

# 2015 Summer Research Institute on Algebraic Geometry

## *Participant Information and Tentative Program*

University of Utah  
Salt Lake City, UT  
July 13-31, 2015

*Registration, Housing, and Logistics for this conference are being handled by the Meetings & Conferences Department of the American Mathematical Society (AMS). All requests for registration and housing are processed by the Mathematics Meetings Service Bureau (MMSB) of this department.*

### **Important Email Addresses and Websites**

- Organizers' Webpage: <https://sites.google.com/site/2015summerinstitute/>
- Organizing Committee: algebraic.geometry.2015@gmail.com
- Registration and Housing Questions: [mmsb@ams.org](mailto:mmsb@ams.org)
- Registration and Housing Information: <http://www.ams.org/meetings/amsconf/summerinst15-info>
- Conference Coordinator: [meet@ams.org](mailto:meet@ams.org)

### **Important Deadlines**

- Registrations Submitted to the MMSB (online only): **June 15, 2015** (all weeks)
- Deadline for Housing through the MMSB: **June 2, 2015** (all weeks)

### **Important Phone Numbers**

- AMS Conference Office (7/13 - 8/31): TBA
- AMS Headquarters Office: (800) 321-4267
- Summer Conference Guest Services Desk: (801) 587-0458
- University Guest House: (801) 587-1000
- Peterson Heritage Center: (801) 587-2000
- Campus Information: (801) 581-7200
- Campus Police / Public Safety: (801) 585-COPS
- Other Emergency: 911

\*When calling from a campus line, dial only the last 5 digits of the phone number.

### **AMS Conference Office**

AMS Conference Office will be located in the Ensign Boardroom (University Guest House – conference level). The office hours currently are: Sunday: 5:00 p.m. to 9:00 p.m.; Monday-Friday: 8:00 a.m. - noon and 1:00 p.m. - 5:00 p.m. Hours are subject to change based on program needs.

### **Registration**

**Registration Fees:** Registration opens on **April 2, 2015**. All participants including speakers and committee members, are required to pay a weekly registration fee. Registrations fees are as follows: US\$30 for students and young PhDs (PhD after January 1, 2010) and US\$60 for general participants. Registration fees cover items not covered under the grant. Only advanced online registration is available for this conference; on-site registration will not be offered. **Participants who reserve rooms at the University Guest House or in the residence halls are required to pay the full amount when they register.**

**Registration Materials:** Participants will be able to pick up their registration materials at the AMS Conference Office, located in the Ensign Boardroom. Office hours are listed above.

**Registration Changes/Cancellations:** All changes and cancellations to registrations must be made through the MMSB.

**Registration Cancellation Refund Policy:** A full refund will be issued for any registration cancelled by the final registration deadline of **June 15** (for all weeks). After **June 15**, a refund less 50% of the registration fee will be issued for any registration cancelled through **July 13** (for all weeks). No refunds will be issued for registrations cancelled after **July 13**.

### **On-Campus Accommodations**

**Residence Halls:** Participants who request residence hall accommodations will be housed in dormitories on the University of Utah campus. The rooms are suite-style rooms where a bedroom and a bathroom will be shared. Each person is reserving one bed for one person, and will be paired with roommates within his or her gender. Participants may request a roommate or suitemate, and best efforts will be made to accommodate those requests. A maximum of four people can share a suite.

Participants residing in the residence halls are required to purchase a meal plan for each day of their stay. A meal plan for one day includes breakfast, lunch and dinner on the next day.

The total cost of a room in the residence hall for Sunday through Thursday is US\$48.15 per day, which includes one bed, 3 meals, plus taxes. The total cost of a room in the residence hall for Friday and Saturday is US\$29.28 per day, which includes one bed plus taxes. Meal plans cannot be offered for the weekend and participants will be on their own for meals.

Each participant is provided with a pillow, bed linen and a small towel at check-in. The bed linen packet includes two flat sheets and a light blanket. However, it is recommended that guests bring their own large towels, washcloths, and hairdryers. The check-in desk is located in the Peterson Heritage Center (PHC), desk just inside the door.

Laundry facilities are located in every residence hall building. Laundry is free on every floor. It is recommended that participants bring their own laundry detergent. However, there is a small convenience store inside the Heritage Center that has a limited stock of sundries for purchase.

If a guest is locked out of their room between 6:00 a.m. and 12:00 a.m., he or she should go to the Summer Conferences Guest Services Desk. An employee will issue a one-hour lock out key and/or swipe card to access to the room. This room key or swipe card should be returned within the hour. A

lock change will be issued if the key/swipe card is not returned. The Summer Conference Guest Services Desk should be called at (801) 597-0458 for further questions.

If a participant is locked out between the hours of 12:00 a.m. – 6:00 a.m., he or she should call (801) 587-0458 or go to the University Guest House front desk for assistance. Staff should be allowed thirty minutes after initial notification to arrive.

**If a key is permanently lost, a charge of US\$100 will be assessed for the lock change. If a swipe card is lost, a charge of US\$10 will be assessed for the card replacement.**

**University Guest House:** The University Guest House is an on-campus hotel that offers single and double rooms only. **The availability of rooms in this facility is extremely limited for this conference.** Room types are as follows:

- Single-king room which includes a king bed, a refrigerator, a microwave, complimentary Wi-Fi, a television, a hair dryer, an iron & ironing board, and a coffee maker
- Double-queen room which includes two queen beds, a refrigerator, a microwave, complimentary Wi-Fi, a television, a hair dryer, an iron & ironing board, and a coffee maker
- King-deluxe room which includes a king bed, a small sitting area with a loveseat, a refrigerator, a microwave, complimentary Wi-Fi, a television, a hair dryer, an iron and ironing board, and a coffee maker

Breakfast on the following day is included in the rates (see below). Participants residing in the Guest House are required to purchase a meal plan for each day of their stay. The meal plan for one day includes lunch and dinner on the following day.

The total cost of a room in the Guest House for Sunday through Thursday is US\$138.42 per day, which includes the room, breakfast (included in rate), meal plan consisting of lunch and dinner, plus taxes. The total cost of a room in the Guest House for Friday and Saturday is US\$123.86 per day, which includes breakfast plus taxes. Meal plans cannot be offered for the weekend and participants will be on their own for additional meals.

**Housing Changes/Cancellations:** All changes and cancellations for reservations must be done through the MMSB.

**Housing Cancellation Refund Policy for Guest House:** A full refund will be issued for any reservation cancelled up to 48 hours before the check-in date. A refund less the cost of one night of the package rate will be issued for any reservation cancelled less than 48 hours before and up to the check-in date. No refunds can be issued for reservations cancelled on or after the check-in dates or for any no-shows during the conference.

**Housing Cancellation Refund Policy for Residence Halls:** A full refund will be issued for any reservation cancelled up to three weeks before the first day of each week. This breaks down as follows for the duration of stays listed:

Week 1 (only) – **June 19**; Week 2 (only) – **June 26**; Week 3 (only) – **July 3**; Weeks 1-3 – **June 19**;  
Weeks 1-2 – **June 19**; Weeks 2-3 – **June 26**

No refunds can be issued for reservations cancelled after those dates or for any no-shows during the conference can be issued.

### **Off-Campus Accommodations**

Participants who choose to stay off campus must make their own arrangements directly with the hotel of their choice. For convenience, special discounted rates were negotiated with the hotels listed below. Rates below are subject to local sales and occupancy taxes. (12.6%) All reservations must be guaranteed and accompanied by a first night room deposit or guaranteed with a major credit card. Participants must state that they are with the American Mathematical Society's (AMS) Summer Institute at the University of Utah. The AMS is not responsible for any rate changes or for the quality of any accommodations. Hotels have varying cancellation policies and penalties for early check-outs, so be sure to ask for details.

**Salt Lake City Marriott University Park** (1/3 mile from campus), 480 Wakara Way, Salt Lake City, UT 84108, (801) 581-1000, toll free (800) 228-9290; [www.saltlakecitymarriott.com](http://www.saltlakecitymarriott.com). Rates are US\$119 plus 12.6% tax per night for single/double occupancy and **they apply to rooms starting on July 7, 2015 through July 31, 2015**. Amenities include complimentary on-site parking, coffee/tea in-room, and newspapers delivered to rooms daily upon request. Safe deposit boxes are available at the front desk and wireless internet is available in guest rooms for a fee of US\$13.95 per day. This hotel is conveniently located on Salt Lake City's light rail system which provides easy access to the University of Utah. For more information, visit the UTA TRAX website at <http://www.rideuta.com/mc/?page=UTA-Home-TRAX>. The deadline for reservations is **June 22, 2015**.

**Holiday Inn Express Salt Lake City** (downtown Salt Lake City), 206 South West Temple, Salt Lake City, UT 84101, (801) 521-9500; [www.holidayinnexpresssaltlakecity.com](http://www.holidayinnexpresssaltlakecity.com). Rates are US\$119 plus 12.5% tax per night for single/double occupancy and **they apply to rooms starting on July 26, 2015 through July 31, 2015 (only)**. Amenities include a complimentary Express Start Breakfast each day, complimentary airport shuttle (reservations needed), and complimentary wireless internet in all guest rooms. Parking is US\$5 per day. This hotel is conveniently located on the Salt Lake City's light rail system which provides easy access to the University of Utah. For more information, visit the UTA TRAX website at <http://www.rideuta.com/mc/?page=UTA-Home-TRAX>. The deadline for reservations is **July 10, 2015**.

**Hilton Salt Lake City Center** (downtown Salt Lake City), 255 South West Temple, Salt Lake City, UT 84101, (800) HILTONS; <http://www3.hilton.com/en/hotels/utah/hilton-salt-lake-city-center-SLCCCHH/index.html>. Rates are US\$129 plus 12.6% tax per night for single/double occupancy and **they apply to rooms starting on July 26, 2015 through July 31, 2015 (only)**. Participants should request the group rate for the 2015 Algebraic Geometry Summer Research Institute. Amenities include air conditioning, an alarm clock, a hair dryer, a coffee/tea maker, an iron and ironing board, and a laptop-sized safe. Parking is US\$15 per day for self-parking and US\$18 per day for valet parking. This hotel is conveniently located on the Salt Lake City's light rail system which provides easy access to the University of Utah. For more information, visit the UTA TRAX website at <http://www.rideuta.com/mc/?page=UTA-Home-TRAX>. The deadline for reservations is **June 26, 2015**.

**Salt Lake Plaza Hotel** (downtown Salt Lake City), 122 West South Temple, Salt Lake City, UT 84101, (801) 521-0130 or (800) 366-3684; <http://www.plaza-hotel.com/>. Rates are US\$122 plus 12.6% tax per night for single/double occupancy and **they apply to rooms from July 12, 2015 through July 17, 2015 (only)**. Participants should request the group rate for the AMS Summer Institute. Amenities include free wireless hi-speed internet, microwave and refrigerator in each room, complimentary in-room coffee, and free airport shuttle. Parking is US\$5 per day for self-parking. This hotel is conveniently located on the Salt Lake City's light rail system which provides easy access to the University of Utah. For more information, visit the UTA TRAX website at <http://www.rideuta.com/mc/?page=UTA-Home-TRAX>. **The deadline for reservations is May 22, 2015.**

### **Meal Plans**

Participants who stay on campus in the University Guest House or in the residence halls have a meal plans included in their rates. (See On-Campus Accommodations section above.) Participants staying off campus can purchase either meal plans when they register or individual meals on-site on a cash or credit card basis. Meals can only be purchased at the PHC.

Hours of Operation:

Breakfast - 6:30 a.m. –9:00 a.m. (estimated cost - *tba*)

Lunch – 11:00 a.m. – 2:00 p.m. (estimated cost - *tba*)

Dinner - 4:30 p.m. –7:30 p.m. (estimated cost - *tba*)

Meal plans cannot be purchased on-site.

Participants staying in residence halls will have their meal plans programmed into their room keys. Participants staying in the University Guest House will receive a meal plan card when they check. Participants who are staying off campus and who purchased a meal plan during registration can pick up their meal plan cards in the AMS Conference Office.

**Non-Resident Meal Plan Changes/Cancellations:** All changes and cancellations to non-resident meal plans must be made through the MMSB.

**Non-Resident Meal Plan Cancellation Refund Policy:** A full refund will be issued for any meal plan cancelled 48 hours before the first day the meal plan starts. A refund less the cost of one full day of a meal plan will be issued for a meal plan cancelled 48 hours before it starts and up the day it starts. No refunds will be issued for meal plans cancelled on or after the first day that they start or for any no-shows during the conference.

### **General Campus Information**

**Accessibility:** The University of Utah provides equal access to its facilities for all participants. Participants with special needs should indicate this on the online conference registration and housing form. Once their registration and housing forms have been processed, an AMS representative will contact them about any specific needs they may have. For more information about the University of Utah's ADA accessibility, please visit <http://www.oeo.utah.edu/access/>.

**ATM:** There is an ATM available for use located in the PHC, situated between the front desk and mailroom window. A fee may be associated by the vendor if it is not an affiliated bank.

**Childcare:** Please note that participants are responsible for arranging child care and family care on their own. The AMS does not make recommendations for child care providers. The following are listed for your convenience in finding a sitter, temporary nanny, or drop-in day care. The zip codes closest to the University of Utah and downtown Salt Lake City are 84101, 84103, 84111, 84112, and 84116.

- Care about Childcare <<http://careaboutchildcare.utah.gov/parent/> > or (801) 355-4847.
- Sitter City <<https://www.sittercity.com>>
- Care.com <<https://www.care.com>>

**Internet:** Both Ethernet and wireless internet are available in the residence halls. An Ethernet port is available in every bedroom in the residence hall buildings. Guests may access the internet via the Ethernet with an Ethernet cord and are responsible for bringing their own cords. Ethernet cords are not provided. Wireless internet is available in most residence hall buildings, but cannot be guaranteed. Guests can access the wireless internet using “UGuest” with a valid e-mail address. For any additional information regarding with internet, please call the Summer Conferences Guest Services Desk, located in the PHC, at (801) 587-0458.

**Recreation:** Campus recreation facilities have numerous courts and equipment for use or rent at a small fee. For more information, please contact the facility directly at the following numbers:

Campus Recreation: (801) 581-3797

Outdoor Campus Recreation: (801) 581-8516

Volleyball and basketball courts are located by the outdoor recreation building near Heritage Commons. These courts cannot be reserved and use is based on a first come, first served basis.

**Smoking and Alcohol Use:** Alcohol and illegal drugs are not allowed anywhere on the University of Utah campus. According to Utah law, smoking is not allowed inside any building. Smoking is only permitted 25 feet or more away from any part of a building. There are also designated smoking areas on campus. Violation of these policies will result in fines, legal actions, and/or immediate eviction.

**Television and Cable:** Cable is available throughout the residence halls. Televisions and coaxial cables are not available through Summer Conferences. If a guest has a cable-ready television, they will only need to hook a coaxial cable to get cable. To access, plug the coaxial cable into both the television and the wall jack. Note that televisions are not provided in rooms in the residence halls.

**Visitors:** Visitors are allowed in the residence halls. Guests are responsible for their visitors’ actions while at the University of Utah. Visitors must be escorted at all times throughout their visit to the residence halls. As a safety precaution, please do not allow other individuals into the residence hall building when entering. **DO NOT** prop doors open to allow for visitor access.

An interactive campus map is available at <http://map.utah.edu/>

### **Travel Rules for Reimbursement**

Participants who have been informed by the American Mathematical Society that they will receive some support for their travel/subsistence should note the following procedure for reimbursement of expenses:

1. Participants must pay all of their own housing and living expenses before and during the conference. Travel vouchers will be processed after the Summer Institute.
2. Participants are expected to fill out an expense voucher at the conference and return it to the conference coordinator by the close of the conference office the week of departure. No travel vouchers will be accepted for processing after August 9. The expense vouchers will be processed at AMS Headquarters and checks will be mailed to the address indicated on the voucher within six weeks of the conference ending. Checks cannot be produced at the conference.
3. Participants should keep copies of their original receipts, since those may be required for reimbursement.
4. Participants who wish to request funds but have not been offered support may obtain a travel expense voucher from the conference coordinator at registration. These additional requests will be given to the committee for consideration. Decisions on funding are made by the Organizing Committee and may not be known until after the Summer Institute is completed.
5. Additional information concerning travel funded by grants from the National Science Foundation and the National Security Agency is contained in a separate attachment and will be sent to the appropriate applicants.

### **Visa Rules**

Visa regulations are continually changing for travel to the United States. Visa applications may take from three to four months to process and require a personal interview, as well as specific personal information. International participants should view the important information about traveling to the U.S. found at [nationalacademies.org/pga/biso/visas/](http://nationalacademies.org/pga/biso/visas/) and [travel.state.gov/visa/visa\\_1750.html](http://travel.state.gov/visa/visa_1750.html).

### **Transportation**

Convenient transportation is available throughout Salt Lake City area. The PHC summer conference desk can provide more information about transportation options.

**By Auto:** Salt Lake City International Airport is a 20-minute drive to the University and is served by most major carriers. Follow the signs for I-80 East out of the airport. Take Exit 122 onto 600 South. Continue West on 600 South for approximately 1.9 miles. Turn left onto S 700 East for .3 miles. Turn right onto UT-186E/E400 S/E University Blvd. (Continue to follow UT-186 E) Turn left onto Mario Capecchi Drive. Turn right onto S 1900 East for approximately 82 feet. Turn right onto Fort Douglas Blvd and the destination will be on the right. The University of Utah, 12-50 Fort Douglas Blvd., Salt Lake City, UT 84113, USA.

**UTA TRAX:** UTA TRAX is Salt Lake Valley's light rail system. It has three main lines – the Red, Green and Blue Line. University Guest House is situated adjacent to the Fort Douglas stop on the Red Line, near the end of the route. To reach the Guest House from downtown, board the Red Line at Court House. To reach the Guest House from the Airport, take the Green Line to Court House and transfer to the Red Line to University. The one way fare to and from the airport is US\$2.50.

**Shuttle Service and Taxi Service:** Taxi and shuttle services are available at the Ground Transportation desk located at either terminal. For reservations and rates for Express Shuttle, call (800) 397-0773. For reservations and rates for City Cab, call (801) 363-5550 or (801) 363-8400. For reservations and rates, call Yellow Cab at (801) 521-2100. Participants are responsible for making their own arrival and departure reservations.

## **Parking**

Participants who have cars will need to purchase parking passes from the University of Utah Commuter Services Office. It is recommended that those who plan to drive to the conference contact the Commuter Services Office at least one week prior to arrival. For more information about parking passes, please call 801-581-6415 and identify yourself as a Summer Conference guest. Parking is US\$5 per day per vehicle and lots are in close proximity to the residence halls. For more information, please visit: <http://commuterservices.utah.edu/index.php>.

## **Schedule Overview**

Mornings will be devoted to plenary lectures and afternoons to four parallel topical seminars. Tentative schedules are listed below, week by week.

### **July 13-17**

- Plenary speakers: Cantat, Donaldson, Hacon, McKernan, Voisin
- Seminar organizers: Boucksom, Eisenbud, Kawamata, Kebekus, Kollár, Voisin
- Themes: analytic methods, birational geometry and classification, commutative algebra and computational algebraic geometry, Hodge theory, singularities and characteristic  $p$  methods

### **July 20-24**

- Plenary speakers: Bridgeland, Gross, Kontsevich, Lurie, Ngô, Okounkov, Pandharipande
- Seminar organizers: Bhatt, Huybrechts, Maulik, Nadler, Payne, Werner
- Themes: derived algebraic geometry, derived categories, geometric representation theory, Gromov-Witten and Donaldson-Thomas theories, mirror symmetry, tropical geometry

### **July 27-31**

- Plenary speakers: Esnault, Kisin, Scholze, Zhang
- Seminar organizers: Colliot-Thélène, Kedlaya, Kim, Poonen, Totaro
- Themes: algebraic cycles, cohomology theories,  $p$ -adic Hodge theory, rational points and Diophantine problems, topology of algebraic varieties

Additional information can be found on the organizers' websites at:

- <https://sites.google.com/site/2015summerinstitute/home/schedule/july-13-17>
- <https://sites.google.com/site/2015summerinstitute/home/schedule/july-20-24>
- <https://sites.google.com/site/2015summerinstitute/home/schedule/july-27-31>

## **Meeting Facilities**

Meeting rooms in the University Guest House and Conference Center will be equipped with a projector, a projector support package (screen, AV cart, cables), sound and a mic. Each lecture room will have a projector, screen and white board built in. All rooms will be air-conditioned.



For additional equipment please inform the conference coordinator two weeks prior to the meeting. It may not be possible to accommodate equipment requests made during the conference.

If you are planning to bring or rent any computer equipment during the conference, please be advised that there is no secure place to store such equipment. Neither the AMS nor the University is responsible for lost, stolen, or damaged property belonging to the conference participants or guests.

### **Additional Information**

**Scientific Program:** Questions regarding the scientific program should be directed to Brendan Hassett, Rice University, [hassett@rice.edu](mailto:hassett@rice.edu)

**Accommodations and Registration:** Questions concerning accommodations and registration please contact the Mathematics Meetings Service Bureau of the AMS, [mmsb@ams.org](mailto:mmsb@ams.org)

**Conference Administration:** Requests for information about the administration of the Institute should be sent to Ellen Maycock, Coordinator of Special Projects, AMS, [ejm@ams.org](mailto:ejm@ams.org)

**General and Logistics:** For information of a general nature concerning arrangements for the conference, email Robin Hagan Aguiar, Assistant to the Associate Executive Director, AMS, at [rha@ams.org](mailto:rha@ams.org)

### **LOCATIONS:**

#### **Residence Hall:**

##### **Peterson Heritage Center**

5 Heritage Center

Salt Lake City, UT 84112

PHC Information Desk: 801-587-2000 (24 hours)

##### **University Guest House & Conference Center**

110 South Fort Douglas Blvd.

Salt Lake City, UT 84113-5036

Hotel Reservations

Local: 801-587-1000

Toll Free: 888-416-4075