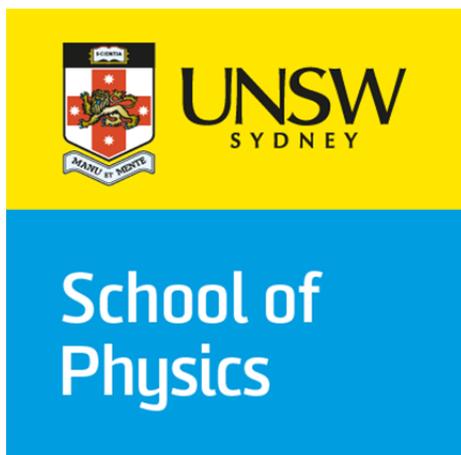


Gordon Godfrey Workshop on Spins and Strong Electron Correlations

30th October – 3rd November
2017

Sponsors:



Gordon Godfrey Bequest



Gordon Hay Godfrey

Acting Head, School of Applied Physics 1951-1952

Gordon Godfrey was born in Sydney in 1892, and studied at Fort Street High School and the University of Sydney. He took his BA with first class honours in 1914, and his MA with first class honours and the University Medal (the second ever awarded) in 1919. He graduated with his BSc in 1922.

Godfrey entered the NSW teaching service in 1916, and was an assistant master at both Sydney Boys High School and Parramatta High School. From 1921 he was head teacher of physics, and later lecturer-in-charge of the Department of Physics, at the Sydney Technical College. At the college he developed the new diploma course in optometry and then created the diploma course in physics. In 1951 he was appointed an Associate Professor of the NSW University of Technology (later renamed the University of New South Wales) - he was the first representative of theoretical physics at the University.

Professor Godfrey served as Acting Head of the School of Applied Physics during 1951 and 1952, until Professor Milner commenced his position as Head of School. Professor Godfrey remained Deputy Head of School until his retirement in 1958, and Professor Milner claimed “no Head of School could have had a more-loyal or more-helpful deputy.” After his retirement, he continued to teach in the School of Physics until well into the 1970’s. He held an appointment for a time as Honorary Visiting Professor at UNSW, and until his death that of Honorary Associate of the School of Physics.

Professor Godfrey was a highly engaged and sincere teacher during his entire working life – a career that spanned nearly 60 years. In recognition of his services to optometrical education he was made an Honorary Life Fellow of the Institute of Optometrists (NSW).

Gordon Godfrey also made several contributions in research. His MA thesis, written in 1919, was probably the first paper written in Australia on special relativity. He also published work on atmospheric radio propagation and on the reflectance characteristics of multilayer coatings. After his retirement he turned to a long standing research interest in the presentation of quantum mechanics, especially the uncertainty principle.

Following the death of Professor Gordon Godfrey in 1979, and his wife Mrs Mabel Godfrey in 1980, the Godfrey Bequest was established. This gift funds a number of initiatives supporting theoretical physics at UNSW, primarily by providing financial support to assist in the travel and accommodation expenses of academic visitors to the University, but also by funding undergraduate prizes, postgraduate scholarships, and a biannual workshop.

Drinks and get together at the Sydney Opera Bar, Wednesday,

1st of November 2017, 6.00pm – 8.00pm

Location: Lower Concourse Level, Sydney Opera House, Circular Quay. Head for the Opera House and make your way down towards the water (via the escalators or stairs) to the Lower Concourse Level.



Mobile Phone contacts: 04 2127 3772 (Oleg) / 04 3456 5595 (Alex)/ 0400481298 (Cecilia)

30th October– 3rd November 2017

Gordon Godfrey Workshop

SYDNEY: magic moments

Explore, discover and enjoy the best places in Sydney

Walk from Coogee Beach to Bondi Beach

Directions: Coogee is the closest beach to University of NSW (25 minutes). The main Coogee Bay Road runs directly to the beach.

Magic moment: The coastal walk north from Coogee Beach to Gordon Bay, Clovelly, and on to Bronte beach, Tamarama and Bondi beach. Walking time is around 1.5 hours. The total length of the walk is approximately 4 km. **Important note:** from 19th of October to 5th of November enjoy annual *Sculpture by the Sea* exhibition along the coastal track between Tamarama Beach and Bondi Beach.

Map of the walk - <http://sculpturebythesea.com/bondi-2/getting-there/>



Opera House and Royal Botanic Gardens

Directions: You can walk to the Sydney Opera House from the east side of Circular Quay (easy walking distance from any place in the city centre). Buses 392, 396, 397, 399 go from UNSW.

The Royal Botanic Gardens lies to the east of the Opera House. The park is free, open daily, 7am – 5.30pm.

Magic moment: **Royal Botanic Gardens:** Enjoy a view at Mrs Macquarie's Point with the panorama of the city, harbour, Opera House and Harbour Bridge. The Royal Botanic Gardens is one of the treasures of Sydney. The collection of plants and trees is extraordinary. Visit the Rose Garden, Herb Garden, Rare and Threatened Plants, Oriental Garden, Tropical Centre.

Website <https://www.rbgsyd.nsw.gov.au/visit>

Magic moment: **Sydney Opera House:**

Option A: Check Sydney Opera House website for some performances.

<http://www.sydneyoperahouse.com/whatson/index.aspx>

Option B: The Sydney Opera House tour (Advanced bookings are available. Advanced bookings are recommended. Cost - \$37.00) Booking online: <https://www.sydney.com/things-to-do/tours/sydney-opera-house-tours>

Aquarium and Darling Harbour

Directions: Darling Harbour is just to the west of the city centre, 15 mins walk. You can walk there from Market Street or George Street across Pyrmont Bridge or ferry service from Circular Quay.

Magic moment: The collection of major attractions: Sydney Aquarium, National Maritime Museum, Powerhouse Museum, Madame Tussauds Sydney, Darling Walk, Harbourside Shopping Centre, Star City Casino, Chinese Garden and Cockle Bay Wharf. Nice panorama view to the city centre.

The Rocks, Harbour Bridge & Observatory Hill

Directions: The Rocks lies on the western side of Circular Quay. It is easy walking distance from the city centre as well. The best approach is on foot via George Street.

Magic moment: Strolling along the boardwalk at Campbell's Cove with its panorama of historic buildings, Harbour Bridge, Opera House and Harbour

Taronga Zoo

Directions: Taronga Zoo is in Mosman suburb, best reached by a delightful 12-minute ferry ride from Wharf at Circular Quay with breathtaking views of Sydney Harbour and free shows and keeper talks throughout the day. The Zoo is open daily, 9.30am – 4.30pm. Sydney Ferries offers a Zoo pass which includes the ferry ride and zoo admission.

Magic moment: Having your picture taken next to kangaroos and a koala. You can spend here the whole day or at least 4 hours.

Website: <https://taronga.org.au/taronga-zoo>

Art Gallery of NSW

Directions: The Art Gallery of NSW is on Art Gallery Road, The Domain. It is a pleasant 15-minute walk from the city centre or Circular Quay. The gallery is open daily, 10am-5pm, entry free. On Wednesdays until 10pm. There are daily tours and special exhibitions.

Magic moment: Viewing the wonderful collection of 19th and 20th century Australian art. The collection of Aboriginal paintings is a must see. The Domain is ideal for a relaxing walk.

Website: <http://www.artgallery.nsw.gov.au>

Manly beach and Manly walks

Directions: Manly is 30 mins by ferry from Circular Quay. The ferry runs regularly, 6.00am – 9.30 pm. There are several scenic walks in Manly.

Magic moment: It is a classic Sydney experience. Walk along Marine Parade to Fairy Bower and Shelly Beach from the southern end of Manly Beach. It takes 45 mins to the top scenic lookout.

Also you can do the Manly to Spit walk or part of it. The entire walk is 10 km long and takes three to four hours one way.

Website for Manly walking tracks <http://www.manly.nsw.gov.au/attractions/walking-tracks/manly-scenic-walkway/>

Centrepont, Queen Victoria Building & Hyde Park

Directions: Centrepont, Queen Victoria Building & Hyde Park located in the centre of the city.

Magic moment: Take in the panoramic views of Sydney from the Observation level of the tower (250 metres above the city). The tower is open daily, 9.00am – 8.30 pm.

Website: <http://www.sydneytowereye.com.au/explore/about-sydney-tower/>

Shopping hours of the Queen Victoria Building is 9am – 6pm (Sunday 11am-5pm). You must see the Great Australian Clock in the northern end of the building, the world's largest animated clock, with 100 scenes of Australian history. Hyde Park offers a calm and peaceful walk around fig trees in the centre of the city.

Website: <https://www.qvb.com.au/>

Bondi Beach

Directions: Located just 8km from the Sydney centre, Bondi is one of the city's busiest beaches, best reached by bus or walking.

Bondi Beach is an iconic Sydney attraction with golden sands, turquoise waters and perfect waves, there is plenty to do beyond the surf. Fine dining, eclectic shopping markets, gorgeous coastal walks and a buzzing nightlife can all be experienced in Bondi.

Website: <http://www.sydney.com/destinations/sydney/sydney-east/bondi>

Centennial Park

Directions: Walking distance from UNSW to Centennial Park is 20 mins.

Magic moment: Find a wide variety of activities in Centennial Park: birds, cycling, gardens, picnicking, natural ponds, jogging, running.

Watson Bay & South Head

Directions: Watson Bay lies on South Head. Buses 324 and 325 operate from Circular Quay.

Magic moment: The beautiful walk from Camp Cove past Lady Jane Beach to Hornby Lighthouse at South Head. Walking time is around 1 hour. Enjoy a long lunch at Doyle's seafood restaurant on the Beach at Watson Bay.

Cronulla beach

Cronulla, in the Sutherland Shire on Sydney's southern coast, can be reached by train (travelling time from Central station is 45 min.), meaning you can visit without the headache of finding a carpark. It is a very nice beach and it has pleasant walk along the coast - 1.5 hours.

Website <http://www.sydney.com/destinations/sydney/sydney-south/cronulla/attractions/cronulla-beach>

Circular Quay & Parramatta river cruise

Directions: Circular Quay is the main hub for harbour ferries and a centre for buses and trains. It is pleasant walking distance from Circular Quay to the Opera House, The Rocks and city centre.

Magic moment: Take Parramatta river cruise and enjoy sitting on the back of a ferry. Day or night, the view is sensational. The ferry is regular and pulls out of Circular Quay from 9.00am till 4.30pm (latest from Parramatta). Please check timetable. Travelling time is 1.5 hours one way.

Website: <http://www.beyondthewharf.com.au/route/parramatta-river/>

Kamay Botany Bay National Park

Visit the place to see Captain Cook's landing place at Kurnell. The heritage-listed site is an important place in Australia's history. The Kurnell precinct of Kamay Botany Bay National park is open at 7am and gates are locked and the park is closed after 7:30pm.

Directions: by car only.

Website <http://www.nationalparks.nsw.gov.au/things-to-do/historic-buildings-places/Captain-Cooks-Landing-Place>

Royal National Park Coast Walk

Directions: Royal National Park lies south of Sydney. Train to Cronulla, 35 km south of Sydney city. There is an hourly ferry from Gunnamatta Bay in Cronulla to Bundeena.

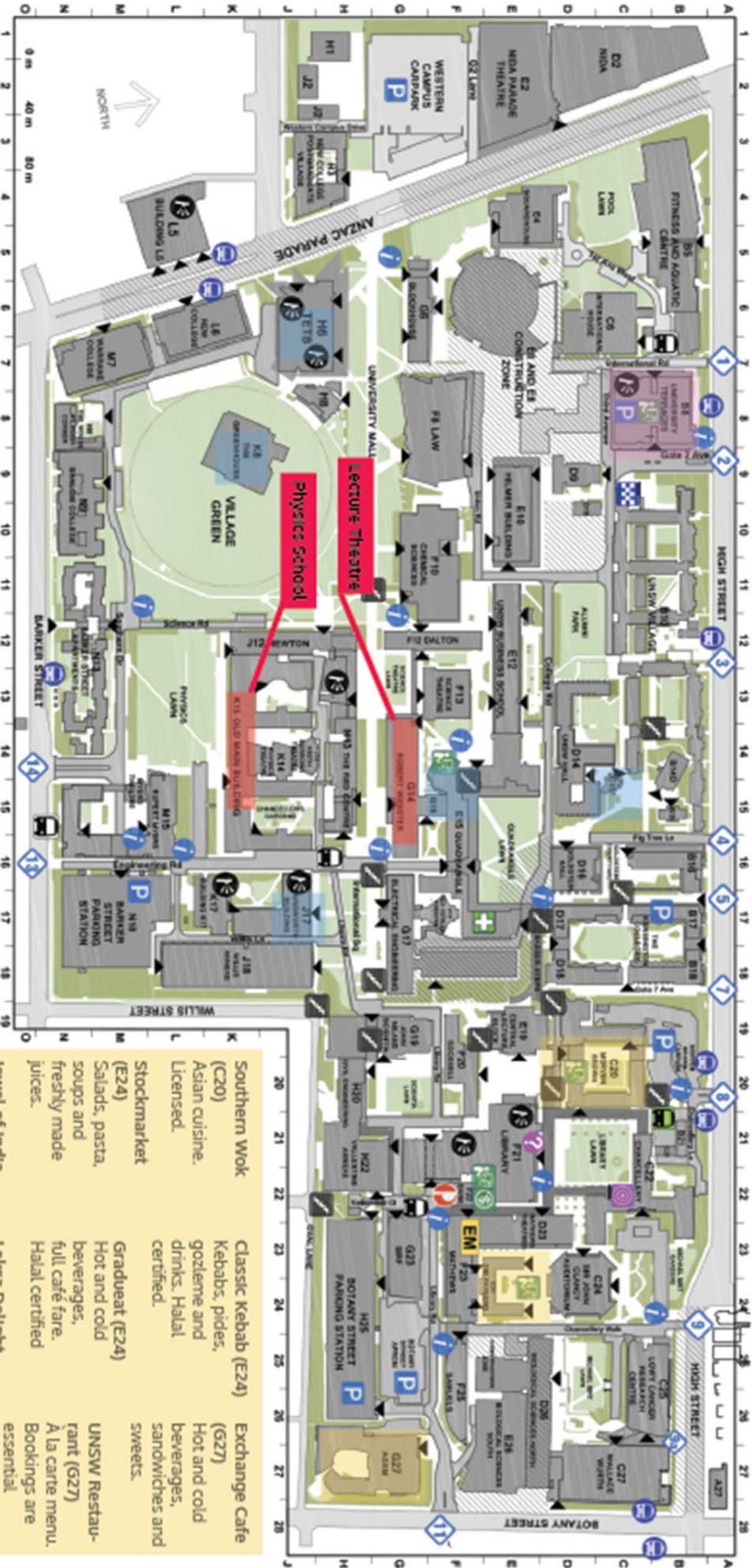
Magic moment: This is one of the best beautiful classic walks along the coast of Royal National Park from north to south. Length: 28 km, time: 12 hours, grade: hard, finish: Otford Railway Station. It can be done as shorter walk. Check timetable for ferry and train. Enjoy!

Website for the walk description

[http://downloads.wildwalks.com/The%20Coast%20Track%20\(Otford%20to%20Bundeena\)%20\(nsw-royalnp-tcttb\).pdf](http://downloads.wildwalks.com/The%20Coast%20Track%20(Otford%20to%20Bundeena)%20(nsw-royalnp-tcttb).pdf)

- Bun Me (B8)
- Vietnamese street food.
- Coco Cubano (B8)
- Cuban inspired café.
- Guzman Y Gomez (B8)
- Mexican cuisine.
- Mamak Village (B8)
- Malaysian cuisine.
- Max Brenner (B8)
- Chocolate beverages and desserts.
- Maze Coffee and Food (B8)
- Moochi (B8)
- Natural frozen yogurt.
- ShareTea (B8)
- Bubble tea and fresh Japanese cuisine.
- Stellini Pasta Bar (B8)
- Made to order fresh pasta dishes, Italian pastries, doughnuts and hot and cold beverage
- Yummba (B8)
- Vegetarian cuisine, falafel dips, gozleme and hot and cold beverages.

- Boost Juice (C20)
- Freshly made juices, smoothies and snacks.
- Subway (C20)
- Freshly made subs, drinks and cookies.



- Bar Navitas (H6)
- Greenhouse (K8)
- Licensed bar, beer garden and rotating food trucks with various cuisines.
- JG's Café (F12)
- Hot and cold beverages
- The Whitehouse (C15)
- Boutique bar with pub style food.
- Coffee on Campus (J17)
- Hot and cold beverages

- Quad Food Court (E15)
- Wide range of fresh, fast and tasty food. Various cuisines.
- Q Lounge & Deli (E15)

- Southern Wok (C20)
- Asian cuisine. Licensed.
- Stockmarket (E24)
- Salads, pasta, soups and freshly made juices.
- Jewel of India (E24)
- Indian cuisine.
- Tori by Sushi Hon (E24)
- Japanese cuisine.
- Classic Kebab (E24)
- Kebabs, pides, gozleme and drinks. Halal certified.
- Graduate (E24)
- Hot and cold beverages, full café fare. Halal certified
- Laksa Delight (E24)
- Asian cuisine.
- Tropical Green (E24)
- Vietnamese cuisine.
- Exchange Cafe (G27)
- Hot and cold beverages, sandwiches and sweets.
- UNSW Restaurant (G27)
- A la carte menu. Bookings are essential

Gordon Godfrey Workshop 2017: Program schedule

Time	Monday	Tuesday	Wednesday	Thursday	Friday
9.00-9.30	Opening address <i>Emma Johnston,</i> <i>Oleg Sushkov</i>	<i>Michael Fuhrer</i> Epitaxial Thin Films of Topological Dirac Semimetal Na ₃ Bi	<i>Matthias Vojta</i> Heisenberg-Kitaev: Models and Materials	<i>Daniel Loss</i> Majorana and Parafermions in Interacting Rashba Nanowires	
9.30-10.00	<i>Marco Polini</i> Viscous electron flow in high- quality graphene	<i>Michail E. Raikh</i> Smearing of the quantum anomalous Hall effect due to statistical fluctuations of magnetic dopants	<i>Jan Seidel</i> Domain walls and phase boundaries in multiferroic oxides	<i>Silvano de Franceschi</i> Ballistic 1D semiconductor nanostructures for topological superconductivity	<i>Discussion topic</i> Spin orbit interaction in itinerant systems and nanostructures. Novel 2D materials. (1 hour)
10.00-10.30	<i>Stefano Chesi</i> Unconventional ferromagnetism of two-dimensional electron liquids with spin-orbit interaction	<i>Naoka Hiraoka</i> Electronic phase control of perovskite SrIrO ₃ with Dirac line nodes	<i>Clemens Ulrich</i> Scaling behavior of the spin cycloid in multiferroic BiFeO ₃ thin films: A neutron diffraction investigation	<i>Maja Cassidy</i> Conductance through a helical state in an InSb nanowire	
10.30-11.15	COFFEE BREAK				
11.15-11.45	<i>David Neilson</i> Electron-Hole Double Bilayer Graphene. A new playground for novel strongly correlated quantum phases and superfluidity	<i>Leonid Golub</i> Photocurrents in Weyl semimetals	<i>Ben Powell</i> 2D or not 2D: Dynamical reduction of the dimensionality of exchange interactions and the "spin-liquid" phase of k-(BEDT- TTF) ₂ X	<i>Ashwin Srinivasan</i> Spin-orbit interactions in GaAs hole quantum point contacts	<i>Discussion topic</i> Novel materials. Oxides. Irridates. Magnetism. (1 hour)
11.45-12.15	<i>Dane McCamey</i> Spin coupling and dynamics in engineered molecular systems	<i>Stephan Rachel</i> From Topological Insulators to Frustrated Magnets: the case of Na ₂ IrO ₃	<i>Kirrily Rule</i> Neutron Scattering as a Tool for Investigating Low Dimensional Quantum Magnets	<i>Ulrich Zuelicke</i> Dirac electrons in quantum rings	
12.15-14.15	LUNCH		<i>Alexey Pan (30 min. talk)</i> Interactions at the interfaces of oxide nano-multilayers	LUNCH	
14.15-14.45	<i>Joe Salfi</i> Correlated states of interacting dopant spins in a silicon chip	<i>Lan Wang</i> Hard magnetic properties in nanoflake van der Waals Fe ₃ GeTe ₂		<i>Yuli Lyanda-Geller</i> The Hunt for Non-Abelian Statistics	<i>Discussion topic</i> General discussion, all topics. (1 hour)
14.45-15.15	<i>Frederico Rodrigues Martins</i> Spin of a multielectron quantum dot and its interaction with a neighboring electron	<i>Gerrit Bauer</i> Dynamics of high-quality ferrimagnetic insulators		<i>David Reilly</i> Dispersive Gate Reflectometry of a Quantum Point Contact	
15.15-15.45	<i>Thomas Jespersen</i> Electron pairing and superconductivity in mesoscopic complex oxide devices	<i>Mikhail Kostylev</i> Spin wave dynamics is the most direct way to measure the interface Dzyaloshinskii-Moriya		<i>Aydin Keser</i> Long range p-wave proximity effect into a disordered metal	
15.45-16.30	COFFEE BREAK			COFFEE BREAK	
16.30-17.00	<i>Baruch Horovitz</i> Transconducting transition for a mobile impurity coupled to N ≥ 2 Luttinger liquids	<i>Oleg Starykh</i> Two-magnon condensation route to the chiral spin liquid		<i>Timothy Duty</i> Depinning of the 1D charged Bose glass: localisation length and critical voltage in chains of nano-structured Josephson junction chains	
17.00-17.30	<i>Meera Parish</i> Impurities coupled to a bosonic medium	<i>Yaroslav Kharkov</i> Skyrmion rings and topological fractionalization in frustrated magnets		<i>Jared Cole</i> Charge transport in Josephson junction arrays: the interplay of disorder, decoherence and dissipation	
17.30-18.00					
18.00-20.00		Poster session	Sydney Opera Bar, Circular Quay, Get together		CLOSING