

MEETINGS & CONFERENCES OF THE AMS

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The Meetings and Conferences section of the Notices gives information on all AMS meetings and conferences approved by press time for this issue. Please refer to the page numbers cited on this page for more detailed information on each event. Invited Speakers and Special Sessions are listed as soon as they are approved by the cognizant program committee; the codes listed are needed for electronic abstract submission. For some meetings the list may be incomplete. Information in this issue may be dated.

The most up-to-date meeting and conference information can be found online at: www.ams.org/meetings/.

Important Information About AMS Meetings: Potential organizers, speakers, and hosts should refer to page 75 in the January 2017 issue of the *Notices* for general information regarding participation in AMS meetings and conferences.

Abstracts: Speakers should submit abstracts on the easy-to-use interactive Web form. No knowledge of \LaTeX is

necessary to submit an electronic form, although those who use \LaTeX may submit abstracts with such coding, and all math displays and similarly coded material (such as accent marks in text) must be typeset in \LaTeX . Visit www.ams.org/cgi-bin/abstracts/abstract.pl/. Questions about abstracts may be sent to abs-info@ams.org. Close attention should be paid to specified deadlines in this issue. Unfortunately, late abstracts cannot be accommodated.

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See www.ams.org/meetings/ for the most up-to-date information on these conferences.

ASSOCIATE SECRETARIES OF THE AMS

Central Section: Georgia Benkart, University of Wisconsin-Madison, Department of Mathematics, 480 Lincoln Drive, Madison, WI 53706-1388; e-mail: benkart@math.wisc.edu; telephone: 608-263-4283.

Eastern Section: Steven H. Weintraub, Department of Mathematics, Lehigh University, Bethlehem, PA 18015-3174; e-mail: steve.weintraub@lehigh.edu; telephone: 610-758-3717.

Southeastern Section: Brian D. Boe, Department of Mathematics, University of Georgia, 220 D W Brooks Drive, Athens, GA 30602-7403, e-mail: brian@math.uga.edu; telephone: 706-542-2547.

Western Section: Michel L. Lapidus, Department of Mathematics, University of California, Surge Bldg., Riverside, CA 92521-0135; e-mail: lapidus@math.ucr.edu; telephone: 951-827-5910.

Meetings & Conferences of the AMS

IMPORTANT INFORMATION REGARDING MEETINGS PROGRAMS: AMS Sectional Meeting programs do not appear in the print version of the *Notices*. However, comprehensive and continually updated meeting and program information with links to the abstract for each talk can be found on the AMS website. See www.ams.org/meetings/.

Final programs for Sectional Meetings will be archived on the AMS website accessible from the stated URL .

Montréal, Quebec Canada

McGill University

July 24–28, 2017

Monday – Friday

Meeting #1130

The second Mathematical Congress of the Americas (MCA 2017) is being hosted by the Canadian Mathematical Society (CMS) in collaboration with the Pacific Institute for the Mathematical Sciences (PIMS), the Fields Institute (FIELDS), Le Centre de Recherches Mathématiques (CRM), and the Atlantic Association for Research in the Mathematical Sciences (AARMS).

Associate secretary: Brian D. Boe

Announcement issue of *Notices*: To be announced

Program first available on AMS website: January 23, 2017

Program issue of electronic *Notices*: To be announced

Issue of *Abstracts*: To be announced

Deadlines

For organizers: Expired

For abstracts: Expired

Denton, Texas

University of North Texas

September 9–10, 2017

Saturday – Sunday

Meeting #1131

Central Section

Associate secretary: Georgia Benkart

Announcement issue of *Notices*: June 2017

Program first available on AMS website: July 27, 2017

Program issue of electronic *Notices*: To be announced

Issue of *Abstracts*: Volume 38, Issue 3

Deadlines

For organizers: Expired

For abstracts: July 18, 2017

The scientific information listed below may be dated.

For the latest information, see www.ams.org/amsmtgs/sectional.html.

Invited Addresses

Mirela Çiperiani, University of Texas at Austin, *Title to be announced*.

Adrianna Gillman, Rice University, *Title to be announced*.

Kevin M. Pilgrim, Department of Mathematics, Indiana University, Bloomington, IN, *Semigroups of branched mapping classes: dynamics and geometry*.

Special Sessions

If you are volunteering to speak in a Special Session, you should send your abstract as early as possible via the abstract submission form found at <http://www.ams.org/cgi-bin/abstracts/abstract.pl>.

Algebraic Combinatorics of Flag Varieties (Code: SS 11A), **Martha Precup**, Northwestern University, and **Edward Richmond**, Oklahoma State University.

Analysis and PDEs in Geometry (Code: SS 20A), **Stephen McKeown**, Princeton University.

Applicable and Computational Algebraic Geometry (Code: SS 17A), **Eric Hanson**, Texas Christian University, and **Frank Sottile**, Texas A&M University.

Banach Spaces and Applications (Code: SS 9A), **Pavlos Motakis**, Texas A&M University, and **Bönyamin Sari**, University of North Texas.

Combinatorial/Geometric/Probabilistic Methods in Group Theory (Code: SS 19A), **Rostislav Grigorchuk** and **Volodymyr Nekrashevych**, Texas A&M University,

Dmytro Savchuk, University of South Florida, and **Zoran Sunic**, Texas A&M University.

Combinatorics and Representation Theory of Reflection Groups: Real and Complex (Code: SS 14A), **Elizabeth Drellich**, Swarthmore College, and **Drew Tomlin**, Hendrix College.

Commutative Algebra (Code: SS 10A), **Jonathan Montano**, University of Kansas, and **Alessio Sammartano**, Purdue University.

Differential Equation Modeling and Analysis for Complex Bio-systems (Code: SS 8A), **Pengcheng Xiao**, University of Evansville, and **Honghui Zhang**, Northwestern Polytechnical University.

Differential Geometry of Smooth and Discrete Surfaces in Euclidean and Lorentz Spaces (Code: SS 18A), **Barbara Shipman**, University of Texas at Arlington, and **Patrick Shipman**, Colorado State University.

Dynamics, Geometry and Number Theory (Code: SS 1A), **Lior Fishman** and **Mariusz Urbanski**, University of North Texas.

Fractal Geometry and Ergodic Theory (Code: SS 5A), **Mrinal Kanti Roychowdhury**, University of Texas Rio Grande Valley.

Generalizations of Graph Theory (Code: SS 22A), **Nathan Reff**, SUNY Brockport, and **Lucas Rusnak** and **Piyush Shroff**, Texas State University.

Geometric Combinatorics and Combinatorial Commutative Algebra (Code: SS 16A), **Anton Dochtermann** and **Suho Oh**, Texas State University.

Homological Methods in Commutative Algebra (Code: SS 15A), **Peder Thompson**, Texas Tech University, and **Ashley Wheeler**, University of Arkansas.

Integrable Systems and Applications (Code: SS 24A), **Baofeng Feng**, The University of Texas Rio Grande Valley, and **Akif Ibragimov** and **Magdalena Toda**, Texas Tech University.

Invariants of Links and 3-Manifolds (Code: SS 7A), **Mieczyslaw K. Dabkowski** and **Anh T. Tran**, The University of Texas at Dallas.

Lie Algebras, Superalgebras, and Applications (Code: SS 3A), **Charles H. Conley**, University of North Texas, **Dimitar Grantcharov**, University of Texas at Arlington, and **Natalia Rozhkovskaya**, Kansas State University.

Mathematical and Computational Biology (Code: SS 21A), **Rajeev K. Azad**, University of North Texas, and **Brandilyn Stigler**, Southern Methodist University.

Noncommutative and Homological Algebra (Code: SS 4A), **Anne Shepler**, University of North Texas, and **Sarah Witherspoon**, Texas A&M University.

Nonlocal PDEs in Fluid Dynamics (Code: SS 12A), **Changhui Tan**, Rice University, and **Xiaoqian Xu**, Carnegie Mellon University.

Numbers, Functions, Transcendence, and Geometry (Code: SS 6A), **William Cherry**, University of North Texas, **Mirela Ciperiani**, University of Texas Austin, **Matt Papanikolas**, Texas A&M University, and **Min Ru**, University of Houston.

Real-Analytic Automorphic Forms (Code: SS 2A), **Olav K. Richter**, University of North Texas, and **Martin Westerholt-Raum**, Chalmers University of Technology.

Recent Progress on Hyperbolic Conservation Laws (Code: SS 23A), **Ilija Jegdic**, Texas Southern University, and **Katarina Jegdic**, University of Houston, Downtown.

Topics Related to the Interplay of Noncommutative Algebra and Geometry (Code: SS 13A), **Richard Chandler**, University of North Texas at Dallas, **Michaela Vancliff**, University of Texas at Arlington, and **Padmini Veerapen**, Tennessee Technological University.

Accommodations

Participants should make their own arrangements directly with the hotel of their choice. Special discounted rates were negotiated with the hotels listed below. Rates quoted do not include the Texas state hotel tax (13%) and hotel fees may apply. Participants must state that they are with the **American Mathematical Society's (AMS) Fall Central Sectional Meeting** to receive the discounted rate. The AMS is not responsible for rate changes or for the quality of the accommodations. **Hotels have varying cancellation and early checkout penalties; be sure to ask for details.**

SpringHill Suites by Marriott Denton, 1434 Centre Pl Dr, Denton, TX 76205; (940) 383-4100; www.marriott.com/hotels/fact-sheet/travel/dfwsd-springhill-suites-denton/. Rates are **US\$119** per night for a single occupancy, king room. Amenities include complimentary Wi-Fi in guest rooms; complimentary on-site parking; shuttle service to campus; newspaper and coffee in lobby. Rooms are furnished with a mini-fridge and coffee maker. This property is about a 5 minute drive from campus. Cancellation and early check-out policies vary and penalties exist at this property; be sure to check when you make your reservation. The deadline for reservations at this rate is 5:00 pm CST, **August 11, 2017**.

Courtyard by Marriott Denton, 2800 Colorado Blvd, Denton, TX 76210; (940) 382-4600; www.marriott.com/hotels/hotel-photos/dfwde-courtyard-denton/.html. Rates are **US\$119** per night for single or double occupancy rooms. Amenities include complimentary on-site parking; 24-hour market stocked and convenient for snacks or meals on the go; free Wi-Fi; courtesy shuttle service to the University of North Texas campus; the latest news, weather and local information via the GoBoard; Bistro-Eat. Drink. Connect., which provides guests with healthy food, beverages, and Starbucks items during the morning breakfast and evening dinner service with cocktails; fitness center; indoor pool; 24-hour business center with boarding pass printing. Cancellation and early check-out policies vary and penalties exist at this property; be sure to check when you make your reservation. The deadline for reservations at a reduced rate is by 5:00 pm CST, **August 9, 2017**.

Best Western Premier Crown Chase Inn & Suites, 2450 Brinker, Denton, Texas 76208; (940) 387-1000; https://www.bestwestern.com/en_US/book/hotels-in-denton/best-western-premier-crown-chase

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inn-suites/propertyCode.44648.html. Rates for king and double queen rooms are **US\$119** per night. Amenities include complimentary full breakfast buffet; exercise facilities; wireless internet connection in public areas; hot tub; cocktail lounge with light fare; outdoor pool; microwave, coffee maker and mini-fridge in rooms. This property is about a 10 minute drive from the campus. Cancellation and early check-out policies vary and penalties exist at this property; be sure to check when you make your reservation. The deadline for reservations at a reduced rate is **August 18, 2017**.

Comfort Inn, 4050 Mesa Dr, Denton, TX 76207; (940) 320-5150; <https://www.choicehotels.com/texas/denton/comfort-inn-hotels/txa96>. Rates are **US\$79** per night for a single king bed or **US\$83** per night for two queen beds. Amenities include free WiFi; indoor heated pool and hot tub; exercise room; business center and guest laundry facilities. This property is about a 15 minute drive from the University of North Texas. Cancellation and early check-out policies vary and penalties exist at this property; be sure to check when you make your reservation. The deadline for reservations at this rate is **Thursday, August 10, 2017**.

Days Inn, Denton, 4211 I-35 Frontage Rd, Denton, TX 76207; (940) 600-1527; <https://www.wyndhamhotels.com/days-inn/denton-texas/days-inn-denton/overview>. Rates are **US\$59.99** per night for a room with a single bed or **US\$64.99** for a room with double beds; this rate is applicable for single or double occupancy. Amenities include business center; fitness center; free breakfast; free WiFi; laundry services; on-site parking and outdoor pool. This property is located approximately 2 miles from campus. Cancellation and early check-out policies vary and penalties exist at this property; be sure to check when you make your reservation. The deadline for reservations at this rate is **Friday, August 11, 2017**.

La Quinta Inn & Suites, 4465 N Interstate 35, Denton, TX 76207; (940) 808-0444; www.laquintadentonuniversitydr.com/. Rates are **US\$109** per night for a room with a single king or double queen beds; this rate is applicable for single or double occupancy. Amenities include free Bright Side Breakfast®, a daily assortment of waffles, hot and cold cereals, breads and muffins, fresh fruit, and all-you-can-drink coffee and juice; full business center; indoor swimming pool and Jacuzzi-style spa; free Wi-Fi access and free premium cable channels on a flat-screen television. This property is located approximately 2 miles from campus. Cancellation and early check-out policies vary and penalties exist at this property; be sure to check when you make your reservation. The deadline for reservations at this rate is **Friday, August 11, 2017**.

Best Western Plus Denton Inn & Suites, 2910 W University Dr, Denton, TX 76201; (940) 591-7726; bestwestern-texas.com/hotels/best-western-plus-denton-inn-and-suites. Rates are **US\$85.99** per night for a room with a single king or **US\$93.99** per night for a room with double queen beds; this rate is applicable for single or double occupancy. Amenities include exercise facili-

ties; outdoor pool; complimentary full breakfast including scrambled eggs, bagels, assorted pastries, juices and much more from 6:00am to 9:00am; guest laundry; free parking; business center and high-speed Internet access. This property is about a 10 minute drive from campus. Cancellation and early check-out policies vary and penalties exist at this property; be sure to check when you make your reservation. The deadline for reservations at this rate is **Thursday, August 24, 2017**.

Homewood Suites by Hilton, 2907 Shoreline Dr, Denton, TX 76201; (940) 382-0420; homewoodsuites.hilton.com/en/hw/groups/personalized/F/FTWDEHW-AMS-20170906/index.jhtml?WT.mc_id=POG. Rates are **US\$119** per night for a king studio suite or king one bedroom suite; this rate is applicable for single or double occupancy. Amenities include free full hot breakfast on weekend days from 7:00am-10:00am; complimentary Wi-Fi; fitness and business centers; outdoor pool and courtyard with sports court and BBQ grills. This property is about a 10 minute drive from campus. Cancellation and early check-out policies vary and penalties exist at this property; be sure to check when you make your reservation. The deadline for reservations at this rate is **Thursday, August 11, 2017**.

Fairfield Inn and Suites, 2900 W University Dr, Denton, TX 76201; (940) 384-1700; www.marriott.com/hotels/travel/dfwdn-fairfield-inn-and-suites-denton/. Rates are **US\$99** per night for a room with a king bed or double queen beds; this rate is applicable for single or double occupancy. Amenities include free cable TV with HBO; mini-fridge and microwave in every room; LCD TVs in all rooms and complimentary hot breakfast. This property is about a 10 minute drive from campus. Cancellation and early check-out policies vary and penalties exist at this property; be sure to check when you make your reservation. The deadline for reservations at this rate is **Friday, August 25, 2017**.

Holiday Inn Express and Suites, Denton, 4485 N Interstate 35, Denton, TX 76207; (940) 808-0600; <https://www.ihg.com/holidayinnexpress/hotels/us/en/denton/dtowu/hoteldetail>. Rates are **US\$119** per night for a room with double queen beds; this rate is applicable for single or double occupancy. Amenities include business center; free high-speed Internet; complimentary Express Start breakfast bar; heated indoor pool; indoor whirlpool; complimentary fitness center and on-site guest self-laundry facilities. This property is about a 10 minute drive from campus. Cancellation and early check-out policies vary and penalties exist at this property; be sure to check when you make your reservation. The deadline for reservations at this rate is **Monday, August 7, 2017**.

Food Services

On Campus: The University Union is the place on campus to relax and enjoy a variety of foods that will satisfy any taste and budget. Hours listed below are subject to change.

Located on the first floor of the University Union, *The Corner Store* serves grab-and-go salads, sandwiches, snacks, and homemade Scrappy's Ice Cream and is open from 11:00 am to 5:00 pm on Saturdays. *Which Wich* is located near *The Corner Store* offering customized fresh-made sandwiches or nutritious Bowlwich salads and is open 11:00 am to 3:00 pm on Saturdays. *Jamba Juice* is located on the first floor in the *Barnes and Noble* and offers a wide selection of delicious, nutritious smoothies, freshly squeezed juices, and energy bowls packed with wholesome ingredients on Saturdays from 11:00 am to 3:00 pm.

Located on the second floor of the University Union, *Burger King* serves the famous Whopper, fries, shakes, and assorted breakfast items on Saturdays from 11:00 am to 9:00 pm. *Chick-fil-A* is nearby for fried or grilled sandwiches and waffle fries on Saturdays from 11:00 am to 9:00 pm. *Starbucks* serves rich brewed flavor of hot coffees and teas or iced coffees and specialty drinks on Saturdays from 9:00 am to 5:00 pm.

Fuzzy's Taco Shop is located on the second floor of the University Union, in the sports bar atmosphere of *The Syndicate*, and serves uniquely flavorful Baja-style tacos and spicy sides. *Fuzzy's Taco Shop* is open on Saturday from 10:00 am to midnight and Sunday from noon to midnight.

The University has two resident dining halls where the public is welcome to purchase dining passes for approximately US\$7.50 plus taxes at either *Bruce Cafeteria*, open Saturday, or *Kerr Cafeteria*, open Sunday.

Bruce Cafeteria is centrally located on the corner of Chestnut and Avenue C. It features a fantastic salad bar with fresh fruit and veggies, freshly made deli sandwiches, an amazing selection of diverse hot entrees, healthy vegetarian options, hand tossed pizza and freshly prepared pasta. For breakfast, lunch and dinner hours visit www.dining.unt.edu/brucehall.

Kerr Cafeteria is located on Maple Street between Avenues A and B in Kerr Hall and is the University's largest dining facility. It features two salad bars, multiple entrée lines, a burger grill and a taco bar. The cafeteria features unique custom-designed food lines modeled after the historic Denton Square. It's also adorned with graphics featuring famous UNT alumni and prominent Texans, and a history of Denton, including historical photographs. For breakfast, lunch and dinner hours visit www.dining.unt.edu/kerrhall.

Off Campus: Denton's Historic Downtown Square is located about 10 blocks from campus and is characterized by its beautiful courthouse and light-drenched lawn with numerous restaurants. The corner of Hickory and Fry Streets near the campus also has a cluster of restaurants. More information on restaurants and local attractions in the Denton area can be found at www.discoverdenton.com/what-to-do/.

Some options for coffee include:

Aura Coffee, 1306 W Hickory St, Denton; (940) 565-1860; small shop serving espresso, lattes, smoothies and breakfast bites.

Cultivar Coffee, 235 W Hickory St, Denton; (940) 380-9319; www.cultivarcoffee.com; a micro-roaster and coffee bar in North Texas serving handcrafted espresso drinks and expertly brewed single-origin coffees.

Loco Cafe, 603 N Locust St, Denton; (940) 387-1413; www.locodenton.com; serving breakfast and lunch 7 days a week with biscuits baked daily, customized coffee with fresh flavors, loose tea, fresh squeezed juice, handmade lemonade and limeade.

Some options nearby for dining include:

Potbelly Sandwich Shop, 1216 W Hickory St, Denton; (940) 297-1287; www.potbelly.com; a retro-style counter-serve chain known for made-to-order toasted sandwiches, salads and baked goods.

Chipotle Mexican Grill, 1224 W Hickory St, Denton; (940) 808-1073; www.chipotle.com; fast-food chain offering Mexican fare, including design-your-own burritos, tacos and bowls.

Crooked Crust, 101 Ave A, Denton; (940) 565-5999; www.crookedcrust.com; funky pizzeria serving hoagies, beer and build-your-own pies with unlimited toppings.

Fry Street Public House, 125 Ave A, Denton; (940) 323-9600; www.frystreetpublichouse.com; a retro-modern style pub serving delicious 'Pub Grub' 12:00 pm to 9:00 pm seven days a week.

Salata, 1200 W Hickory St, Denton; (940) 435-0831; www.salata.com; counter-serve chain offering made-to-order salads featuring signature dressings, plus wraps and soups.

Cool Beans, 1210 W Hickory St, Denton; (940) 382-7025; www.coolbeansdenton.com; bar and grill featuring occasional live music on its rooftop deck plus beer, whiskey and American grub.

Jimmy John's, 107 Ave A, Denton; (940) 484-5466; www.jimmyjohns.com; counter-serve chain specializing in sub and club sandwiches, plus signature potato chips.

Sushi Cafe and Bar, 1115 W Hickory St, Denton; (940) 380-1030; Asian restaurant with fresh sushi, a variety of sake at the bar and other Japanese classics.

Registration and Meeting Information

Advance Registration: Advance registration for this meeting opens on **July 3, 2017**. Advance registration fees will be US\$61 for AMS members, US\$90 for nonmembers, and US\$10 for students, unemployed mathematicians, and emeritus members. Participants may cancel registrations made in advance by emailing mmsb@ams.org. The deadline to cancel is the first day of the meeting.

On-site Information and Registration: The registration desk, AMS book exhibit, and coffee service will be located in the Business Leadership Building (BLB) Atrium. The Invited Addresses, Special Sessions and Contributed Paper Sessions will take place in classrooms which will be in the Business Leadership Building (BLB). Please look for additional information about specific session room locations on the web and in the printed program. For further information on building locations, a campus map

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is available at <https://it.unt.edu/sites/default/files/untcampusmap-fall2016.pdf>.

The registration desk will be open on Saturday, September 9, 7:30 am–4:00 pm. and Sunday, September 10, 8:00 am–12:00 pm. The same fees apply for on-site registration, as for advance registration. Fees are payable on-site via cash, check, or credit card.

Other Activities

Book Sales: Stop by the on-site AMS bookstore to review the newest publications and take advantage of exhibit discounts and free shipping on all on-site orders! AMS members receive 40 percent off list price. Nonmembers receive a 25 percent discount. Not a member? Ask a representative about the benefits of AMS membership.

Complimentary Coffee will be served courtesy of AMS membership services.

AMS Editorial Activity: An acquisitions editor from the AMS book program will be present to speak with prospective authors. If you have a book project that you wish to discuss with the AMS, please stop by the book exhibit.

Special Needs

It is the goal of the AMS to ensure that its conferences are accessible to all, regardless of disability. The AMS will strive, unless it is not practicable, to choose venues that are fully accessible to the physically handicapped.

If special needs accommodations are necessary in order for you to participate in an AMS Sectional Meeting, please communicate your needs in advance to the AMS Meetings Department by:

- Registering early for the meeting
- Checking the appropriate box on the registration form, and
- Sending an email request to the AMS Meetings Department at mmsb@ams.org or meet@ams.org.

AMS Policy on a Welcoming Environment

The AMS strives to ensure that participants in its activities enjoy a welcoming environment. In all its activities, the AMS seeks to foster an atmosphere that encourages the free expression and exchange of ideas. The AMS supports equality of opportunity and treatment for all participants, regardless of gender, gender identity, or expression, race, color, national or ethnic origin, religion or religious belief, age, marital status, sexual orientation, disabilities, or veteran status.

Local Information and Maps

This meeting will take place on the campus of University of North Texas. A campus map can be found at <https://it.unt.edu/sites/default/files/untcampusmap-fall2016.pdf>. Information about the University of North Texas Mathematics Department can be found at math.unt.edu/. Please visit the University of North Texas website at <https://www.unt.edu/> for additional information on the campus.

Please watch the AMS website at www.ams.org/meetings/sectional/sectional.html for additional information on this meeting.

Parking

Attendees electing to stay at off campus hotels may park their car on campus in the public Highland Street Garage by the new Business Leadership Building or the Union Circle Garage, located at Welch and Union Circle by the University Union. The Highland Street Garage only accepts credit cards on weekends at a rate of US\$2 per hour, with a daily maximum of US\$16. Parking in the Union Circle Garage requires downloading the Parkmobile App for payment.

Visitors may also park at parking meters, which are located on Highland Street and West Sycamore Street. The meters located on Fry Street, north of campus, have a one hour time limit. Meter parking is US\$2.25 per hour. The meters DO NOT accept silver coinage. You may only pay using the Parkmobile App. Read more about Parkmobile here transportation.unt.edu/news.

A campus parking map is available at transportation.unt.edu/sites/default/files/UNT_Campus_Parking.pdf. Questions regarding parking for visitors should be directed to the Parking and Transportation Office at (940) 565-3020. Additional information about parking on campus can be found here transportation.unt.edu/parking.

Travel

This meeting will take place on the main campus of University of North Texas, located in the heart of Denton, Texas.

By Air: The Dallas/Fort Worth International Airport (DFW) is served by most major airlines. Please visit the Dallas/Fort Worth International Airport web site for a list of airlines and lists of cities with daily direct flights; www.dfairport.com/airlines/index.php.

There are several options available for transportation to and from the airport.

Super Shuttle offers van rides and car service from the Dallas/Fort Worth International Airport to University of North Texas with prices ranging from US\$54 to US\$110 per passenger each way and should be booked in advance at <https://www.supershuttle.com/locations/dallas-dfw-dal/>.

Taxi service is available on the upper level of Dallas/Fort Worth International Airport Terminals A, B, C and E, and on the lower level of Terminal D. An Airport Guest Assistant will be available at the taxi stands between 8:00 am and midnight. Between midnight and 8:00 am, dial (972) 574-5878 to request a taxi. For more information on taxi service, including approximate fares to various locations, please visit <https://www.dfairport.com/transport/taxis/>.

Rental cars are also available at Dallas/Fort Worth International Airport. The Rental Center can be accessed by shuttle buses located at the lower level of each terminal. Car rental shuttle buses run 24 hours a day. For more

details on the various car rental companies available at the airport, please visit <https://www.dfwairport.com/transport/>.

By Train: At the airport the DART Rail Station is located at Terminal A, Lower Level Curb, Entry A-10. A two-hour Local DART pass is US\$2.50, a local day pass is US\$5 and is good for unlimited rides on all DART buses, DART Rail and TRE trains between Union Station and CentrePort/DFW Airport until 3:00 am the next day. The DART public transit connects to the DCTA train to Denton.

DART Rail Orange Line operates seven days a week to and from the DFW Airport Station, located at DFW Airport's Terminal A, Lower Level Curb, Entry A-10. Trains arrive at DFW regularly from 3:50 am to 1:19 am daily. Schedules for the Dallas Orange Line are available at www.dart.org/riding/dartrailorange.asp.

From the DART Rail Orange Line transfer to the DART Rail Green Line at Bachman Station and then continue to Denton on the A-train at the Trinity Mills station. The A-train schedule, fares and route map are available at <https://www.dcta.net/routes-schedules/a-train/a-train-schedule>. Please plan your trip by viewing the DART rail system map at <https://www.dart.org/maps/printrailmap.asp>.

From Dallas: take DART's Green Line to the Trinity Mills station in Carrollton. At the Trinity Mills station transfer to the A-train* with a simple cross-platform transfer. Take the A-train* to the *Downtown Denton Transit Center* located near the heart of Denton. For the A-train schedule please visit <https://www.dcta.net/routes-schedules/a-train/a-train-schedule>. For the Green Line schedule please visit <https://www.dart.org/riding/dartrailgreenline.asp>.

From Ft. Worth: take the TRE to Victory Station in Dallas. At Victory Station take DART's Green Line headed to Carrollton. Get off the Green Line train at the Trinity Mills station. At the Trinity Mills station transfer to the A-train* with a simple cross-platform transfer. Take the A-train* to the *Downtown Denton Transit Center* located near the heart of Denton.

**Please note, the A-train does not run on Sundays. For information on the DART and the A-train, please visit <https://www.dcta.net/>.*

By Bus: The Fort Worth Transportation Authority (FWTA) and the Denton County Transportation Authority (DCTA), have started a new bus service that connects Fort Worth and Denton with stops on the Alliance Heritage Parkway. The *North Texas Xpress Bus Service* makes round trips each weekday between approximately 5:15 am and 9:30 pm. For a map, schedule and fare information please visit <https://www.dcta.net/routes-schedules/other-dcta-services/north-texas-xpress>.

By Car:

From Dallas: Head North on 35 E N and merge with 35 N.

From Ft. Worth: From the Fort Worth area, head North on 35 W N and merge with 35 N

Car Rental: Hertz is the official car rental company for the meeting. To make a reservation accessing our special

meeting rates online at www.hertz.com, click on the box "I have a discount", and type in our convention number (CV): CV#04N30007. You can also call Hertz directly at 800-654-2240 (U.S. and Canada) or 1-405-749-4434 (other countries). At the time of reservation, the meeting rates will be automatically compared to other Hertz rates and you will be quoted the best comparable rate available.

For directions to campus, inquire at your rental car counter.

Local Transportation

Walking, biking and personal cars are recommended to get around campus and Denton.

By Bus: The University of North Texas *Campus Cruiser* provides convenient local transportation around campus. Please visit transportation.unt.edu/transit/maps-routes/campus-cruiser for the full area map with all bus stops. The *Campus Cruiser* operates Saturdays from 8:30 am to 6:46 pm and Sundays 8:30 am to 8:30 pm.

The *Campus Cruiser* route services on and off campus stops during the week and on weekends. Stops include Uptown Apartments, Victory Hall, & the GAB. Sunday service is provided by UNT mini shuttle buses. The *Campus Cruiser* will pick up and drop off passengers at any of the UNT bus stops on the route. *Please note, the Campus Cruiser does not operate on Fridays.*

Weather:

The average high temperature for September is approximately 88 degrees Fahrenheit and the average low is approximately 65 degrees Fahrenheit. Visitors should be prepared for inclement weather and check weather forecasts in advance of their arrival.

Social Networking:

Attendees and speakers are encouraged to tweet about the meeting using the hashtag #AMSmtg.

Information for International Participants:

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 <https://travel.state.gov/content/travel/en.html>. If you need a preliminary conference invitation in order to secure a visa, please send your request to cro@ams.org.

If you discover you do need a visa, the National Academies website (see above) provides these tips for successful visa applications:

* Visa applicants are expected to provide evidence that they are intending to return to their country of residence. Therefore, applicants should provide proof of "binding" or sufficient ties to their home country or permanent residence abroad. This may include documentation of the following:

MEETINGS & CONFERENCES

- family ties in home country or country of legal permanent residence
 - property ownership
 - bank accounts
 - employment contract or statement from employer stating that the position will continue when the employee returns;
 - * Visa applications are more likely to be successful if done in a visitor's home country than in a third country;
 - * Applicants should present their entire trip itinerary, including travel to any countries other than the United States, at the time of their visa application;
 - * Include a letter of invitation from the meeting organizer or the U.S. host, specifying the subject, location and dates of the activity, and how travel and local expenses will be covered;
 - * If travel plans will depend on early approval of the visa application, specify this at the time of the application;
 - * Provide proof of professional scientific and/or educational status (students should provide a university transcript).
- This list is not to be considered complete. Please visit the websites above for the most up-to-date information.

Buffalo, New York

State University of New York at Buffalo

September 16–17, 2017

Saturday – Sunday

Meeting #1132

Eastern Section

Associate secretary: Steven H. Weintraub

Announcement issue of *Notices*: June 2017

Program first available on AMS website: August 3, 2017

Program issue of electronic *Notices*: To be announced

Issue of *Abstracts*: Volume 38, Issue 3

Deadlines

For organizers: Expired

For abstracts: July 25, 2017

The scientific information listed below may be dated. For the latest information, see www.ams.org/amsmtg/sectional.html.

Invited Addresses

Inwon Kim, University of California at Los Angeles, *Capillary drops on rough surfaces*.

Govind Menon, Brown University, *Building polyhedra by self-assembly*.

Bruce E. Sagan, Michigan State University, *The protean chromatic polynomial*.

Special Sessions

If you are volunteering to speak in a Special Session, you should send your abstract as early as possible via the ab-

stract submission form found at www.ams.org/cgi-bin/abstracts/abstract.pl.

Advanced Techniques in Graph Theory (Code: SS 9A), **Sogol Jahanbekam** and **Paul Wenger**, Rochester Institute of Technology.

Algebraic Topology (Code: SS 17A), **Claudia Miller**, Syracuse University, and **Inna Zakharevich**, Cornell University.

Automorphic Forms and L-functions (Code: SS 14A), **Mahdi Asgari**, Oklahoma State University, and **Joseph Hundley**, University at Buffalo-SUNY.

CR Geometry and Partial Differential Equations in Complex Analysis (Code: SS 5A), **Ming Xiao**, University of Illinois at Urbana-Champaign, and **Yuan Yuan**, Syracuse University.

Cohomology, Deformations, and Quantum Groups: A Session Dedicated to the Memory of Samuel D. Schack (Code: SS 6A), **Miodrag Iovanov**, University of Iowa, **Mihai D. Staic**, Bowling Green State University, and **Alin Stancu**, Columbus State University.

Geometric Group Theory (Code: SS 4A), **Joel Louwsma**, Niagara University, and **Johanna Mangahas**, University at Buffalo-SUNY.

High Order Numerical Methods for Hyperbolic PDEs and Applications (Code: SS 2A), **Jaehun Jung**, University at Buffalo-SUNY, **Fengyan Li**, Rensselaer Polytechnic Institute, and **Li Wang**, University at Buffalo-SUNY.

Infinite Groups and Geometric Structures: A Session in Honor of the Sixtieth Birthday of Andrew Nicas (Code: SS 7A), **Hans Boden**, McMaster University, and **David Rosenthal**, St. John's University.

Knots, 3-manifolds and their Invariants (Code: SS 15A), **William Menasco** and **Adam Sikora**, University at Buffalo-SUNY, and **Stephan Wehrli**, Syracuse University.

Nonlinear Dispersive Partial Differential Equations (Code: SS 18A), **Santosh Bhatrai**, Trocaire College, and **Sharad Silwal**, Jefferson College of Health Sciences.

Nonlinear Evolution Equations (Code: SS 16A), **Marius Beceanu**, SUNY Albany, and **Dan-Andrei Geba**, University of Rochester.

Nonlinear Partial Differential Equations Arising from Life Science (Code: SS 8A), **Junping Shi**, College of William and Mary, and **Xingfu Zou**, University of Western Ontario.

Nonlinear Wave Equations, Inverse Scattering and Applications. (Code: SS 1A), **Gino Biondini**, University at Buffalo-SUNY.

Polynomials in Enumerative, Algebraic, and Geometric Combinatorics (Code: SS 13A), **Robert Davis** and **Bruce Sagan**, Michigan State University.

Recent Advancements in Representation Theory (Code: SS 12A), **Yiqiang Li**, University at Buffalo-SUNY, and **Gufang Zhao**, University of Massachusetts.

Recent Progress in Geometric Analysis (Code: SS 11A), **Ovidiu Munteanu**, University of Connecticut, **Terrence Napier**, Lehigh University, and **Mohan Ramachandran**, University at Buffalo.

Structural and Chromatic Graph Theory (Code: SS 10A), **Hong-Jian Lai**, **Rong Luo**, and **Cun-Quan Zhang**, West

Virginia University, and **Yue Zhao**, University of Central Florida.

p-adic Aspects of Arithmetic Geometry (Code: SS 3A), **Liang Xiao**, University of Connecticut, and **Hui June Zhu**, University at Buffalo-SUNY.

Accommodations

Participants should make their own arrangements directly with the hotel of their choice. Special discounted rates were negotiated with the hotels listed below. Rates quoted do not include the tax of 13.75% per room (8.75% NY State Sales Tax and 5% Erie County Hotel Tax). Participants must state that they are with the **American Mathematical Society (AMS) Meeting at SUNY Buffalo** to receive the discounted rate. The AMS is not responsible for rate changes or for the quality of the accommodations. **Hotels have varying cancellation and early checkout penalties; be sure to ask for details.**

Buffalo Marriott Niagara, 1340 Millersport Highway, Amherst, NY, 14221; (716) 689-6900, <http://www.marriott.com/hotels/travel/bufny-buffalo-marriott-niagara/>. Rates are US\$97 per night for a guest room with one king bed or two double beds; this rate is applicable for single or double occupancy. To reserve a room at this rate contact Marriott reservations at (800) 228-9290 or (716) 689-6900. Amenities include free WiFi in sleeping rooms, fitness center with indoor/outdoor pool, business center, *BlueFire Bar & Grille* on site restaurant (offering room service), complimentary airport shuttle upon request, and a gift shop serving Starbucks coffee daily. Check-in is at 4:00 pm, check-out is at 12:00 pm. This property is located less than .5 miles from campus. Cancellation and early check-out policies vary and penalties exist at this property; be sure to check when you make your reservation. The deadline for reservations at this rate is **August 25, 2017**.

Candlewood Suites Buffalo/Amherst, 20 Flint Road, Amherst, NY, 14226; (716) 688-2100, <http://cwsbuffaloamherst.com/>. Rates are US\$107 per night for a guest room with one queen bed or two queen beds, this rate is applicable for single or double occupancy. Each guest room features a fully equipped kitchen - including refrigerator, dishwasher, microwave and stove top, plus a variety of dishes, cookware and utensils. Amenities include free WiFi in sleeping rooms, *Candlewood Gym* (fitness center), business center, and a convenience store on property. This is a pet-friendly property. Check-in is at 3:00 pm, check-out is at 11:00 am. This property is located approximately .2 miles from campus. Cancellation and early check-out policies vary and penalties exist at this property; be sure to check when you make your reservation. The deadline for reservations at this rate is **August 25, 2017**.

Comfort Inn University, 1 Flint Road, Amherst, NY, 14226; (716) 688-0811, <https://www.choicehotels.com/new-york/amherst/comfort-inn-hotels/ny293> Rates are US\$109 per night for a guest room with two queen beds, this rate is applicable for single or double

occupancy. Amenities include free WiFi in sleeping rooms, fitness center, indoor pool, business center, laundry facilities, and complimentary hot breakfast. This is a pet-friendly property. Check-in is at 3:00 pm, check-out is at 11:00 am. This property is located approximately .2 miles from campus. Cancellation and early check-out policies vary and penalties exist at this property; be sure to check when you make your reservation. The deadline for reservations at this rate is **August 25, 2017**.

Doubletree by Hilton Buffalo-Amherst, 10 Flint Road, Amherst, NY, 14226; (716) 689-4296, <http://doubletree3.hilton.com/en/hotels/new-york/doubletree-by-hilton-hotel-buffalo-amherst-BUFFLDT/index.html>. Rates are US\$107 per night for a guest room with one king bed or two double beds, this rate is applicable for single or double occupancy. To reserve a room at this rate contact the hotel and please reference the group code *AMS*. Amenities include free WiFi in sleeping rooms, fitness center with indoor pool, business center, *Cappuccino's Sidewalk Café* on site restaurant (offering room service), *Lobby Bar*, daily complimentary airport shuttle (7:00 am-11:00 pm), and a gift shop on property. Check-in is at 3:00 pm, check-out is at 12:00 pm. This property is located approximately .2 miles from campus. Cancellation and early check-out policies vary and penalties exist at this property; be sure to check when you make your reservation. The deadline for reservations at this rate is **August 25, 2017**.

Motel 6 Buffalo Amherst, 4400 Maple Road, Amherst, 14226; (716) 834-2231, <http://www.motel6.com/en/motels.1298.html>. Rates are dependent upon occupancy in room. Rooms with one queen bed are available for US\$69.99 for single occupancy, US\$75.99 for double occupancy and US\$78.99 for triple occupancy. Rooms with two queen beds are available for US\$69.99 for single occupancy, US\$75.99 for double occupancy, US\$78.99 for triple occupancy and US\$81.99 for quad occupancy. Children stay free. To reserve a room at this rate contact Motel 6 reservations at (800) 544-4866 and reference *American Mathematical Society*. Amenities include WiFi in sleeping rooms for a nominal fee, and free morning coffee daily. This is a pet friendly property. Check-in is at 4:00 pm, check-out is at 12:00 pm. This property is located approximately .5 miles from campus. Cancellation and early check-out policies vary and penalties exist at this property; be sure to check when you make your reservation. The deadline for reservations at this rate is **August 16, 2017**.

Motel 6 Hamburg, 5245 Camp Road, Hamburg, 14221; (716) 648-2000, <https://www.motel6.com/en/motels.4793.html>. Rates are dependent upon occupancy in room. Rooms with one queen bed are available for US\$69.99 for single occupancy, US\$75.99 for double occupancy and US\$78.99 for triple occupancy. Rooms with two queen beds are available for US\$69.99 for single occupancy, US\$75.99 for double occupancy, US\$78.99 for triple occupancy and US\$81.99 for quad occupancy. Children stay free. To reserve a room at this rate contact Motel 6 reservations at (800) 544-4866 and reference *American Mathematical Society*. Amenities include WiFi in

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sleeping rooms for a nominal fee, and free morning coffee daily. This is a pet friendly property. Check-in is at 4:00 pm, check-out is at 12:00 pm. This property is located approximately .5 miles from campus. Cancellation and early check-out policies vary and penalties exist at this property; be sure to check when you make your reservation. The deadline for reservations at this rate is **August 16, 2017**.

Staybridge Suites Buffalo-Amherst, 1290 Sweet Home Road, Amherst, 14228; (716) 276-8750, <https://www.ihg.com/staybridge/hotels/us/en/amherst/bufrr/hoteldetail>. Rates are US\$119 per night for a guest room with one king bed or two queen beds, this rate is applicable for single or double occupancy. Each guest room features a fully equipped kitchen—including refrigerator, dishwasher, microwave and stove top, plus a variety of dishes, cookware and utensils. Amenities include free WiFi in sleeping rooms, fitness center, indoor saltwater pool, business center, and a complimentary hot breakfast. This is a pet-friendly property. Check-in is at 3:00 pm, check-out is at 12:00 pm. This property is located approximately 1 mile from campus by car and .3 miles from campus walking distance. Cancellation and early check-out policies vary and penalties exist at this property; be sure to check when you make your reservation. The deadline for reservations at this rate is **August 11, 2017**.

Wyndham Garden Buffalo Williamsville, 5195 Main Street, Williamsville, 14221; (716) 689-9600 <https://www.wyndhamhotels.com/wyndham-garden/williams-ville-new-york/wyndham-garden-williams-ville-buffalo/overview>. Rates are US\$119 per night for a guest room with one king bed or two queen beds, this rate is applicable for single or double occupancy. Amenities include free WiFi in sleeping rooms, fitness center, indoor pool, *MTK Prime* on site restaurant (offering room service), lounge in lobby, on property spa *Tres Auræ Spa*, and a gift shop. Check-in is at 3:00 pm, check-out is at 12:00 pm. This property is located approximately 3.3 miles from campus (6 minutes driving time). Cancellation and early check-out policies vary and penalties exist at this property; be sure to check when you make your reservation. The deadline for reservations at this rate is **August 11, 2017**.

Food Services

On Campus: There are various options which are anticipated to be open on campus during the meeting. The hours of operation listed below are for both Saturday and Sunday, unless otherwise indicated and are subject to change.

Student Union:

Moe's Southwest Grill, 11:00 am–3:30 pm (Mexican-Tex Mex)

Tim Hortons, 8:00 am–6:00 pm (Coffee, bakery, sandwiches)

The Commons, (located across the street from the Student Union at 520 Lee Entrance.):

Bollywood Bistro, 11:00 am–8 pm (Indian)

Chick Mex Grill, noon–9 pm (Mexican, fried chicken and seafood)

Dancing Chopstics, 11:30 am–9 pm (Japanese)

Korean Express, noon–9 pm (Korean)

Rachel's Mediterranean, 11:00 am–6:00 pm (salads, wraps, and rice bowls)

Starbucks, 7:00 am–11:00 pm (Coffee, bakery, sandwiches)

Subway, 10:00 am–9:00 pm (fast food sandwiches)

Young Chow, noon–9:00 pm (Chinese)

Capen Hall:

Whispers Cafe, Saturday, 9:00 am–4:00 pm, Sunday, noon–8:00 pm (coffee, sandwiches, snacks and salads)

Off Campus: The Buffalo-Niagara region is a major metropolitan area with array of dining options throughout the area. For more information on dining throughout the region please visit, <http://www.visitbuffaloniagara.com/eat-drink/>.

Some dining options nearby to the North Campus include:

Amherst Pizza and Ale House, 55 Crosspoint Parkway, Amherst, (716)625-7100, Saturday 11:00 am–1:00 am and Sunday, 12:00 pm–9:00 pm (pizza, wings and a large selection of beers)

Black Forest Adler, 2447 Niagara Falls Blvd, Amherst, (716) 564-2447, Saturday 4:00 pm–9:00 pm and Sunday, 4:00 pm–8:00 pm (German, European Cuisine)

Brickhouse Tavern + Tap, 4120 Maple Road, Amherst, (716) 834-1490, Saturday 10:30 am–1:00 am and Sunday, 10:30 am–11:00 pm (serving brunch, lunch and dinner; New American cuisine and pub fare)

Buffalo Roadhouse Grill, 1980 Niagara Falls Blvd, Tonawanda, (716) 692-7999, Saturday and Sunday, 11:00 am–10:00 pm (American bar and steakhouse.)

Duff's, 3651 Sheridan Dr, Amherst, (716) 834-6234, Saturday 11:00 am–12:00 am and Sunday, 12:00 pm–10:00 pm (American, bar, specializing in wings)

The Grapevine Restaurant, 2545 Niagara Falls Blvd, Amherst, (716) 691-7799, Saturday 11:30 am–11:00 pm and Sunday, 10:00 am–9:00 pm (Italian, American, Gluten Free Options)

Jasmine Thai Restaurant, 1330 Niagara Falls Blvd, Tonawanda, (716) 838-3011, Saturday and Sunday, 12:00 pm–9:30 pm (Asian, Thai, vegetarian friendly options)

Joe's Crab Shack, 4125 Maple Rd, Amherst, (716) 836-473, Saturday 11:00 am–12:00 am and Sunday, 11:00 am–11:00 pm (Chain restaurant serving crab and seafood⁹)

Olive Garden, 3951 Maple Rd, Amherst, (716) 837-5211, Saturday 11:00 am–11:00 pm and Sunday, 11:00 am–10:00 pm (Chain restaurant serving Italian dishes)

Pi Craft, 1750 Niagara Falls Blvd, Tonawanda, (716) 833-5300, Saturday and Sunday, 12:00 pm–9:00 pm (Hand-crafted pizza, focaccia sandwiches and salads)

Red Pepper Chinese-Vietnamese, 3910 Maple Road, Amherst, (716) 831-3878, Saturday 12:00 p.m. - 11:00 p.m. and Sunday, 12:00 pm–10:00 pm (Chinese and Vietnamese cuisine)

Ted's Hot Dogs, 2351 Niagara Falls Blvd, Amherst, (716) 691-3761, Saturday and Sunday, 10:30 am–10:30 pm (charcoal cooked hot dogs and hamburgers)

800 Maple, 800 Maple Rd, Williamsville, (716) 688-5800, Saturday 5:00 pm–11:00 pm and Sunday, 5:00 pm–9:00 pm (wood fired brick oven pizza, pasta, fresh seafood and steaks)

Registration and Meeting Information

Advance Registration: Advance registration for this meeting will open on **July 3rd**. Advance registration fees are US\$61 for AMS members, US\$90 for nonmembers, and US\$10 for students, unemployed mathematicians, and emeritus members. Participants may cancel registrations made in advance by emailing mmsb@ams.org. The deadline to cancel is the first day of the meeting.

On site Information and Registration: The registration desk, AMS book exhibit, and coffee service will be located on the second floor of Knox Lecture Hall. The Invited Addresses will be held in the same building in Knox 104. Special Sessions and Contributed Paper Sessions will take place in NSC (Natural Sciences Complex), O'Brian Hall, and Norton Hall. Please look for additional information about specific session room locations on the web and in the printed program. For further information on building locations, a campus map is available at http://www.buffalo.edu/content/dam/www/shared_assets/campus_maps/NorthCampus_bus-routes-opt.pdf.

The registration desk will be open on Saturday, September 16, 7:30 am–4:00 pm and Sunday, September 17, 8:00 am–12:00 pm. The same fees apply for on-site registration, as for advance registration. Fees are payable on-site via cash, check, or credit card.

There will be a **reception** for participants on Saturday evening hosted by the University. Please watch for more details on this event on the AMS website and at the registration desk on site at the meeting. The AMS thanks our hosts for their gracious hospitality.

Other Activities

Book Sales: Stop by the on site AMS bookstore to review the newest publications and take advantage of exhibit discounts and free shipping on all on site orders! AMS members receive 40% off list price. Nonmembers receive a 25% discount. Not a member? Ask a representative about the benefits of AMS membership. Enjoy **Complimentary coffee** served courtesy of AMS Membership Services.

AMS Editorial Activity: An acquisitions editor from the AMS book program will be present to speak with prospective authors. If you have a book project that you wish to discuss with the AMS, please stop by the book exhibit.

Special Needs

It is the goal of the AMS to ensure that its conferences are accessible to all, regardless of disability. The AMS will strive, unless it is not practicable, to choose venues that are fully accessible to the physically handicapped.

If special needs accommodations are necessary in order for you to participate in an AMS Sectional Meeting, please communicate your needs in advance to the AMS Meetings Department by:

- Registering early for the meeting

- Checking the appropriate box on the registration form, and
- Sending an email request to the AMS Meetings Department at mmsb@ams.org or meet@ams.org.

AMS Policy on a Welcoming Environment

The AMS strives to ensure that participants in its activities enjoy a welcoming environment. In all its activities, the AMS seeks to foster an atmosphere that encourages the free expression and exchange of ideas. The AMS supports equality of opportunity and treatment for all participants, regardless of gender, gender identity, or expression, race, color, national or ethnic origin, religion or religious belief, age, marital status, sexual orientation, disabilities, or veteran status.

Local Information and Maps

This meeting will take place on the North Campus of the University at Buffalo, the State University of New York. A campus map can be found at <http://www.buffalo.edu/home/visiting-ub/CampusMaps.html>. Information about the University at Buffalo, SUNY Department of Mathematics can be found at <http://www.buffalo.edu/cas/math.html>. For additional information about the university please visit the University at Buffalo, SUNY website at <https://www.buffalo.edu/>.

Please watch the AMS website at www.ams.org/meetings/sectional/sectional.html for additional information on this meeting.

Parking

Parking is free on campus after 3:00 p.m. on Friday and all day Saturday and Sunday. At these times visitors may park in any lot on campus.

The map located at http://www.buffalo.edu/content/dam/www/shared_assets/campus_maps/NorthCampus_bus-routes-opt.pdf depicts all parking on the North Campus. The meeting will take place in Knox Hall, NSC (Natural Sciences Complex), O'Brian Hall, and Norton Hall, which are labeled 22, 15, 11, and 21 respectively. There are a number of options for lots located close by to all of these locations.

Travel

The North Campus of the University at Buffalo, SUNY is the largest of the three UB campuses and is located just outside of Buffalo in suburban Amherst, NY.

By Air: *Buffalo Niagara International Airport* (BUF) is the closest airport to the University. It is located approximately 8 miles (15 minutes drive) away from campus in Buffalo, NY and offers over 100 direct flights each day from six air carriers: *United, American, Delta, Jet Blue, Southwest, and Vacation Express*.

There are a variety of ground transportation options to travel from the Buffalo Niagara International Airport to UB.

Taxi fare is approximately US\$30 and should take approximately 15 minutes. There are also a number of shuttle operators servicing the airport, rates will vary depending upon the service and number of passengers.

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For a list of taxi and shuttle vendors please visit the airport website at <http://buffaloairport.com/Ground/Shuttle.aspx>.

NFTA-Metro Bus and Rail also services the airport. Regular Metro Bus service runs through the Buffalo Niagara metropolitan area. One-way fare for this bus line is US\$2. For information on schedules please visit <http://metro.nfta.com/>.

There a number of car rental vendors located on site at the Buffalo Niagara International Airport. More information on rental cars can be found here <http://buffaloairport.com/Ground/Rental.aspx>. Please see below (**By Car**) for driving directions from the airport.

By Train: Amtrak services the Buffalo Niagara region with two train stations: one located in downtown Buffalo at Exchange Street, near the light rail line, and a second in the Buffalo suburb of Depew, a 20 minute drive from UB's North Campus. For information on schedules please visit Amtrak at <https://www.amtrak.com/home>.

By Bus: Bus service to Buffalo is offered through three large carriers: *Greyhound*, *Megabus* and *Trailways*, with stops in downtown Buffalo and at the Buffalo Niagara International Airport. Many buses utilize the Metropolitan Transportation Center Station located on the southeast corner of North Division and Ellicott Streets in Downtown Buffalo.

For more information on *Greyhound* please call 800-231-2222 or visit <https://www.greyhound.com/>. For information on *Trailways* please visit <http://www.trailways.com/> or call (877) 908-9330. For details on *Megabus* please visit <https://us.megabus.com/>.

By Car: When driving to the North Campus please use this address to navigate with GPS: Flint Entrance, Amherst, NY 14260

From the West: Take the I-90 East until you reach the I-290 (past the Buffalo airport exit). Take the I-290 West (toward Niagara Falls) to Exit 5B (Millersport Highway, Route 263). Get off exit and merge into traffic. Go through first light (Marriott is on your left), and merge into right lane. Enter campus at the Flint Road exit.

From the East: Take the I-90 West until you reach the I-290 (just past tolls, follow State University signs). Take the I-290 West (toward Niagara Falls) to Exit 5B (Millersport Highway, Route 263). Get off exit and merge into traffic. Go through first light (Marriott is on your left), and merge into right lane. Enter campus at the Flint Road exit.

From the Buffalo Niagara Airport: Exit the airport following the signs leading to Route 33 West toward Buffalo. Route 33 (Kensington Expressway) begins at the West Gate of the Buffalo Niagara Airport. Take Route 33 West to the I-90 East to the I-290 West. Take the I-290 West (toward Niagara Falls) to Exit 5B (Millersport Highway, Route 263). Get off exit and merge into traffic. Go through first light (Marriott is on your left), and merge into right lane. Enter campus at the Flint Road exit.

From the South: Take I-79 North to Erie, PA. Take the I-90 East until you reach the I-290 (past the Buffalo airport exit). Take the I-290 West (toward Niagara Falls) to

Exit 5B (Millersport Highway, Route 263). Get off exit and merge into traffic. Go through first light (Marriott is on your left), and merge into right lane. Enter campus at the Flint Road exit.

From the North: Take the QEW south to St. Catharines. Follow Highway 405 to the Queenston-Lewiston Bridge and continue east over the bridge (toll) into New York state. Once across bridge take the I-190 South. Follow I-190 South until you reach the I-290 East and proceed until Exit 5B (Millersport Highway, Route 263). Get off exit and merge into traffic. Go through first light (Marriott is on your left), and merge into right lane. Enter campus at the Flint Road exit. If taking the QEW to the Peace Bridge, take the 190 North to the I-290 East and follow the same directions as above paragraph.

Car Rental: Hertz is the official car rental company for the meeting. To make a reservation accessing our special meeting rates online at www.hertz.com, click on the box "Enter a discount or promo code", and type in our convention number (CV): CV#04N30007. You can also call Hertz directly at 800-654-2240 (US and Canada) or 1-405-749-4434 (other countries). At the time of reservation, the meeting rates will be automatically compared to other Hertz rates and you will be quoted the best comparable rate available.

For directions to campus (please see directions included above under the heading **By Car**).

Local Transportation

The Buffalo Niagara region offers **public transportation** in the forms of Metro Buses and the Metro Rail. For more information on the NFTA-Metro or to plan your trip please visit <http://metro.nfta.com/>.

Metro tickets and passes are valid on Metro Buses and Metro Rail. Pass must be retained for duration of trip. Standard fare is US\$2 for a full fare or US\$1 for a reduced fare (children aged 5-11 or seniors 65 and older), valid for a single ride. A day pass is available for service on the day of purchase (5:00 am-2:00 am); a full fare is US\$5 and a reduced fare is US\$2.50.

Taxi Service is available in the Buffalo Niagara region. Two vendors familiar with the campus are:

Buffalo Transportation, (716) 877-5600, <http://www.buffalotransportation.com/>.

Liberty Cab, (716) 877-7111, <http://www.libertycab.com/>.

Weather

Weather in September in Buffalo is typically pleasant and mild. The average high temperature is approximately 75 degrees Fahrenheit and the average low is approximately 50 degrees Fahrenheit. Visitors should be prepared for inclement weather and check weather forecasts in advance of their arrival.

Social Networking

Attendees and speakers are encouraged to tweet about the meeting using the hashtags #AMSmtg.

Information for International Participants

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 US found at <https://travel.state.gov/content/travel/en.html>. If you need a preliminary conference invitation in order to secure a visa, please send your request to mac@ams.org.

If you discover you do need a visa, the National Academies website (see above) provides these tips for successful visa applications:

* Visa applicants are expected to provide evidence that they are intending to return to their country of residence. Therefore, applicants should provide proof of “binding” or sufficient ties to their home country or permanent residence abroad. This may include documentation of the following:

- family ties in home country or country of legal permanent residence
- property ownership
- bank accounts
- employment contract or statement from employer stating that the position will continue when the employee returns;

* Visa applications are more likely to be successful if done in a visitor's home country than in a third country;

* Applicants should present their entire trip itinerary, including travel to any countries other than the United States, at the time of their visa application;

* Include a letter of invitation from the meeting organizer or the U.S. host, specifying the subject, location and dates of the activity, and how travel and local expenses will be covered;

* If travel plans will depend on early approval of the visa application, specify this at the time of the application;

* Provide proof of professional scientific and/or educational status (students should provide a university transcript).

This list is not to be considered complete. Please visit the websites above for the most up-to-date information.

Orlando, Florida

University of Central Florida, Orlando

September 23–24, 2017

Saturday – Sunday

Meeting #1133

Southeastern Section

Associate secretary: Brian D. Boe

Announcement issue of *Notices*: June 2017

Program first available on AMS website: August 10, 2017

Program issue of electronic *Notices*: To be announced

Issue of *Abstracts*: Volume 38, Issue 4

Deadlines

For organizers: Expired

For abstracts: August 1, 2017

The scientific information listed below may be dated. For the latest information, see www.ams.org/amsmtgs/sectional.html.

Invited Addresses

Christine Heitsch, Georgia Institute of Technology, *Strings, trees, and RNA folding*.

Jonathan Kujawa, University of Oklahoma, *Realizing the spectrum of tensor categories*.

Christopher D. Sogge, Johns Hopkins University, *On the concentration of eigenfunctions*.

Special Sessions

If you are volunteering to speak in a Special Session, you should send your abstract as early as possible via the abstract submission form found at <http://www.ams.org/cgi-bin/abstracts/abstract.pl>.

Advances in Dirac Equations, Variational Inequalities, Sequence Spaces and Optimization (Code: SS 21A), **Ram N. Mohapatra**, University of Central Florida, and **Turhan Koprubasi**, Kastamonu University (Turkey).

Algebraic Curves and their Applications (Code: SS 3A), **Lubjana Beshaj**, The University of Texas at Austin.

Applied Harmonic Analysis: Frames, Samplings and Applications (Code: SS 6A), **Dorin Dutkay**, **Deguang Han**, and **Qiyu Sun**, University of Central Florida.

Categorical Methods in Representation Theory (Code: SS 11A), **Brian Boe**, University of Georgia, **Jonathan Kujawa**, University of Oklahoma, and **Daniel K. Nakano**, University of Georgia.

Commutative Algebra: Interactions with Algebraic Geometry and Algebraic Topology (Code: SS 1A), **Joseph Brennan**, University of Central Florida, and **Alina Iacob** and **Saeed Nasseh**, Georgia Southern University.

Complex Analysis, Harmonic Analysis, and Approximation Theory (Code: SS 15A), **Alexander V. Tovstolis**, University of Central Florida, and **John Paul Ward**, North Carolina A&T State University.

Differential Equations in Mathematical Biology (Code: SS 12A), **Andrew Nevai**, **Yuanwei Qi**, and **Zhisheng Shuai**, University of Central Florida.

Fractal Geometry, Dynamical Systems, and Their Applications (Code: SS 4A), **Mrinal Kanti Roychowdhury**, University of Texas Rio Grande Valley.

Global Harmonic Analysis and its Applications (Code: SS 10A), **Christopher Sogge** and **Yakun Xi**, Johns Hopkins University, and **Steve Zelditch**, Northwestern University.

Graph Connectivity and Edge Coloring (Code: SS 5A), **Colton Magnant**, Georgia Southern University.

Mathematics of Biomolecules: Discrete, Algebraic, and Topological (Code: SS 20A), **Natasha Jonoska**, University of South Florida, and **Christine Heitsch**, Georgia Institute of Technology.

Modern Statistical Methods for Structured Data (Code: SS 17A), **Marianna Pensky**, University of Central Florida.

Nonlinear Dispersive Equations (Code: SS 7A), **Benjamin Harrop-Griffiths**, New York University, **Jonas Lührmann**, Johns Hopkins University, and **Dana Mendelson**, University of Chicago.

Nonlinear Elliptic Partial Differential Equations (Code: SS 16A), **Luis E. Silvestre**, University of Chicago, and **Eduardo V. Teixeira**, University of Central Florida.

Operator Algebras and Related Topics (Code: SS 8A), **Zhe Liu**, University of Central Florida.

Progress in Fixed Point Theory and Its Applications (Code: SS 9A), **Clement Boateng Ampadu**, Boston, MA, and **Buthinah A. Bin Rehash** and **Afrah A. N. Abdou**, King Abdulaziz University, Saudi Arabia.

Recent Developments in Integral Geometry and Tomography (Code: SS 14A), **Alexander Katsevich**, **Alexander Tovbis**, and **Alexandru Tamasan**, University of Central Florida.

Stochastic Analysis and Applications (Code: SS 19A), **Hongwei Long**, Florida Atlantic University, and **Jiongmin Yong**, University of Central Florida.

Structural Graph Theory (Code: SS 2A), **Martin Rolek**, **Zixia Song**, and **Yue Zhao**, University of Central Florida.

Symplectic and Contact Topology and Dynamics (Code: SS 13A), **Basak Gürel**, University of Central Florida, and **Viktor Ginzburg**, University of California, Santa Cruz.

Trends in Applications of Functional Analysis in Computational and Applied Mathematics (Code: SS 18A), **M. Zuhair Nashed**, University of Central Florida.

Accommodations

Participants should make their own arrangements directly with the hotel of their choice. Special discounted rates were negotiated with the hotels listed below. Rates quoted do not include Florida tax (6%) and occupancy tax (6.5%). Participants must state that they are with the **American Mathematical Society (AMS) Meeting at the University of Central Florida** to receive the discounted rate. The AMS is not responsible for rate changes or for the quality of the accommodations. **Hotels have varying cancellation and early checkout penalties; be sure to ask for details.**

DoubleTree by Hilton Orlando East - UCF Area (1.3 miles from Classroom Building II on campus), 12125

High Tech Ave., Orlando, FL 32817; 407-275-9000; doubletree3hilton.com. Rates are US\$124 per night for a guest room with one king bed or two double beds. Please use this link for making reservations online: <http://group.doubletree.com/americanmathematicalsociety>. Rate includes full hot breakfast buffet, high speed wireless internet and self-parking. The deadline for reservations at this rate is **September 1, 2017**.

Courtyard by Marriott East/UCF Area (1.6 miles from Classroom Building II on campus), 12000 Collegiate Way Orlando, 32817 marriott.com/mcoce. Rates are US\$129 per night for a guest room with one king bed or two queen beds. Please use this link for making reservations online: http://www.marriott.com/meeting-event-hotels/group-corporate-travel/groupCorp.mi?resLinkIdData=American%20Math%20Society%5EMCOCE%60AMSAMSA%7CAMSAMSB%60129%60USD%60false%604%609/22/17%609/24/17%609/8/17&app=resvlink&stop_mobi=yes. This rate includes breakfast, high speed internet access and complimentary parking. The deadline for reservations at this rate is **September 1, 2017**.

Towneplace Suites (1.8 miles from Classroom Building II on campus), 11801 High Tech Avenue Orlando, FL 32817, 407-243-6100; marriott.com/mcots. Rates are US\$139 for a studio suite with a queen bed plus a pull out sofa. This rate includes breakfast, high speed internet access and complimentary parking. Please use this link for making online reservations: http://www.marriott.com/meeting-event-hotels/group-corporate-travel/groupCorp.mi?resLinkIdData=AMS-American%20Math%20Society%20Conference%5EMCOTS%60MSCAMSC%7CMSCBMSC%60139.00%60USD%60false%601%609/22/17%609/24/17%609/1/17&app=resvlink&stop_mobi=yes.

The deadline for reservations at this rate is **September 1, 2017**.

Residence Inn (1.9 miles from Classroom Building II on campus), 11651 University Blvd., Orlando, FL 32817; 407-513-9000; marriott.com/mcore. Rates are US\$149 per night for a one-bedroom or studio suite. Rates include breakfast, high speed internet access and complimentary parking. Please use this link for online reservations: http://www.marriott.com/meeting-event-hotels/group-corporate-travel/groupCorp.mi?resLinkIdData=AMS-American%20Math%20Society%20Conference%5EMCORE%60MSCAMSC%7CMSCBMSC%60149.00%60USD%60false%601%609/22/17%609/24/17%609/1/17&app=resvlink&stop_mobi=yes.

The deadline for reservations at this rate is **September 1, 2017**.

LaQuinta, (2 miles from Classroom Building II on campus) 11805 Research Parkway, Orlando, FL 32826; 407-737-6075; laquintaorlandoucf.com/. Rates are US\$99 per night for a room with two double beds. This rate includes complimentary breakfast, internet access and free parking. Please make your reservation by calling 407-737-6075.

The deadline for reservations at this rate is **September 1, 2017**.

Food Services

On Campus: There are many dining options on campus within walking distance of the meeting. The hours of the on-campus restaurants vary on the weekends. Please see a complete listing here: <http://map.ucf.edu/locations/food/>

Off Campus: Orlando offers many dining options of all types of cuisine. There are quite a few restaurants within a couple of miles from the UCF campus. For more information on dining throughout Orlando please visit, <http://www.visitorlando.com/things-to-do/restaurants/>. And for more information on visiting Orlando in general please visit, www.visitorlando.com/.

Some of the nearby off-campus dining options include:

Applebee's, 12103 Collegiate Way <http://restaurants.applebees.com/fl/orlando/12103-collegiate-way.html>

Zaxby's, 11554 University Blvd, <https://www.zaxbys.com>

Firehouse Subs, 12075a Collegiate Way <http://locations.firehousesubs.com/locations/fl/ucf>

4 Rivers Smokehouse, 11764 University Boulevard <https://4rsmokehouse.com/>

Registration and Meeting Information

Advance Registration: Advance registration for this meeting opens on **July 3**. Advance registration fees are US\$61 for AMS members, US\$90 for nonmembers, and US\$10 for students, unemployed mathematicians, and emeritus members. Participants may cancel registrations made in advance by emailing mmsb@ams.org. The deadline to cancel is the first day of the meeting.

On site Information and Registration: The registration desk, AMS book exhibit and coffee service, as well as the Invited Addresses will be located in Classroom Building II. Special Sessions and Contributed Paper Sessions will take place in Classroom Buildings I and II. For information on building locations, a campus map is available at <https://map.ucf.edu/printable/>.

The registration desk will be open on Saturday, September 23, 7:30 am–4:00 pm and Sunday, September 24, 8:00 am–12:00 pm. The same fees apply for on-site registration, as for advance registration. Fees are payable on-site via cash, check, or credit card.

Other Activities

Book Sales: Stop by the on site AMS bookstore to review the newest publications and take advantage of exhibit discounts and free shipping on all on site orders! AMS members receive 40% off list price. Nonmembers receive a 25% discount. Not a member? Ask a representative about the benefits of AMS membership.

Complimentary coffee will be served courtesy of AMS Membership Services.

AMS Editorial Activity: An acquisitions editor from the AMS book program will be present to speak with prospective authors. If you have a book project that you wish to discuss with the AMS, please stop by the book exhibit.

Special Needs

It is the goal of the AMS to ensure that its conferences are accessible to all, regardless of disability. The AMS will strive, unless it is not practicable, to choose venues that are fully accessible to the physically handicapped.

If special needs accommodations are necessary in order for you to participate in an AMS Sectional Meeting, please communicate your needs in advance to the AMS Meetings Department by:

- Registering early for the meeting
- Checking the appropriate box on the registration form, and
- Sending an email request to the AMS Meetings Department at mmsb@ams.org or meet@ams.org.

AMS Policy on a Welcoming Environment

The AMS strives to ensure that participants in its activities enjoy a welcoming environment. In all its activities, the AMS seeks to foster an atmosphere that encourages the free expression and exchange of ideas. The AMS supports equality of opportunity and treatment for all participants, regardless of gender, gender identity, or expression, race, color, national or ethnic origin, religion or religious belief, age, marital status, sexual orientation, disabilities, or veteran status.

Local Information and Maps

This meeting will take place at the University of Central Florida in Orlando, FL. A campus map can be found at <https://map.ucf.edu/printable/>. Information about the University of Central Florida Department of Mathematics can be found at <https://sciences.ucf.edu/math/>. Please visit the University of Central Florida website at <http://www.ucf.edu>.

Please watch the AMS website at www.ams.org/meetings/sectional/sectional.html for additional information on this meeting.

Parking

Parking for this meeting is available in Parking Garage H, immediately north of Conference Building II (12650 Gemini Blvd North, Orlando, FL 32816). There is no charge for parking in Garage H on the weekends.

Travel

The University of Central Florida is located in metropolitan Orlando.

By Air: The Orlando International Airport is located at One Jeff Fuqua Boulevard, Orlando, Florida 32827. Tel: (407) 825-2001 Website: <https://orlandoairports.net/>.

Orlando International Airport is approximately a 20 mile drive from the meeting at the University of Central Florida.

It is strongly recommended to rent a car to get to the meeting from the airport as public transportation will take over 2 hours with several bus transfers.

The cost for an Uber from the airport to the meeting is \$54–\$69 each way.

MEETINGS & CONFERENCES

To drive from the Orlando International Airport to the meeting at University of Central Florida:

Take 417 North to University Blvd. Exit east onto University Blvd. Continue east on University Blvd. for approximately two miles and it will take you to the main entrance to the campus. Make a left turn at the first light, Gemini Blvd West. Continue on Gemini Blvd West, bearing right, Gemini Blvd West will turn into Gemini Blvd North. Parking Garage H will be on your right at 12650 Gemini Blvd North. Classrooms I & II will be just beyond the Parking Garage H, <https://map.ucf.edu/printable/>.

By Train: Amtrak has a station approximately 18 miles from the meeting at the University of Central Florida. Orlando Florida Station Building, which has a waiting room, is located at 1400 Sligh Boulevard, Orlando, FL 32806. Please contact Amtrack at Tel: 800-USA-RAIL, website: www.amtrak.com.

By Bus: The Greyhound Bus station located at 555 North John Young Parkway is about 18 miles from the meeting at the University of Central Florida. Please contact Greyhound Tel: 1-800-231-2222; Website: www.greyhound.com.

By Car:

From The North:

Option 1 – Take the Florida Turnpike South to 408 east. Take 408 east to 417 North toward Sanford. Exit off of 417 to University Blvd. East. Take University Blvd 2 miles and it will take you to the main entrance of the campus. Make a left turn at the first light, Gemini Blvd West. Continue on Gemini Blvd West, bearing right, Gemini Blvd West will turn into Gemini Blvd North. Parking Garage H will be on your right at 12650 Gemini Blvd North. Classrooms I & II will be just beyond the Parking Garage H, <https://map.ucf.edu/printable/>.

Option 2 – Take I-95 South to SR 50 West. Take SR 50 to Alafaya Trail. Make a right hand turn on Alafaya Trail. Continue on Alafaya Trail to University Blvd. Make a right turn on University Blvd. and you are on campus. Make a left turn at the first light, Gemini Blvd West. Continue on Gemini Blvd West, bearing right, Gemini Blvd West will turn into Gemini Blvd North. Parking Garage H will be on your right at 12650 Gemini Blvd North. Classrooms I & II will be just beyond the Parking Garage H, <https://map.ucf.edu/printable/>.

From The South and Melbourne Area:

Option 1 – Take the Florida Turnpike north and exit onto I-4 East. Continue until you reach 408 east. Take 408 east to 417 North toward Sanford. Exit off of 417 to University Blvd East. Continue on University Blvd. for 2 miles and it will take you to the main entrance of the campus. Make a left turn at the first light, Gemini Blvd West. Continue on Gemini Blvd West, bearing right, Gemini Blvd West will turn into Gemini Blvd North. Parking Garage H will be on your right at 12650 Gemini Blvd North. Classrooms I & II will be just beyond the Parking Garage H, <https://map.ucf.edu/printable/>.

Option 2 – Take I-95 north to 520 West. Continue West and the road will merge with SR 50. Take SR 50 West to Alafaya Trail. Make a right turn on Alafaya Trail. Continue

for approximately 2 miles to University Blvd. Make a right turn on University Blvd. and you will be on campus. Make a left turn at the first light, Gemini Blvd West. Continue on Gemini Blvd West, bearing right, Gemini Blvd West will turn into Gemini Blvd North. Parking Garage H will be on your right at 12650 Gemini Blvd North. Classrooms I & II will be just beyond the Parking Garage H, <https://map.ucf.edu/printable/>.

From The East, Titusville and Daytona:

Option 1 – Take Highway 50 West to Alafaya Trail. Turn right on Alafaya Trail, go north for two miles. Turn right onto University Blvd. and you are on campus. Make a left turn at the first light, Gemini Blvd West. Continue on Gemini Blvd West, bearing right, Gemini Blvd West will turn into Gemini Blvd North. Parking Garage H will be on your right at 12650 Gemini Blvd North. Classrooms I & II will be just beyond the Parking Garage H, <https://map.ucf.edu/printable/>.

Option 2 – Take I-4 West to 417 South. Exit off of 417 at University Blvd. East. Continue on University Blvd East and it will take you to the main entrance of the campus. Make a left turn at the first light, Gemini Blvd West. Continue on Gemini Blvd West, bearing right, Gemini Blvd West will turn into Gemini Blvd North. Parking Garage H will be on your right at 12650 Gemini Blvd North. Classrooms I & II will be just beyond the Parking Garage H, <https://map.ucf.edu/printable/>.

From The Tampa Area: Take I-4 east to 408 east toward Titusville. Take 408 to 417 North toward Sanford. Exit off of 417 at University Blvd. East. Continue going on University Blvd and it will take you to the main entrance of the campus. Make a left turn at the first light, Gemini Blvd West. Continue on Gemini Blvd West, bearing right, Gemini Blvd West will turn into Gemini Blvd North. Parking Garage H will be on your right at 12650 Gemini Blvd North. Classrooms I & II will be just beyond the Parking Garage H, <https://map.ucf.edu/printable/>.

Car Rental: Hertz is the official car rental company for the meeting. To make a reservation accessing our special meeting rates online at www.hertz.com, click on the box "Enter a discount or promo code", and type in our convention number (CV): CV#04N30007. You can also call Hertz directly at 800-654-2240 (U.S. and Canada) or 1-405-749-4434 (other countries). At the time of reservation, the meeting rates will be automatically compared to other Hertz rates and you will be quoted the best comparable rate available.

For directions to campus, inquire at your rental car counter.

Local Transportation

Orlando and the University of Central Florida area are serviced by Linx bus service. Please find information including schedules and maps on the website: <http://www.go1ynx.com/maps-schedules/>.

Weather

Weather in September in Orlando is typically in the high 80s/low 90s Fahrenheit. Visitors should be prepared for inclement weather and check weather forecasts in advance of their arrival.

Social Networking

Attendees and speakers are encouraged to tweet about the meeting using the hashtags #AMSmtg.

Information for International Participants

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 US found at <https://travel.state.gov/content/travel/en.html>. If you need a preliminary conference invitation in order to secure a visa, please send your request to mac@ams.org.

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* Visa applicants are expected to provide evidence that they are intending to return to their country of residence. Therefore, applicants should provide proof of “binding” or sufficient ties to their home country or permanent residence abroad. This may include documentation of the following:

- family ties in home country or country of legal permanent residence
- property ownership
- bank accounts
- employment contract or statement from employer stating that the position will continue when the employee returns;

* Visa applications are more likely to be successful if done in a visitor's home country than in a third country;

* Applicants should present their entire trip itinerary, including travel to any countries other than the United States, at the time of their visa application;

* Include a letter of invitation from the meeting organizer or the U.S. host, specifying the subject, location and dates of the activity, and how travel and local expenses will be covered;

* If travel plans will depend on early approval of the visa application, specify this at the time of the application;

* Provide proof of professional scientific and/or educational status (students should provide a university transcript).

This list is not to be considered complete. Please visit the websites above for the most up-to-date information.

Riverside, California

University of California, Riverside

November 4–5, 2017

Saturday – Sunday

Meeting #1134

Western Section

Associate secretary: Michel L. Lapidus

Announcement issue of *Notices*: September 2017

Program first available on AMS website: September 21, 2017

Program issue of electronic *Notices*: To be announced

Issue of *Abstracts*: Volume 38, Issue 4

Deadlines

For organizers: Expired

For abstracts: September 12, 2017

The scientific information listed below may be dated. For the latest information, see www.ams.org/amsmtgs/sectional.html.

Invited Addresses

Paul Balmer, University of California, Los Angeles, *An invitation to tensor-triangular geometry.*

Pavel Etingof, Massachusetts Institute of Technology, *Double affine hecke algebras and their applications.*

Monica Vazirani, University of California, Davis, *Combinatorics, categorification, and crystals.*

Special Sessions

If you are volunteering to speak in a Special Session, you should send your abstract as early as possible via the abstract submission form found at <http://www.ams.org/cgi-bin/abstracts/abstract.pl>.

Advances in Operator Algebras (Code: SS 13A), **Michael Hartglass**, UC Riverside, Santa Clara University, and **Chenxu Wen** and **Feng Xu**, University of California, Riverside.

Algebraic Geometry (Code: SS 9A), **Humberto Diaz**, **Jose Gonzalez**, and **Ziv Ran**, University of California, Riverside.

Algebraic and Combinatorial Structures in Knot Theory (Code: SS 3A), **Patricia Cahn**, Smith College, and **Sam Nelson**, Claremont McKenna College.

Analysis and Geometry of Fractals (Code: SS 6A), **Erin Pearse**, California Polytechnic State University, **Goran Radunovic**, University of California, Riverside, and **Tim Cobler**, Fullerton College, California.

Applied Category Theory (Code: SS 4A), **John Baez**, University of California, Riverside.

Characteristics of a Successful Mathematics Gateway Program (Code: SS 12A), **Sara Lapan**, University of California, Riverside, **Jeff Meyer**, California State University, San Bernardino, and **David Weisbart**, University of California, Riverside.

MEETINGS & CONFERENCES

Combinatorial Aspects of the Polynomial Ring (Code: SS 1A), **Sami Assaf** and **Dominic Searles**, University of Southern California.

Combinatorial Representation Theory (Code: SS 5A), **Vyjayanthi Chari**, University of California, Riverside, and **Maria Monks Gillespie** and **Monica Vazirani**, University of California, Davis.

Conservation Laws, Nonlinear Waves and Applications (Code: SS 18A), **Geng Chen**, University of Kansas, **Tien Khai Nguyen**, North Carolina State University, and **Qingtian Zhang**, University of California, Davis.

Foundations of Quantum Theory (Code: SS 26A), **Jukka Virtanen**, University of California, Los Angeles, and **David Weisbart**, University of California, Riverside.

Generalized Geometry (Code: SS 16A), **Daniele Grandini**, Virginia State University, and **Yat-Sun Poon**, University of California, Riverside.

Geometric Analysis (Code: SS 24A), **Zhiqi Lu**, University of California, Irvine, **Jie Qing**, University of California, Santa Cruz, **Guofang Wei**, University of California, Santa Barbara, and **Qi Zhang**, University of California, Riverside.

Geometric Partial Differential Equations and their Applications (Code: SS 29A), **Po-Ning Chen**, University of California, Riverside, **Henri Roesch**, Duke University, and **Richard M. Schoen** and **Xiangwen Zhang**, University of California, Irvine.

Homotopy Theory (Code: SS 28A), **Jonathan Beardsley**, University of Washington.

Mathematical Fluid Mechanics (Code: SS 27A), **James P Kelliher** and **Lizheng Tao**, University of California, Riverside.

Model Theory (Code: SS 14A), **Artem Chernikov**, University of California, Los Angeles, and **Isaac Goldbring**, University of California, Irvine.

Non-Commutative Birational Geometry, Cluster Structures and Canonical Bases (Code: SS 19A), **Arkady Berenstein**, University of Oregon, Eugene, **Jacob Greenstein**, University of California, Riverside, and **Vladimir Retakh**, Rutgers University.

Nonlinear Elliptic Differential and Integral Equations (Code: SS 25A), **Mathew Gluck**, University of Oklahoma, and **John Villavert**, University of Texas, Rio Grande Valley.

Particle Methods and Nonlocal Partial Differential Equations (Code: SS 23A), **Katy Craig**, University of California, Santa Barbara, and **Franca Hoffman**, University of Cambridge.

Preparing Students for American Mathematical Competitions (Code: SS 7A), **Adam Glessner**, **Phillip Ramirez**, and **Bogdan D. Suceava**, California State University, Fullerton.

Random Matrices: Theory and Applications (Code: SS 20A), **Ioana Dumitriu**, University of Washington, and **Thomas Trogdon**, University of California, Irvine.

Random and Deterministic Dynamical Systems (Code: SS 15A), **Nicolai Haydn**, University of Southern California, Los Angeles.

Rational Cherednik Algebras and Categorification (Code: SS 8A), **Pavel Etingof**, Massachusetts Institute of Technology, and **Ivan Losev**, Northeastern University.

Research in Mathematics by Early Career Graduate Students (Code: SS 22A), **Michael Bishop**, **Stefaan Delcroix**, **Marat Markin**, **Khang Tran**, and **Oscar Vega**, California State University, Fresno.

Riemannian Manifolds of Non-Negative Sectional Curvature (Code: SS 21A), **Owen Dearnicott**, University of Melbourne, and **Fernando Galaz-Garcia**, Karlsruhe Institute of Technology.

Ring Theory and Related Topics (Celebrating the 75th Birthday of Lance W. Small) (Code: SS 2A), **Jason Bell**, University of Waterloo, **Ellen Kirkman**, Wake Forest University, and **Susan Montgomery**, University of Southern California.

Several Complex Variables (Code: SS 10A), **Bingyuan Liu** and **Bun Wong**, University of California, Riverside.

Stochastic and Multi-scale Models in Mathematical Biology, Analysis and Simulations (Code: SS 17A), **Mark Alber**, University of California, Riverside, and **Bjorn Birnir**, University of California, Santa Barbara.

Tensor Categories: Bridging Algebra, Topology, and Physics (Code: SS 11A), **Paul Bruillard**, Pacific Northwest National Laboratory, **Julia Plavnik**, Texas A&M University, and **Henry Tucker**, University of California, San Diego.

San Diego, California

San Diego Convention Center and San Diego Marriott Hotel and Marina

January 10–13, 2018

Wednesday – Saturday

Meeting #1135

Joint Mathematics Meetings, including the 124th Annual Meeting of the AMS, 101st Annual Meeting of the Mathematical Association of America (MAA), annual meetings of the Association for Women in Mathematics (AWM) and the National Association of Mathematicians (NAM), and the winter meeting of the Association of Symbolic Logic (ASL), with sessions contributed by the Society for Industrial and Applied Mathematics (SIAM).

Associate secretary: Georgia Benkart

Announcement issue of *Notices*: October 2017

Program first available on AMS website: To be announced

Program issue of electronic *Notices*: To be announced

Issue of *Abstracts*: Volume 39, Issue 1

Deadlines

For organizers: Expired

For abstracts: September 26, 2017

The scientific information listed below may be dated. For the latest information, see www.ams.org/amsmtg/national.html.

AMS Special Sessions

If you are volunteering to speak in a Special Session, you should send your abstract as early as pos-

sible via the abstract submission form found at <http://jointmathematicsmeetings.org/meetings/abstracts/abstract.pl?type=jmm>.

Some sessions are cosponsored with other organizations. These are noted within the parenthesis at the end of each listing, where applicable.

A Showcase of Number Theory at Liberal Arts Colleges (Code: SS 53A), **Adriana Salerno**, Bates College, and **Lola Thompson**, Oberlin College.

Accelerated Advances in Mathematical Fractional Programming (Code: SS 12A), **Ram Verma**, International Publications USA, and **Alexander Zaslavski**, Israel Institute of Technology.

Advances in Applications of Differential Equations to Disease Modeling (Code: SS 56A), **Libin Rong**, Oakland University, **Elissa Schwartz**, Washington State University, and **Naveen K. Vaidya**, University of Missouri - Kansas City.

Advances in Difference, Differential, and Dynamic Equations with Applications (Code: SS 20A), **Elvan Akin**, Missouri University S&T, and **John Davis**, Baylor University.

Advances in Operator Algebras (Code: SS 58A), **Marcel Bischoff**, Vanderbilt University, **Ian Charlesworth**, University of California, Los Angeles, **Brent Nelson**, University of California, Berkeley, and **Sarah Reznikoff**, Kansas State University.

Advances in Operator Theory, Operator Algebras, and Operator Semigroups (Code: SS 42A), **Asuman G. Aksoy**, Claremont McKenna College, **Zair Ibragimov**, California State University, Fullerton, **Marat Markin**, California State University, Fresno, and **Ilya Spitkovsky**, New York University, Abu Dhabi.

Algebraic, Analytic, and Geometric Aspects of Integrable Systems, Painlevé Equations, and Random Matrices (Code: SS 75A), **Vladimir Dragovic**, University of Texas at Dallas, **Anton Dzhamay**, University of Northern Colorado, and **Sevak Mkrtchyan**, University of Rochester.

Algebraic, Discrete, Topological and Stochastic Approaches to Modeling in Mathematical Biology (Code: SS 66A), **Olcay Akman**, Illinois State University, **Timothy D. Comar**, Benedictine University, **Daniel Hrozencik**, Chicago State University, and **Raina Robeva**, Sweet Briar College.

Alternative Proofs in Mathematical Practice (Code: SS 11A), **John W. Dawson, Jr.**, Pennsylvania State University, York.

Analysis of Fractional, Stochastic, and Hybrid Dynamic Systems (Code: SS 13A), **John R. Graef**, University of Tennessee at Chattanooga, **Gangaram S. Ladde**, University of South Florida, and **Aghalaya S. Vatsala**, University of Louisiana at Lafayette.

Analysis of Nonlinear Partial Differential Equations and Applications (Code: SS 85A), **Tarek M. Elgindi**, University of California, San Diego, and **Edriss S. Titi**, Texas A&M University and Weizmann Institute of Science.

Applied and Computational Combinatorics (Code: SS 55A), **Torin Greenwood**, Georgia Institute of Technology, and **Jay Pantone**, Dartmouth College.

Arithmetic Dynamics (Code: SS 41A), **Robert L. Benedetto**, Amherst College, **Benjamin Hutz**, Saint Louis

University, **Jamie Juul**, Amherst College, and **Bianca Thompson**, Harvey Mudd College.

Beyond Planarity: Crossing Numbers of Graphs (a Mathematics Research Communities Session) (Code: SS 15A), .

Bifurcations of Difference Equations and Discrete Dynamical Systems (Code: SS 61A), **Arzu Bilgin** and **Toufik Khyat**, University of Rhode Island.

Boundaries for Groups and Spaces (Code: SS 7A), **Joseph Maher**, CUNY College of Staten Island, and **Genevieve Walsh**, Tufts University.

Combinatorial Commutative Algebra and Polytopes (Code: SS 1A), **Robert David**, Michigan State University, and **Liam Solus**, KTH Royal Institute of Technology.

Combinatorics and Geometry (Code: SS 70A), **Federico Ardila**, San Francisco State University, **Anastasia Chavez**, MSRI and University of California, Davis, and **Laura Escobar**, University of Illinois Urbana Champaign.

Commutative Algebra in All Characteristics (Code: SS 67A), **Neil Epstein**, George Mason University, **Karl Schwede**, University of Utah, and **Janet Vassilev**, University of New Mexico.

Computational Combinatorics and Number Theory (Code: SS 76A), **Jeremy F. Alm**, Illinois College, and **David Andrews** and **Rob Hochberg**, University of Dallas.

Connections in Discrete Mathematics: Graphs, Hypergraphs, and Designs (Code: SS 80A), **Amin Bahmanian**, Illinois State University, and **Theodore Molla**, University Illinois Urbana-Champaign.

Differential Geometry (Code: SS 28A), **Vincent B. Bonini** and **Joseph E. Borzellino**, Cal Poly San Luis Obispo, **Bogdan D. Suceava**, California State University, Fullerton, and **Guofang Wei**, University of California, Santa Barbara.

Diophantine Approximation and Analytic Number Theory in Honor of Jeffrey Vaaler (Code: SS 29A), **Shabnam Akhtari**, University of Oregon, and **Lenny Fukshansky**, Claremont McKenna College.

Discrete Dynamical Systems and Applications (Code: SS 51A), **E. Cabral Balreira**, **Saber Elaydi**, and **Eddy Kwessi**, Trinity University.

Discrete Neural Networking and Applications (Code: SS 6A), **Murat Adivar**, Fayetteville State University, **Michael A. Radin**, Rochester Institute of Technology, and **Youssef Raffoul**, University of Dayton.

Dynamical Algebraic Combinatorics (Code: SS 68A), **James Propp**, University of Massachusetts, Lowell, **Tom Roby**, University of Connecticut, **Jessica Striker**, North Dakota State University, and **Nathan Williams**, University of California Santa Barbara.

Dynamical Systems: Smooth, Symbolic, and Measurable (a Mathematics Research Communities Session) (Code: SS 16A), .

Emergent Phenomena in Discrete Models (Code: SS 82A), **Dana Randall**, Georgia Institute of Technology, and **Andrea Richa**, Arizona State University.

Emerging Topics in Graphs and Matrices (Code: SS 60A), **Sudipta Mallik**, Northern Arizona University, **Keivan Hassani Monfared**, University of Calgary, and **Bryan Shader**, University of Wyoming.

MEETINGS & CONFERENCES

Ergodic Theory and Dynamical Systems (Code: SS 71A), **Julia Barnes**, Western Carolina University, **Rachel Bayless**, Agnes Scott College, **Emily Burkhead**, Duke University, and **Lorelei Koss**, Dickinson College.

Extremal Problems in Approximations and Geometric Function Theory (Code: SS 81A), **Ram Mohapatra**, University of Central Florida.

Financial Mathematics, Actuarial Sciences, and Related Fields (Code: SS 48A), **Albert Cohen**, Michigan State University, **Nguyet Nguyen**, Youngstown State University, **Oana Mocioalca**, Kent State University, and **Thomas Wakefield**, Youngstown State University.

Fractional Difference Operators and Their Application (Code: SS 59A), **Christopher S. Goodrich**, Creighton Preparatory School, and **Rajendra Dahal**, Coastal Carolina University.

Free Convexity and Free Analysis (Code: SS 21A), **J. William Helton**, University of California, San Diego, and **Igor Klep**, University of Auckland.

Geometric Analysis (Code: SS 86A), **Davi Maximo**, University of Pennsylvania, **Lu Wang**, University of Wisconsin-Madison, and **Xin Zhou**, University of California Santa Barbara.

Geometric Analysis and Geometric Flows (Code: SS 54A), **David Glickenstein**, University of Arizona, and **Brett Kotschwar**, Arizona State University.

History of Mathematics (Code: SS 50A), **Sloan Despeaux**, Western Carolina University, **Jemma Lorenat**, Pitzer College, **Clemency Montelle**, University of Canterbury, **Daniel Otero**, Xavier University, and **Adrian Rice**, Randolph-Macon College.

Homotopy Type Theory (a Mathematics Research Communities Session) (Code: SS 14A), .

If You Build It They Will Come: Presentations by Scholars in the National Alliance for Doctoral Studies in the Mathematical Sciences (Code: SS 25A), **Edray Goins** and **David Goldberg**, Purdue University, and **Phil Kutzko**, University of Iowa.

Interactions of Inverse Problems, Signal Processing, and Imaging (Code: SS 36A), **M. Zuhair Nashed**, University of Central Florida, **Willi Freeden**, University of Kaiserslautern, and **Otmar Scherzer**, University of Vienna.

Markov Chains, Markov Processes and Applications (Code: SS 27A), **Alan Krinik** and **Randall J. Swift**, California State Polytechnic University.

Mathematical Analysis and Nonlinear Partial Differential Equations (Code: SS 33A), **Hongjie Dong**, Brown University, **Peiyong Wang**, Wayne State University, and **Jiuyi Zhu**, Louisiana State University.

Mathematical Fluid Mechanics: Analysis and Applications (Code: SS 38A), **Zachary Bradshaw** and **Aseel Farhat**, University of Virginia.

Mathematical Information in the Digital Age of Science (Code: SS 83A), **Patrick Ion**, University of Michigan, **Olaf Teschke**, zbMath Berlin, and **Stephen Watt**, University of Waterloo.

Mathematical Methods in Genomics (Code: SS 4A), **David Koslicki**, Oregon State University.

Mathematical Modeling and Analysis of Infectious Diseases (Code: SS 65A), **Kazuo Yamazaki**, University of Rochester.

Mathematical Modeling of Natural Resources (Code: SS 39A), **Shandelle M. Henson**, Andrews University, and **Natali Hritonenko**, Prairie View A&M University.

Mathematical Modeling, Analysis and Applications in Population Biology (Code: SS 47A), **Yu Jin**, University of Nebraska-Lincoln, and **Ying Zhou**, Lafayette College.

Mathematical Problems in Ocean Wave Modeling and Fluid Mechanics (Code: SS 49A), **Christopher W. Curtis**, San Diego State University, and **Katie Oliveras**, Seattle University.

Mathematical Relativity and Geometric Analysis (Code: SS 72A), **James Dilts** and **Michael Holst**, University of California, San Diego.

Mathematics Research from the SMALL Undergraduate Research Program (Code: SS 73A), **Colin Adams**, **Frank Morgan**, and **Cesar E. Silva**, Williams College.

Mathematics of Gravitational Wave Science (Code: SS 40A), **Andrew Gillette** and **Nikki Holtzer**, University of Arizona.

Mathematics of Quantum Computing and Topological Phases of Matter (Code: SS 26A), **Paul Bruillard**, Pacific Northwest National Laboratory, **David Meyer**, University of California San Diego, and **Julia Plavnik**, Texas A&M University.

Modeling in Differential Equations - High School, Two-Year College, Four-Year Institution (Code: SS 22A), **Corban Harwood**, George Fox University, **William Skerbitz**, Wayzata High School, **Brian Winkel**, SIMIODE, and **Dina Yagodich**, Frederick Community College.

Multi-scale Modeling with PDEs in Computational Science and Engineering: Algorithms, Simulations, Analysis, and Applications (Code: SS 37A), **Salim M. Haidar**, Grand Valley State University.

Network Science (Code: SS 31A), **David Burstein**, Swarthmore College, **Franklin Kenter**, United States Naval Academy, and **Feng Shi**, University of North Carolina at Chapel Hill.

New Trends in Celestial Mechanics (Code: SS 10A), **Richard Montgomery**, University of California Santa Cruz, and **Zhifu Xie**, University of Southern Mississippi.

Nilpotent and Solvable Geometry (Code: SS 32A), **Michael Jablonski**, University of Oklahoma, **Megan Kerr**, Wellesley College, and **Tracy Payne**, Idaho State University.

Noncommutative Algebras and Noncommutative Invariant Theory (Code: SS 24A), **Ellen Kirkman**, Wake Forest University, and **James Zhang**, University of Washington.

Nonlinear Evolution Equations of Quantum Physics and Their Topological Solutions (Code: SS 34A), **Stephen Gustafson**, University of British Columbia, **Israel Michael Sigal**, University of Toronto, and **Avy Soffer**, Rutgers University.

Novel Methods of Enhancing Success in Mathematics Classes (Code: SS 35A), **Ellina Grigorieva**, Texas Womans University, and **Natali Hritonenko**, Prairie View A&M University.

Open and Accessible Problems for Undergraduate Research (Code: SS 18A), **Michael Dorff**, Brigham Young University, **Allison Henrich**, Seattle University, and **Nicholas Scoville**, Ursinus College.

Operators on Function Spaces in One and Several Variables (Code: SS 45A), **Catherine Bénéteau**, University of South Florida, and **Matthew Fleeman** and **Constanze Liaw**, Baylor University.

Orthogonal Polynomials and Applications (Code: SS 17A), **Abey Lopez-Garcia**, University of South Alabama, and **Xiang-Sheng Wang**, University of Louisiana at Lafayette.

Orthogonal Polynomials, Quantum Probability, and Stochastic Analysis (Code: SS 8A), **Julius N. Esunge**, University of Mary Washington, and **Aurel I. Stan**, Ohio State University.

Quantum Link Invariants, Khovanov Homology, and Low-dimensional Manifolds (Code: SS 64A), **Diana Hubbard**, University of Michigan, and **Christine Ruey Shan Lee**, University of Texas at Austin.

Quaternions (Code: SS 23A), **Terrence Blackman**, Medgar Evers College, City University of New York, and **Johannes Familton** and **Chris McCarthy**, Borough of Manhattan Community College, City University of New York.

Recent Trends in Analysis of Numerical Methods of Partial Differential Equations (Code: SS 2A), **Sara Pollock**, Wright State University, and **Leo Rebholz**, Clemson University.

Research by Postdocs of the Alliance for Diversity in Mathematics (Code: SS 62A), **Aloysius Helminck**, University of Hawaii - Manoa, and **Michael Young**, Iowa State University.

Research from the Rocky Mountain-Great Plains Graduate Research Workshop in Combinatorics (Code: SS 69A), **Michael Ferrara**, University of Colorado Denver, **Leslie Hogben**, Iowa State University, **Paul Horn**, University of Denver, and **Tyrrell McAllister**, University of Wyoming.

Research in Mathematics by Early Career Graduate Students (Code: SS 46A), **Michael Bishop**, **Marat Markin**, **Khang Tran**, and **Oscar Vega**, California State University, Fresno.

Research in Mathematics by Undergraduates and Students in Post-Baccalaureate Programs (Code: SS 19A), **Tamas Forgacs**, CSU Fresno, **Darren A. Narayan**, Rochester Institute of Technology, and **Mark David Ward**, Purdue University (AMS-MAA-SIAM).

Set Theory, Logic and Ramsey Theory (Code: SS 5A), **Andrés Caicedo**, Mathematical Reviews, and **José Mijares**, University of Colorado, Denver (AMS-ASL).

Set-theoretic Topology (Dedicated to Jack Porter in honor of 50 years of dedicated research) (Code: SS 43A), **Nathan Carlson**, California Lutheran University, **Jila Niknejad**, University of Kansas, and **Lynne Yengulalp**, University of Dayton.

Special Functions and Combinatorics (in honor of Dennis Stanton's 65th birthday) (Code: SS 9A), **Susanna Fishel**, Arizona State University, **Mourad Ismail**, University of Central Florida, and **Vic Reiner**, University of Minnesota.

Spectral Theory, Disorder and Quantum Physics (Code: SS 57A), **Rajinder Mavi** and **Jeffery Schenker**, Michigan State University.

Stochastic Processes, Stochastic Optimization and Control, Numerics and Applications (Code: SS 78A), **Hongwei Mei**, University of Central Florida, **Zhixin Yang** and **Quan Yuan**, Ball State University, and **Guangliang Zhao**, GE Global Research.

Strengthening Infrastructures to Increase Capacity Around K-20 Mathematics (Code: SS 74A), **Brianna Donaldson**, American Institute of Mathematics, and **William Jaco** and **Michael Oehrtman**, Oklahoma State University.

Structure and Representations of Hopf Algebras: a session in honor of Susan Montgomery (Code: SS 30A), **Siu-Hung Ng**, Louisiana State University, and **Lance Small** and **Henry Tucker**, University of California, San Diego.

Theory, Practice, and Applications of Graph Clustering (Code: SS 63A), **David Gleich**, Purdue University, and **Jennifer Webster** and **Stephen J. Young**, Pacific Northwest National Laboratory.

Topological Data Analysis (Code: SS 84A), **Henry Adams**, Colorado State University, **Gunnar Carlsson**, Stanford University, and **Mikael Vejdemo-Johansson**, CUNY College of Staten Island.

Topological Graph Theory: Structure and Symmetry (Code: SS 3A), **Jonathan L. Gross**, Columbia University, and **Thomas W. Tucker**, Colgate University.

Visualization in Mathematics: Perspectives of Mathematicians and Mathematics Educators (Code: SS 52A), **Karen Allen Keene**, North Carolina State University, and **Mile Krajcevski**, University of South Florida.

Women in Symplectic and Contact Geometry and Topology (Code: SS 44A), **Bahar Acu**, Northwestern University, **Ziva Myer**, Duke University, and **Yu Pan**, Massachusetts Institute of Technology (AMS-AWM).

Columbus, Ohio

Ohio State University

March 17–18, 2018

Saturday – Sunday

Meeting #1136

Central Section

Associate secretary: Georgia Benkart

Announcement issue of *Notices*: To be announced

Program first available on AMS website: January 31, 2018

Program issue of electronic *Notices*: To be announced

Issue of *Abstracts*: Volume 39, Issue 2

Deadlines

For organizers: August 15, 2017

For abstracts: January 22, 2018

The scientific information listed below may be dated. For the latest information, see www.ams.org/amsmtg/section1.html.

Invited Addresses

Aaron Brown, University of Chicago, *Title to be announced*.

Tullia Dymarz, University of Wisconsin-Madison, *Title to be announced*.

June Huh, Institute for Advanced Study, *Title to be announced*.

Special Sessions

If you are volunteering to speak in a Special Session, you should send your abstract as early as possible via the abstract submission form found at <http://www.ams.org/cgi-bin/abstracts/abstract.pl>.

Algebraic Combinatorics: Association Schemes, Finite Geometry, and Related Topics (Code: SS 15A), **Sung Y. Song**, Iowa State University, and **Bangteng Xu**, Eastern Kentucky University.

Algebraic and Combinatorial Aspects of Tropical Geometry (Code: SS 11A), **Maria Angelica Cueto**, Ohio State University, **Yoav Len**, University of Waterloo, and **Martin Ulirsch**, University of Michigan.

Algebraic, Combinatorial, and Quantum Invariants of Knots and Manifolds (Code: SS 6A), **Cody Armond**, Ohio State University, Mansfield, **Micah Chrisman**, Monmouth University, and **Heather Dye**, McKendree University.

Coherent Structures in Interfacial Flows (Code: SS 14A), **Benjamin Akers** and **Jonah Reeger**, Air Force Institute of Technology.

Differential Equations and Applications (Code: SS 8A), **King-Yeung Lam** and **Yuan Lou**, Ohio State University, and **Qiliang Wu**, Michigan State University.

Geometric Methods in Shape Analysis (Code: SS 10A), **Sebastian Kurtek** and **Tom Needham**, Ohio State University.

Graph Theory (Code: SS 5A), **John Maharry**, Ohio State University, **Yue Zhao**, University of Central Florida, and **Xiangqian Zhou**, Wright State University.

Homological Algebra (Code: SS 4A), **Ela Celikbas** and **Olgur Celikbas**, West Virginia University.

Multiplicative Ideal Theory and Factorization (in honor of Tom Lucas retirement) (Code: SS 7A), **Evan Houston**, University of North Carolina, Charlotte, and **Alan Loper**, Ohio State University.

Nonlinear Evolution Equations (Code: SS 9A), **John Holmes** and **Feride Tiglay**, Ohio State University.

Probability in Convexity and Convexity in Probability (Code: SS 2A), **Elizabeth Meckes**, **Mark Meckes**, and **Elisabeth Werner**, Case Western Reserve University.

Quantum Symmetries (Code: SS 3A), **David Penneys**, The Ohio State University, and **Julia Plavnik**, Texas A & M University.

Recent Advances in Approximation Theory and Operator Theory (Code: SS 1A), **Jan Lang** and **Paul Nevai**, The Ohio State University.

Recent Development of Nonlinear Geometric PDEs (Code: SS 12A), **Bo Guan**, Ohio State University, **Qun Li**, Wright State University, **Xiangwen Zhang**, University of California, Irvine, and **Fangyang Zheng**, Ohio State University.

Several Complex Variables (Code: SS 13A), **Liwei Chen**, **Kenneth Koenig**, and **Liz Vivas**, Ohio State University.

Portland, Oregon

Portland State University

April 14–15, 2018

Saturday – Sunday

Meeting #1137

Western Section

Associate secretary: Michel L. Lapidus

Announcement issue of *Notices*: To be announced

Program first available on AMS website: February 15, 2018

Program issue of electronic *Notices*: To be announced

Issue of *Abstracts*: Volume 39, Issue 2

Deadlines

For organizers: September 14, 2017

For abstracts: February 6, 2018

The scientific information listed below may be dated. For the latest information, see www.ams.org/amsmtgs/sectional.html.

Invited Addresses

Sándor Kovács, University of Washington, Seattle, *Title to be announced*.

Elena Mantovan, California Institute of Technology, *Title to be announced*.

Dimitri Shlyakhtenko, University of California, Los Angeles, *Title to be announced*.

Special Sessions

If you are volunteering to speak in a Special Session, you should send your abstract as early as possible via the abstract submission form found at <http://www.ams.org/cgi-bin/abstracts/abstract.pl>.

Inverse Problems (Code: SS 2A), **Hanna Makaruk**, Los Alamos National Laboratory (LANL), and **Robert Owczynek**, University of New Mexico, Albuquerque & Los Alamos.

Pattern Formation in Crowds, Flocks, and Traffic (Code: SS 1A), **J. J. P. Veerman**, Portland State University, **Alethea Barbaro**, Case Western Reserve University, and **Bassam Bamieh**, UC Santa Barbara.

Nashville, Tennessee

Vanderbilt University

April 14–15, 2018

Saturday – Sunday

Meeting #1138

Southeastern Section

Associate secretary: Brian D. Boe

Announcement issue of *Notices*: To be announced

Program first available on AMS website: February 22, 2018

Program issue of electronic *Notices*: To be announced

Issue of *Abstracts*: Volume 39, Issue 2

Deadlines

For organizers: September 14, 2017

For abstracts: February 13, 2018

*The scientific information listed below may be dated.
For the latest information, see www.ams.org/amsmtg/sectional.html.*

Invited Addresses

Andrea Bertozzi, University of California Los Angeles, *Title to be announced* (Erdős Memorial Lecture).

J. M. Landsberg, Texas A & M University, *Title to be announced*.

Jennifer Morse, University of Virginia, *Title to be announced*.

Kirsten Wickelgren, Georgia Institute of Technology, *Title to be announced*.

Special Sessions

If you are volunteering to speak in a Special Session, you should send your abstract as early as possible via the abstract submission form found at <http://www.ams.org/cgi-bin/abstracts/abstract.pl>.

Difference Equations and Applications (Code: SS 2A), **Michael A. Radin**, Rochester Institute of Technology, and **Youssef Raffoul**, University of Dayton, Ohio.

Quantization for Probability Distributions (Code: SS 1A), **Mrinal Kanti Roychowdhury**, University of Texas Rio Grande Valley.

Selected Topics in Graph Theory (Code: SS 3A), **Songling Shan**, Vanderbilt University, **David Chris Stephens**, Middle Tennessee State University, and **Dong Ye**, Middle Tennessee State University.

Boston, Massachusetts

Northeastern University

April 21–22, 2018

Saturday – Sunday

Meeting #1139

Eastern Section

Associate secretary: Steven H. Weintraub

Announcement issue of *Notices*: To be announced

Program first available on AMS website: March 1, 2018

Program issue of electronic *Notices*: To be announced

Issue of *Abstracts*: Volume 39, Issue 2

Deadlines

For organizers: September 21, 2017

For abstracts: February 20, 2018

*The scientific information listed below may be dated.
For the latest information, see www.ams.org/amsmtg/sectional.html.*

Invited Addresses

Jian Ding, University of Chicago, *Title to be announced*.

Edward Frenkel, University of California, Berkeley, *Title to be announced* (Einstein Public Lecture in Mathematics).

Valentino Tosatti, Northwestern University, *Title to be announced*.

Maryna Viazovska, École Polytechnique Fédérale de Lausanne, *Title to be announced*.

Special Sessions

If you are volunteering to speak in a Special Session, you should send your abstract as early as possible via the abstract submission form found at <http://www.ams.org/cgi-bin/abstracts/abstract.pl>.

Analysis and Geometry in Non-smooth Spaces (Code: SS 5A), **Nageswari Shanmugalingam** and **Gareth Speight**, University of Cincinnati.

Arithmetic Dynamics (Code: SS 1A), **Jacqueline M. Anderson**, Bridgewater State University, **Robert Benedetto**, Amherst College, and **Joseph H. Silverman**, Brown University.

Arrangements of Hypersurfaces (Code: SS 2A), **Graham Denham**, University of Western Ontario, and **Alexander I. Suci**, Northeastern University.

Ergodic Theory and Dynamics in Combinatorial Number Theory (Code: SS 7A), **Stanley Eigen**, Northeastern University, **Daniel Glasscock**, Ohio State University, and **Vidhu Prasad**, University of Massachusetts, Lowell.

Facets of Symplectic Geometry and Topology (Code: SS 3A), **Tara Holm**, Cornell University, **Jo Nelson**, Columbia

University, and **Jonathan Weitsman**, Northeastern University.

Geometry of Moduli Spaces (Code: SS 10A), **Ana-Marie Castravet** and **Emanuele Macrì**, Northeastern University, **Benjamin Schmidt**, University of Texas, and **Xiaolei Zhao**, Northeastern University.

Homological Commutative Algebra (Code: SS 11A), **Sean Sather-Wagstaff**, Clemson University, and **Oana Veliche**, Northeastern University.

Hopf Algebras, Tensor Categories, and Homological Algebra (Code: SS 8A), **Cris Negron**, Massachusetts Institute of Technology, **Julia Plavnik**, Texas A&M, and **Sarah Witherspoon**, Texas A&M University.

New Developments in Inverse Problems and Imaging (Code: SS 9A), **Ru-Yu Lai**, University of Minnesota, and **Ting Zhou**, Northeastern University.

Polytopes and Discrete Geometry (Code: SS 6A), **Gabriel Cunningham**, University of Massachusetts, Boston, **Mark Mixer**, Wentworth Institute of Technology, and **Egon Schulte**, Northeastern University.

Singularities of Spaces and Maps (Code: SS 4A), **Terence Gaffney** and **David Massey**, Northeastern University.

Shanghai, Peoples' Republic of China

Fudan University

June 11–14, 2018

Monday – Thursday

Meeting #1140

Associate secretary: Steven H. Weintraub
Announcement issue of *Notices*: To be announced
Program first available on AMS website: To be announced
Program issue of electronic *Notices*: To be announced
Issue of *Abstracts*: To be announced

Deadlines

For organizers: To be announced
For abstracts: To be announced

The scientific information listed below may be dated. For the latest information, see www.ams.org/amsmtgs/internmtgs.html.

Invited Addresses

Yu-Hong Dai, Academy of Mathematics and System Sciences, *Title to be announced.*

Kenneth A. Ribet, University of California, Berkeley, *Title to be announced.*

Richard M. Schoen, University of California, Irvine, *Title to be announced.*

Sijue Wu, University of Michigan, *Title to be announced.*

Chenyang Xu, Peking University, *Title to be announced.*

Jiangong You, Nankai University, *Title to be announced.*

Newark, Delaware

University of Delaware

September 29–30, 2018

Saturday – Sunday

Meeting #1141

Eastern Section
Associate secretary: Steven H. Weintraub
Announcement issue of *Notices*: To be announced
Program first available on AMS website: August 9, 2018
Program issue of electronic *Notices*: To be announced
Issue of *Abstracts*: Volume 39, Issue 3

Deadlines

For organizers: February 28, 2018
For abstracts: July 31, 2018

Invited Addresses

Leslie Greengard, New York University, *Title to be announced.*

Elisenda Grigsby, Boston College, *Title to be announced.*

Davesh Maulik, Massachusetts Institute of Technology, *Title to be announced.*

Fayetteville, Arkansas

University of Arkansas

October 6–7, 2018

Saturday – Sunday

Meeting #1142

Southeastern Section
Associate secretary: Brian D. Boe
Announcement issue of *Notices*: To be announced
Program first available on AMS website: August 16, 2018
Program issue of electronic *Notices*: To be announced
Issue of *Abstracts*: Volume 39, Issue 3

Deadlines

For organizers: March 6, 2018
For abstracts: August 7, 2018

The scientific information listed below may be dated. For the latest information, see www.ams.org/amsmtgs/sectional.html.

Invited Addresses

Mihalis Dafermos, Princeton University, *Title to be announced.*

Jonathan Hauenstein, University of Notre Dame, *Title to be announced.*

Kathryn Mann, University of California Berkeley, *Title to be announced.*

Ann Arbor, Michigan

University of Michigan, Ann Arbor

October 20–21, 2018

Saturday – Sunday

Meeting #1143

Central Section

Associate secretary: Georgia Benkart

Announcement issue of *Notices*: To be announced

Program first available on AMS website: August 30, 2018

Program issue of electronic *Notices*: To be announced

Issue of *Abstracts*: Volume 39, Issue 4

Deadlines

For organizers: March 20, 2018

For abstracts: August 21, 2018

The scientific information listed below may be dated. For the latest information, see www.ams.org/amsmtgs/sectional.html.

Invited Addresses

Elena Fuchs, University of Illinois Urbana-Champaign, *Title to be announced.*

Andrew Putman, University of Notre Dame, *Title to be announced.*

Charles Smart, University of Chicago, *Title to be announced.*

Special Sessions

If you are volunteering to speak in a Special Session, you should send your abstract as early as possible via the abstract submission form found at <http://www.ams.org/cgi-bin/abstracts/abstract.pl>.

Geometry of Submanifolds, in Honor of Bang-Yen Chen's 75th Birthday (Code: SS 1A), **Alfonso Carriazo**, University of Sevilla, **Ivko Dimitric**, Penn State Fayette, **Yun Myung Oh**, Andrews University, **Bogdan D. Suceava**, California State University, Fullerton, **Joeri Van der Veken**, University of Leuven, and **Luc Vrancken**, Universite de Valenciennes.

San Francisco, California

San Francisco State University

October 27–28, 2018

Saturday – Sunday

Meeting #1144

Western Section

Associate secretary: Michel L. Lapidus

Announcement issue of *Notices*: August 2018

Program first available on AMS website: September 6, 2018

Program issue of electronic *Notices*: To be announced

Issue of *Abstracts*: Volume 39, Issue 4

Deadlines

For organizers: March 27, 2018

For abstracts: August 28, 2018

The scientific information listed below may be dated. For the latest information, see www.ams.org/amsmtgs/sectional.html.

Invited Addresses

Srikanth B. Iyengar, University of Utah, *Title to be announced.*

Sarah Witherspoon, Texas A&M University, *Title to be announced.*

Abdul-Aziz Yakubu, Howard University, *Title to be announced.*

Baltimore, Maryland

Baltimore Convention Center, Hilton Baltimore, and Baltimore Marriott Inner Harbor Hotel

January 16–19, 2019

Wednesday – Saturday

Joint Mathematics Meetings, including the 125th Annual Meeting of the AMS, 102nd Annual Meeting of the Mathematical Association of America (MAA), annual meetings of the Association for Women in Mathematics (AWM) and the National Association of Mathematicians (NAM), and the winter meeting of the Association of Symbolic Logic (ASL), with sessions contributed by the Society for Industrial and Applied Mathematics (SIAM).

Associate secretary: Steven H. Weintraub

Announcement issue of *Notices*: October 2018

Program first available on AMS website: To be announced

Program issue of electronic *Notices*: To be announced

Issue of *Abstracts*: To be announced

Deadlines

For organizers: April 2, 2018
 For abstracts: To be announced

Auburn, Alabama

Auburn University

March 15–17, 2019

Friday – Sunday

Southeastern Section

Associate secretary: Brian D. Boe

Announcement issue of *Notices*: To be announced

Program first available on AMS website: To be announced

Program issue of electronic *Notices*: To be announced

Issue of *Abstracts*: To be announced

Deadlines

For organizers: To be announced
 For abstracts: To be announced

Honolulu, Hawaii

University of Hawaii at Manoa

March 22–24, 2019

Friday – Sunday

Central Section

Associate secretaries: Georgia Benkart and Michel L. Lapidus

Announcement issue of *Notices*: To be announced

Program first available on AMS website: To be announced

Program issue of electronic *Notices*: To be announced

Issue of *Abstracts*: To be announced

Deadlines

For organizers: May 15, 2018
 For abstracts: January 22, 2019

Denver, Colorado

Colorado Convention Center

January 15–18, 2020

Wednesday – Saturday

Joint Mathematics Meetings, including the 126th Annual Meeting of the AMS, 103rd Annual Meeting of the Mathematical Association of America (MAA), annual meetings of the Association for Women in Mathematics (AWM) and the National Association of Mathematicians (NAM), and the winter meeting of the Association of Symbolic Logic (ASL), with sessions contributed by the Society for Industrial and Applied Mathematics (SIAM)

Associate secretary: Michel L. Lapidus

Announcement issue of *Notices*: To be announced

Program first available on AMS website: November 1, 2019
 Program issue of electronic *Notices*: To be announced
 Issue of *Abstracts*: To be announced

Deadlines

For organizers: April 1, 2019
 For abstracts: To be announced

Washington, District of Columbia

Walter E. Washington Convention Center

January 6–9, 2021

Wednesday – Saturday

Joint Mathematics Meetings, including the 127th Annual Meeting of the AMS, 104th Annual Meeting of the Mathematical Association of America (MAA), annual meetings of the Association for Women in Mathematics (AWM) and the National Association of Mathematicians (NAM), and the winter meeting of the Association of Symbolic Logic (ASL), with sessions contributed by the Society for Industrial and Applied Mathematics (SIAM).

Associate secretary: Brian D. Boe

Announcement issue of *Notices*: October 2020

Program first available on AMS website: November 1, 2020

Program issue of electronic *Notices*: To be announced

Issue of *Abstracts*: To be announced

Deadlines

For organizers: April 1, 2020
 For abstracts: To be announced