WELCOME TO UQ OPEN DAY

Maths and Physics Information Session

Prof. Halina Rubinsztein-Dunlop
Head of School
WHY MATHS AND PHYSICS?

Underpins so much of the world around us

- Mobile phones, iPods, internet, computers, ATMs, CDs, DVDs etc.
- Finance, economics, security, bio-security, pharmacy, medicine etc.
- Traffic control, environmental issues, urban planning
- Exploration and understanding (fundamental mathematics, earth, space, atomic and subatomic levels)
HOW ABOUT MY FUTURE?

Excellent career prospects despite economic booms/downturns

Skills applicable to any industry

- Analytical
- Problem-solving
- Critical thinking
- Research skills
- Communication skills

Graduates in high demand
UNDERGRADUATE PROGRAMS

Bachelor of Science (3 year program)
- Mathematics
- Physics
- Statistics
- Biophysics (Dual Majors)
- Bioinformatics (Dual Majors)
- Computational Science (Dual Majors)

Bachelor of Arts (3 year program)
- Mathematics
UNDERGRADUATE PROGRAMS

Bachelor of Advanced Science (New 4 year program)

- For high achieving students with a keen interest in Science (including Mathematics and Physics)
- Continuous interaction with researchers from year 1
- Visits to research laboratories
- Research project in final year
- Mentored by academics
- Interaction with other high achieving students
- Exposure to cutting edge technologies at UQ
MATHEMATICS PLANS

- Mathematical Analysis
- Algebra and Discrete Mathematics
- Mathematical Physics
- Applied Mathematics
- Scientific Computation
- Mathematical Ecology/Biology
- Financial Mathematics
- Statistics
PHYSICS PLANS

- Core Physics
- Biophysics
- Computational Physics
- Astrophysics
- Mathematical Physics
MATHEMATICS GRADUATES

Dr Michiru Takizawa

- PhD Mathematical Physics 2005
- Grad Cert IT 2004
- BSc (Hons) 2000, LLB 1999

“Choose what you enjoy the most. There are more opportunities out there for mathematics graduates than you may realise and the skills and knowledge you acquire will be highly valued by any employer.”
MATHEMATICS GRADUATES

Other career examples

- Origin Energy Geophysicist, Brisbane
- Research Scientist at CSIRO
- Financial Analyst at Suncorp, Brisbane
- Research Leader of Applied Hypersonics Team
- Australian Bureau of Statistics Director, Brisbane
- Queensland Treasury Analyst, Brisbane
- High School teachers
Dr Katrina Seet

- PhD Physics 2009
- BSc (Hons) UWA

Katrina works in medical physics at the Princess Alexandra Hospital in Brisbane. She is in the cancer department where she does the mathematical modelling they use to calculate the doses for radiation therapy.
PHYSICS GRADUATES

Other career examples

- Renewable Energy and Policy Analyst, Brisbane
- Financial analyst at Credit Suisse Bank, London
- Quantum Physics Research Griffith University
- Teaching Physics in France
- Chief Scientific Advisor, DSTO Canberra
- Science Communicator, Channel 9
- Executive Officer, Astronomy Australia Ltd
FIRST JOB AFTER GRADUATION

By job sector

- Patents/Law
- Financial Maths
- Defence Force
- IT/Computing
- Medicine/Medical Physics
- High School Teaching
- Public Sector (Science and Engineering)
- Private Sector (Science and Engineering)
- Post Doctoral/Academia

Australian Learning and Teaching Council Physics Project Team (O’Byrne, Mendez et.al 2008)
ENTRY REQUIREMENTS

Bachelor of Science

- Queensland Year 12 or equivalent
- English
- Maths B or higher
- Chemistry or Physics

QTAC Code* 731001

*(Commonwealth Supported Place)
ENTRY REQUIREMENTS

Bachelor of Advanced Science

- Queensland Year 12 or equivalent
- English
- Maths B or higher
- Two of: Agricultural Science, Biology, Chemistry, Earth Science, Maths C, Physics

QTAC Code* 731901

*(Commonwealth Supported Place)
WHY STUDY MATHS OR PHYSICS AT UQ?

- Award-winning teachers
- International research reputation that means you learn from the people at the cutting-edge
- Innovative courses
- State-of-the-art facilities
- World-class libraries
- International student exchange opportunities
- Great student societies
AWARD WINNING TEACHERS

Michael Jennings
- 2010 Australian Learning And Teaching Council Citation for Outstanding Contributions to Student Learning

Michael Drinkwater
- 2012 Australian Learning And Teaching Council Citation for Outstanding Contributions to Student Learning
AWARD WINNING TEACHERS

Joseph Grotowski
- 2008 UQ Award for Excellence in Teaching
- 2010 Australian Learning And Teaching Council National Citation for Outstanding Contributions to Student Learning

Matthew Davis
- 2010 University of Queensland Citation for Outstanding Contributions to Student Learning
- 2011 Australian Awards for University Teaching — Citation for Outstanding Contributions to Student Learning
AWARD WINNING TEACHERS

Margaret Wegener
- 2010 UQ Commendation for Teaching Excellence

Phillip Isaac
- 2011 UQ Award for Teaching Excellence

Anton Rayner
- 2011 Faculty of Science Excellence in Teaching Award
- 2012 UQ Citation for Outstanding Contributions to Student Learning
AWARD WINNING TEACHERS

Halina Rubinsztein-Dunlop
- 2008 UQ Award for Excellence in Research Higher Degree Supervision

Hugh Possingham
- 2005 UQ Award for Excellence in Research Higher Degree Supervision
ACTIVE LEARNING
ROLE PLAY

The Mystery Planet

It is the year 2076...
INQUIRY-BASED LABORATORIES
INTERNATIONAL RESEARCH REPUTATION

Federation Fellows, Laureate Fellows

- Andrew White
- Hugh Possingham
- Gerard Milburn
INTERNATIONAL RESEARCH REPUTATION

Professorial Fellows, Discovery Outstanding Researcher Awardees

- Darryn Bryant
- Ole Warnaar
- Ross McKenzie
- Tim Ralph
- Dirk Kroese
INTERNATIONAL RESEARCH REPUTATION

Vice Chancellor Senior Research Fellows

- Darryn Bryant
- Geoff McLachlan
- Paul Meredith
- Tim Ralph
- Ross McKenzie
- Gerard Milburn
INTERNATIONAL RESEARCH REPUTATION

Future Fellows

- Holger Baumgardt
- Michael Bromley
- Tamara Davis
- Karen Kheruntsyan
- Murray Olsen
- Jorgen Rasmussen
- Anthony Richardson
- Ebinazar Namdas
INTERNATIONAL RESEARCH REPUTATION

Research Centres
- Quantum-Atom Optics
- Environmental Decisions
- Engineered Quantum Systems
- Organic Photonics and Electronics
- Hypersonics
- Quantum Computation and Communication Technology
- Quantum Science Laboratory
- Mathematical Physics
- Mathematics and Statistics of Complex Systems
- Applications in Natural Resource Mathematics
FACILITIES

- Low temperature labs
- Laser labs (quantum atom optics, optomechanics, quantum optics)
- Condensed Matter Physics labs
- Access to astronomical observatories around the world
- Organic Photonics and Electronics labs
- High Performance Computing Clusters
- Laser Diagnostics labs
- Maths & Stats First-Year Learning Centre
- Dorothy Hill Library
STUDENT EXCHANGE

- Study in more than 130 partner universities in 27 countries around the world

- One or two semesters abroad while still gaining credit for your course at UQ

Visit www.uq.edu.au/uqabroad
STUDENT SOCIETIES AND ACTIVITIES

- MSS
- PAIN
- School Visits
- Demo Troupe
- BrisScience
- Junior Physics Olympiad
- Queensland Informatics and Programming Club
WANT TO KNOW MORE?

- Talk to us after this session

- Contact the office of the Faculty of Science to make an appointment with an Advisor (3365 1888 or science.enquiries@uq.edu.au)

- Visit the Bachelor of Science Study Planner website at
  http://www.uq.edu.au/study/science/studyplanners/