linda numbers, e.g., those of other attendees. A list of local phone numbers will be published soon in the attendee list (an Excel file). Here is a list of phones if you need help: **Reinhard's contact phones:** +1 (909) 213-2518 (mobile), +1 (909) 825-4503 (home), again no need for +1 and (909) if you dial from your local phone.

Security Control Center: + 1 (909) 558-4320, call for non-emergent questions (e.g., locked out of your apartment, etc.), or you notice something strange. They will be friendly.

Ms. Doris Segovia, Rental Office: +1 (909) 558-4374, only Monday – Thursday 7:30am--4:30pm, Friday 7:30am – 1:30pm.

In case of any medical or non-medical EMERGENCY: Dial 911 from any phone

How do I find my way?

Loma Linda is a small city and the Medical Center and University are right in its center. The new hospital is easily seen from almost everywhere in town and will guide you to the meeting. Loma Linda is otherwise residential area and local hills, but it will be hot except for early mornings and late evenings. You will find a not-to-scale campus map at the end of this document, which will show you all relevant places, such as bank, parking, our meeting place, Reinhard's office, etc. We will also email a pdf. If you need to go shopping, we suggest you walk or take the 19 bus to the corner of Barton Road and Mountain View Street to the east from LLU. The local bus stops are on Campus Street (next to P1 Parking) and at the intersection of Barton Road and Anderson.

Where can I park?

If you come by car, there is FREE parking available in the **X-lot** going North on Campus and in the **P3** Patient and Visitor parking structure going South on Campus. Refer to the map for details. If you like walking a bit (10 min), take the **X** Lot, otherwise take **P3**, which is only a few steps away from the meeting place in Wong Kerlee.

How do I get the key to my LLU assigned place?

Some of you rented an apartment, condo, or studio from **Ms. Doris Segovia, in the LLU Rental Office**. They will have received an email on how to get their keys. Note that Doris is only there during the times listed above. You should have received instructions on where to get your keys after hours. Some of you are sharing an apartment but arrive at different times. We suggest you coordinate among each other to make sure you get in. Call me if you are having trouble to get in or to find your roommate.

How do I pay for my assigned place?

Those of you who are renting a university apartment and agreed to cover the rent **please see Doris in the LLU Rental Office 24873 Taylor Street** and pay your rent by **personal check, cash, or money order (no credit cards!)** There is a Bank of America branch at the corner of Prospect and Anderson (see map), where you can draw cash from the ATM or buy a money order. Note that you should only pay for the nights you stayed. Doris will let you know how much you owe.

Where and when do we meet the first time?

For those that are here on Monday July 22 (most of you) we will meet at 7:30am in front of Reinhard's office in Mortensen Hall, 2nd floor (one flight of stairs up and to the left) or at 7:45 am in front of the Wong Kerlee International Conference Center (uphill from the Good Samaritan Statue). If you are late or want to skip the Educational Session from 8-9, just get inside the conference center, go one level down and find the Shearer/Heidar Room. There is no registration desk. For those that will arrive earlier, i.e., Thursday or Friday July 19 for pre-workshop activities, we will send you individual emails.

When will I give my talk(s)

Many of you have already indicated they would like to give one or more talks. Other talks will be assigned to attendees via conferencing with Zoom. There is no requirement to give a talk. The program is thematically organized as you can see below. Feel free to ask me to give a presentation (not more than 40 minutes) in one of those time slots. We hope not to run out of time, this has worked well in the past annual Loma Linda workshops. We will make talks that can be shared available on the workshop website later. If you still haven't announced your talk please contact Reinhard at rschulte@llu.edu before the workshop.

Can I visit the Loma Linda Proton Treatment Center?

We hope that, as in previous years, there will be a guided proton center tour. The exact day and time (typically during a lunch break or after 5pm) will be announced during the workshop.

Will there be refreshments and coffee?

Yes, there will be a coffee maker (volunteers needed to prepare the brew) and refreshments will be served at the beginning of the morning and afternoon sessions. Paper cups will be provided but feel free to save the environment and bring your own ceramic mug or get one from the LLU Patio Store or the Gift Shop in the Medical Center. There will be a drinking water dispenser near the meeting room (we will show you). You will need the water if you walk through the heat.

What about lunch?

We will offer a free **group lunch in the faculty dining area** from 12 noon – 1pm every day. You will need to walk within our group because you will need to pay if you come as an individual (credit cards are accepted). The food in the faculty dining room is **vegetarian only** but is very tasty. If you long for non-vegetarian food, you can go to Café Society on University Avenue within walking distance.

Where can I buy food, water, and other supplies for the weekend and evenings?

You will find the Loma Linda Food Market behind the Bank of America between Prospect Street and Mound Street. They are open until 7 pm every night except on Saturdays. They only have healthy stuff, no coffee, no alcohol, no cigarettes. If you long for unhealthy things, take the 19 bus east to Stater Brothers in Loma Linda (3 or 4 bus stops, or 10 min bus ride away).

Workshop Dinner and Hangout

Loma Linda is a quiet town without much entertainment. We will have a workshop dinner **Monday night at Dhat Island, State Street, Redlands from 8pm – 10pm** <https://goo.gl/maps/xcrp5qJUHrg1zxYQ6> and a fun hangout at **Taylor's Bar & Grill, Barton Road**, <https://goo.gl/maps/PYP8zLwnZmrFwn3v6> also in Redlands on Tuesday around the same time. You can take the 19 bus both ways or take an Uber or a regular taxi. **Please do not drink and drive.**

What else can I do for fun & fitness during the workshop and beyond?

The LLU Drayson Center offers day and week passes for using their fitness facilities and outdoor pool. Visit their website at <https://drayson.llu.edu/> or walk by in person (see map).

Other than that, there is much to do and to see in the area and beyond (Los Angeles, Palm Springs, San Diego, Pacific Beaches, and Theme Parks, hiking in the local mountains, Carbazon Outlet Stores, and large shopping malls).

Pre-workshop and Weekend Fun Trips

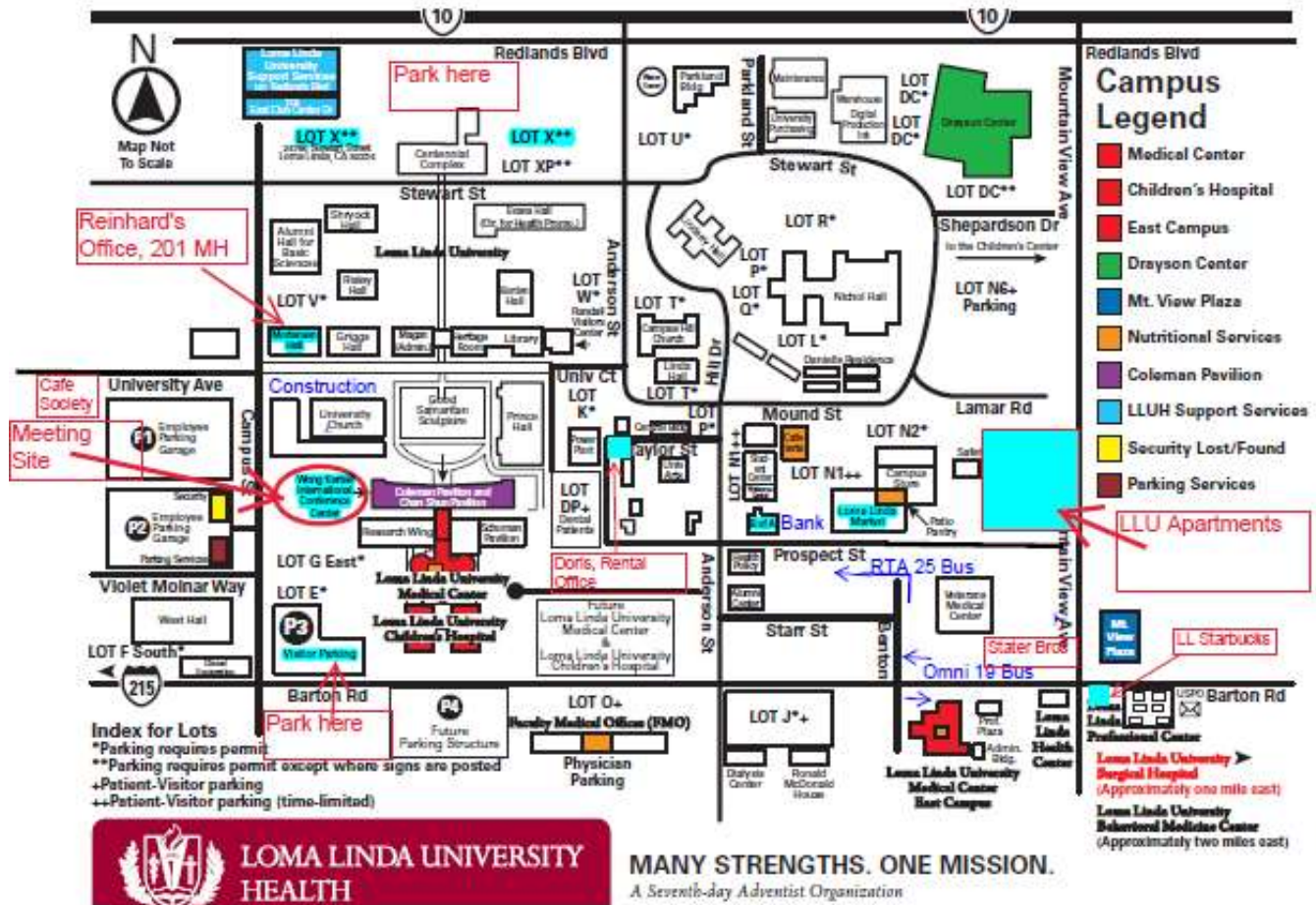
For those who will arrive early (Thursday July 18 or Friday July 19 morning), we will have meetings on Friday morning from 10-12am and afternoon from 1-3pm to discuss projects. Reinhard will ask his summer students to join. In the evening of Friday (if the weather is clear), we are planning a trip to Joshua Tree National Park to watch the desert night sky (which is impressive). Joshua Tree National Park has an entrance fee and the current rate of \$25 per vehicle. We will go with one or two cars as needed (to be decided on Friday afternoon). Please plan to bring a 5-dollar bill to share the fee per vehicle. We will go through the West Entrance and drive for about 10 miles into the park. We are planning to leave for the trip around 7pm from the parking lot of the Loma Linda Food Market (see map).

On Saturday July 20, for those who are around and interested (Reinhard will be in San Francisco), we are planning a trip to the Birch Aquarium at Scripps Oceanography Institute in La Jolla <https://aquarium.ucsd.edu/>. This will be a day trip and Dr. Antoni Rucinski (workshop attendee) will be in the lead for this trip. We will agree on the number of cars that we need on Friday and will meet at the Loma Linda Food Market again at 9am, Saturday morning. The Aquarium tickets are \$19.50 for adults and \$16.50 for seniors and students (bring your ID).

Which topics will be presented

The following agenda only lists the time slots for the different topics covered by this workshop. They will be filled with individual talks delivered by those who want to contribute their talks and have them discussed by all others either in person or on Zoom. This will contribute to a relaxed workshop environment.

5th Annual LLU Workshop Topics Agenda- July 22-24, 2019			
Time	Monday, July 22	Tuesday, July 23	Wednesday July 24
8:00	Educational Lecture (PCA), Keith Schubert	Educational Lecture (ICA), Keith Schubert	Educational Lecture (TPC & NTCP Models), Elisabetta Gargioni
9:00	Imaging (I)	Imaging (V)	Treatment Planning (I)
10:00	Coffee Break	Coffee Break	Coffee Break
	Imaging (II)	Imaging (VI)	Treatment Planning (V)
11:00	Imaging (III)	Imaging (VI)	Treatment Planning (VI)
12:00	Lunch Break	Lunch Break	Lunch Break
13:00			
14:00	Imaging (IV)	Treatment Planning (II)	Radiation Chemistry
15:00	Coffee Break	Coffee Break	Coffee Break
	Mathematics or Computer Science Topics (I)	Mathematics or Computer Science Topics (II)	Mathematics or Computer Science Topics (III)
16:00	Treatment Planning and Optimization (I)	Treatment Planning (IV)	Special Topic
17:00	Free	Proton Tour	Adjourn
19:00	Dinner in Redlands	Fun night out	Free



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Workshop organizers.
 July 16, 2019.