

# Chen Ge (Amy) Qu

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*(Last updated: July 11, 2015.)*

## EDUCATION

- University of British Columbia: M.Sc., Physics (2016 expected).
- Columbia University: M.S., Biomedical Engineering (2015).
- University of Toronto: Honours B.Sc. with High Distinction, Physics (2014).

## RESEARCH

Angle-Resolved Photoemission Spectroscopy Group, University of British Columbia  
Graduate Student

2015–

- Supervisor: Dr. Andrea Damascelli
- Inducing superconductivity in graphene by alkali adatom deposition

Planetary Physics Group, University of Toronto  
Undergraduate Thesis Student

2013–2014

- Supervisor: Dr. Sabine Stanley
- Demonstrated that hyperdiffusivities in the mMoSST planetary dynamo model do not affect numerical simulations for varied temperature and velocity boundary conditions

Low Temperature Physics Group, University of Toronto  
NSERC USRA Student

2013

- Supervisor: Dr. Stephen Julian
- Investigated non-Fermi-liquid behaviour and spin-glass transitions at low temperatures in systems similar to layered iron-pnictide superconductors

Ultracold Atoms Group, University of Toronto  
Independent Study & NSERC USRA Student

2011–2013

- Supervisor: Dr. Joseph Thywissen
- Developed an algorithm to resolve and detect atom configurations in an optical lattice above 99.5% accuracy at double the diffraction limit using a maximum-likelihood estimator
- Designed and built a small mountable photodiode amplifier for fast beam monitoring with bandwidths up to 2.4 MHz

- Supervisor: Dr. Kullervo Hynynen
- Built and characterized broadband piezocomposite ultrasound transducers for reducing standing wave and side lobe formation in the skull during transcranial treatments
- Developed models of ultrasound propagation in layered tissue to estimate real-time temperatures in bone during MRI-guided focused ultrasound hyperthermia for localised drug delivery

## PUBLICATIONS

- G. Dharmaraj, S. Stanley, A. C. Qu. *Scaling laws, force balances and dynamo generation mechanisms in numerical dynamo models: influence of boundary conditions. Geophysical Journal International* 199(1): 514–532 (2014).

## POSTERS/TALKS

- D. McKay, D. Jervis, D. Fine, G. Edge, C. Kierans, A. Qu, W. Cairncross, S. Trotzky, J. Thywissen. *Progress towards single site imaging of fermions in an optical lattice* (Optical Lattice Emulator Collaboration Meeting, 2012).
- A. Qu, A. Waspe, R. Chopra, K. Hynynen. *Characterizing spatial impulse response and bandwidth of single-element therapeutic ultrasound transducers* (Sunnybrook Research Institute Summer Research Student Poster Competition, 2011).

## AWARDS

- Columbia University Presidential Fellowship (2014).
- The Bryan Wayne Statt – George Luste Prize in Experimental Physics (2014).
- Trinity College Provost’s Scholar (2014).
- NSERC CGS–M, University of Toronto (2014, declined).
- NSERC CREATE QuEST Scholarship, University of British Columbia (2014, declined).
- Marie Curie Skłodowska Association Undergraduate Scholarship (2013, 2014).
- 3T0 M&P and Associates Scholarship in Mathematics and Physics (2012, 2013).
- NSERC USRA, University of Toronto (2012, 2013).
- Leslie Langbord Saunders Scholarship (2011).
- Trinity College Chancellor’s Scholarship (2011, 2012, 2013).
- Sunnybrook Research Institute Summer Poster Competition, Imaging Div. 1st place (2011).
- University of Toronto Physics Summer Undergraduate Research Fellowship (2011, declined).
- Queen Elizabeth II Aiming for the Top Scholarship (2010–2013).

## SKILLS

- Programming: MATLAB, Python, Java; signal processing, image analysis, numerical methods
- Software: Eagle, Autodesk Inventor, ExpressSCH/ExpressPCB, basic Mathematica
- Machine shop: milling machine, lathe
- Electronics: basic analog circuits, microcontrollers

## EXTRACURRICULARS

- Math in Motion ... Girls in Gear!: volunteer (2014).
- Toronto Humane Society: volunteer & foster (2013–2014).
- Hart House Singers: member (2012–2014).
- Science Rendezvous Toronto: volunteer (2011).
- Canadian Association of Physicists Congress: volunteer (2010).
- City of Toronto Parks & Recreation: swim instructor & lifeguard (2009–2011).