

SECTION 5 STUDENTS

Introduction

The School has a significant commitment to postgraduate training. In 2005 we had a total of 105 PhD and MPhil students which includes continuing students and those completing their thesis. A total of 23 postgraduate students (including three MPhil students) commenced their program of study during the year, seven of them being women.

The School, in co-operation with the ANU Graduate School, organised various activities aimed at assisting postgraduate students and broadening their education. An introductory seminar for new students was provided and various tours of the School facilities and the Department of Physics, The Faculties, were conducted. The students also met at several social functions.

Several student prizes were presented at Founder's Day on the 14th of October:

The Director's Award, for the most outstanding published research paper by a PhD student over the last year was awarded to Ms Linda Uhlmann for her publication "Electron Collisions with Laser Cooled and Trapped Metastable Helium Atoms: Total Cross Section Measurements" in Physical Review Letters 94 (2005) 173201.

The Graduate Program in Physical Sciences ran the John Carver competition for the 12th year. Talks were presented by postgraduates from this School, The Faculties and the Australian Defense Force Academy, with the sessions chaired by students. The winners were announced at the conclusion of the program and the prizes were presented at the School's Founder's Day.

The winner of the **John Carver Prize** for best talk at the Graduate Student Seminar Series was: Drew Evans, Applied Mathematics, for his talk entitled "A Stressful PhD: Theory and Experiments".

The winner of the **Director's Prize** was: Steven Morrison, Nonlinear Physics Centre, for his talk entitled "Beaming Light to Go below the Diffraction Limit".

And the winner of the **Dean's Prize** was: Simon Haine, Department of Physics, The Faculties, for his talk entitled "Spooking Einstein with Atom Lasers".

The Robert and Helen Crompton Scholarship for travel in 2005 was awarded jointly to Mr Steven Morrison to make an oral presentation of his work at the Asia Pacific Microwave and Photonics Conference in Kobe, Japan and to Ms Joanne Harrison to make an oral presentation at the University of Stuttgart, Germany and Laboratoire de Photonique Quantique at Moléculaire, Paris, France and to attend Diamond 2005, Toulouse, France.

The staff of the School also makes a significant contribution to undergraduate education by offering a broad range of courses to enrich the undergraduate teaching program. These courses are offered in the Physics, Engineering and Chemistry departments at The Faculties. Also, to provide wider opportunities for ANU undergraduates at research level, the School has in recent years offered honours projects and many undergraduates have taken up this opportunity. The School supports this program by offering honours year scholarships of which there were 14 in the current year. It was also pleasing to note that seven students who held either vacation scholarships, honours scholarships or were visiting scholars in 2004 have continued and enrolled as PhD or MPhil students in the School in 2005. (Five students who held either vacation scholarships or were visiting scholars in 2004 continued in an honours program)

A large number of international and national visiting scholars, 40 and 28, respectively, spent three months to one year in various departments for the purpose of training and research in 2005. Lists of these scholars are available as an appendix on the School's web-site.

Some prizes awarded to our students include:

Ms Beata Dabrowska was awarded a travel grant to attend the 7th Australasian Conference on Optics, Lasers and Spectroscopy in Rotorua, New Zealand

Mr Michael Fraser received a Fulbright Scholarship to spend 12 months at Stanford University, California.

Mr Alexey Glushenkov was awarded the best student presentation at the 2nd ARC Centre of Functional Nanomaterials meeting held in Maroochydore, Queensland, 30 November to 2 December.

Ms Joanne Harrison was awarded a prize for the best poster at Diamond 2005 in Toulouse, France.

Mr Steven Morrison was awarded the winner of the CUDOS graduate student competition at the CUDOS workshop held in September.

Mr Marc Spooner received a Best Poster Award in the Condensed Matter Session of the 16th AIP Congress held in Canberra, 31 January to 4 February.

Ms Taira Vora won the Best Student Presentation Prize at the joint meeting of the Australian Physiological Society and the Australian Society of Biophysics.

Mr Stephan Winkler was awarded a prize for his poster presentation at the 14th Australian Conference on Nuclear and Complementary Techniques of Analysis and 8th Vacuum Society of Australia Congress held in Wellington, New Zealand in November.

Postgraduate Degrees Awarded and Destinations

Dr David Brett

PhD Thesis: *Pd Gettering in Si*

Currently: Hawker College, ACT

Dr Raimond Chan

PhD Thesis: *Canonical Perturbative Approach to Strongly Correlated Systems*

Currently: National ICT Australia

Mr Cheng Chen

MPhil Thesis: *Correlation and Spectral Function of Electrons in Solids*

Currently: Medical School, University of Sydney

Mr Brendan Dobson

MPhil Thesis: *Nonlinear Dynamics and Solitons*

Currently: Theoretical Physics

Dr Elliott Fraval

PhD Thesis: *Minimising the Decoherence of Rare Earth Ion Solid State Qubits*

Currently: Laser Physics Centre

Mr Fernando Gesto

MPhil Thesis: *Theoretical and Experimental Aspects of the Helicon Double Layer Plasma Thruster*

Currently: Enrolled as a PhD student at ADFA

Mr Brendan Hanna

MPhil Thesis: *Nonlinear Effects in Dynamic Periodic Structures*

Currently: Private industry

Mr Zohair Hussain

MPhil Thesis: *Amorphisation of $In_xGa_{1-x}As$*

Currently: PhD Student, Electronic Materials Engineering

Dr Pearl Louis

PhD Thesis: *Bright and Dark Matter-wave Solitons in Optical Lattices and Superlattices*

Currently: Department of Physics, Osaka City University, Japan

Dr Ben McMillan

PhD Thesis: *Global Wave Modes of Dissipative Fluid Models in Strongly Three Dimensional Plasmas: Calculation and Interpretation*

Currently: Department of Physics, University of Sydney

Mr Roger McMurtrie

MPhil Thesis: *Multi-wave Mixing at Radio Frequencies by Nitrogen Vacancy Centres in Diamond*

Currently: Laser Physics Centre

Dr Eleni Notaras

PhD Thesis: *Electrooptic Chromophores for Inorganic Polymer Glass Hosts*

Currently: Trinity College, Dublin, Ireland

Dr Horst Punzmann

PhD Thesis: *Electron Transport in Magnetically Confined Plasmas*

Currently: Research Engineer and H-1NF Manager, Plasma Research Laboratory

Dr Edward Roberts

PhD Thesis: *High Resolution Photoabsorption and Photoelectron Spectroscopy of Oxygen*

Currently: General Manager, Australian Scientific Instruments

Dr Yinlan Ruan

PhD Thesis: *Chalcogenide Planar Waveguide Devices for All-optical Processing*

Currently: University of Adelaide

Dr Gerd Schroeder

PhD Thesis: *Skeltons in the Labyrinth*

Currently: Applied Mathematics, moving to Erlangen University, Germany

Dr Ilya Shadrivov

PhD Thesis: *Electromagnetic Waves in Left-handed Metamaterials*

Currently: Postdoctoral Fellow, Nonlinear Physics Centre

Dr Orson Sutherland

PhD Thesis: *A Study of High Brightness Plasma Ion Source*

Currently: Post-Doctoral Fellow, Space Plasma and Plasma Processing

Dr Linda Uhlmann

PhD Thesis: *Electron Collisions with Cold Metastable Helium Atoms*

Currently: Postdoctoral Fellow, Atomic and Molecular Physics Laboratories

Dr Hua Xia

PhD Thesis: *Spectral Transfer in Plasma Turbulence*

Currently: Adjunct Fellow, Plasma Research Laboratory

Postgraduate Students

Sources of Funding:

ADFA Australian Defence Force Academy
ASS ANU Supplementary Scholarship
ANU/MPhil ANU Master Scholarship
ANUPS Australian National University Postgraduate Scholarship
ANUPTS Australian National University Postgraduate and Tuition Fee Scholarship
APA Australian Postgraduate Award
APA(I) Australian Postgraduate Award (Industry)
AusAID AusAID Scholarship
CRC Cooperative Research Centre
CSIRO Supported by the Commonwealth Scientific & Industrial Research Organisation
GSS Graduate School Scholarship
IPRS International Postgraduate Research Scholarship
MMc Malcolm McIntosh Scholarship
SPIRT ARC SPIRT Grant
RMIT Royal Melbourne Institute of Technology
WS RSPHysSE Supplementary Scholarship for Women

The lists include first year students who were not enrolled for the full year and continuing students who have not yet graduated.

Mr Arzand. Abdullatif, MSc ANU, AusAID
Ms Annabel Alexander, BSc ANU, APA/ASS
Mr Michael Anderson, BEng ANU, APA/ASS
Ms Vicki Au, BA BSc Melbourne, ANUPS
Mr Nicolas Balcon, BSc Galilee, ANUPTS
Mr Satyanarayan Barik, BSc Vidyasagar, MSc Calcutta, ANUPTS
Mr Cameron Bowles, BSc Flinders, ANUPS/GSS
Mr David Botman, BSc Canterbury, ANU/ASS (from March)
Mr David Brett, BSc Melbourne, ANUPS (until February)
Mr Phillip Brydon, BSc ANU, APA/ASS
Mr Santiago Caballero Benitez, MSc KTH, Mex Gov Sholarship/ASS (from September)
Mr Supakit Charnvanichborikarn, BIT BE ANU, ANUPS/ASS (from February)
Mr Hua Chen, BSc Xian Jaotong, APA/ASS (from January)
Ms Anna Carnerup, BSc Malmö, ANUPTS, IPRS
Mr Toen Castle, BSc UNE, BSc ANU, APA/ASS
Ms Victoria Coleman, BSc Flinders, APA/ASS
Mr Scott Collis, BSc Sydney, ANUPS
Ms Beata Dabrowska, BSc Warsaw, ANUPTS/ASS
Mr Guliver Dalton, BSc ANU, ANUPS/ASS
Mr Brendan Dobson, BSc ANU, ANU/MPhil (until October)
Mr Scott Edwards, BSc Cert. of Adv. Studies, Tripos Cambridge, APA/ANUPS/ASS
Mr Drew Evans, BSc ANU, ANU/CRC
Ms Sarah Everett, BSc Wollongong, ANUPS/ASS (from February)
Mr Michael Fraser, BSc BEng Griffith, APA/ASS
Mr Elliot Fraval, BEng BSc UC, BSc ANU, ANUPS (until July)
Mr Darren Freeman, BSc Flinders, APA/ASS/MMc

Mr Ivan Garanovich, MSc Belarussian State, ANUPTS/ASS (from January)
Mr Paulus Gareso, BSc Hasanuddin, MSc Macquarie, AusAID
Mr Joshua Garretson, BSc Griffith, IPRS/ASS (from March)
Mr Fernando Gesto, BSc ANU, ANU/MPhil (until June)
Ms Laura Gladkis, MSc Buenos Aires, ANUPS
Mr Alexey Glushenkov, BSc Novosibirsk State, ANUPTS (from January)
Ms Sangeetha Gnanapragasam, BSc Chennai, MSc MPhil Madras, ANUPTS
Mr Brendan Hanna, BSc UNSW, ANUPS (until May)
Ms Joanne Harrison, BSc Adelaide, BSc ANU, APA/ASS
Ms Christine Henry, BSc LLB ANU, APA/ASS (from January)
Mr Ben Heslop, BE ANU, APA(I)
Mr Shaun Howard, BSc Cincinnatti, ANUPTS
Mr Richard Hughes, MPhys Surrey, ANUPTS
Mr Zohair Hussain, BSc Eng GIK, Pakistan, ANU/MPhil (until February), ANUPS/ASS (from February)
Ms Milica Jelisavcic, BSc Belgr, ANUPTS
Mr Bernt Johannessen, BSc Auckland, BSc ANU, ANUPS/IPRS
Mr Greg Jolley, BA Engineering NTU, ANUPS
Mr Anthony Jones, BE/BSc ANU, ANUPS
Ms Hannah Joyce, BEng BSc UWA, ASS/GSS/MMc (from March)
Ms Peggy Kao, BSc UQ, BSc Adelaide, ANUPS (from March)
Mr Ali Khalil, BSc MSc Cairo, ANUPS
Mr Taehyun Kim, BSc MSc Kyunghee, ANUPS (from March)
Ms Lydia Knuefing, BA BSc Wuppertal, ANUPTS
Mr Santosh Kumar, BSc Calcutta, MSc Pune, ANUPTS
Mr Raghu Lakshmanasamy, BEng ACCET, India, MEng ANU, ANU/MPhil (from March)
Ms Vanessa Leung, BSc Massey, GSS/ASS/WS (jointly with University of Bonn)
Mr Peter Linardakis, BE /BIT ANU, APA/ASS
Ms Pearl Louis, BSc ANU, ANUPS (until April)
Mrs Lily Luo, BSc Nanchang, APA/ASS
Mr Mykhaylo Lysevych, BEng Lviv, ANU/MPhil (from February)
Mr Nathan Madsen, BSc UQ, APA/ASS
Mr Aaron Matthews, BSc UC, GDipSc ANU, ANUPS/ASS
Mr Glen McCarthy, BSc UNSW, Dip Ed UNSW, ANUPS
Mr Ian McKerracher, BSc BEng UWA, APA/ASS (from March)
Mr Ben McMillan, BSc Melbourne, APA/ASS (until February)
Mr Roger McMurtrie, BAppSc UC, ANU/MPhil
Mr Albert Meige, BSc Galilee, ANUPTS
Ms Sudha Mokkalapati, BSc Usmania, MSc Kanpur, ANUPS
Mr Joseph Morrall, BSc ANU, ANUPS
Mr Steven Morrison, BEng Griffith, APA/ASS
Ms Eleni Notaras, BSc/BAS, ANUPS (Redfern Polymer Optics) (until September)
Ms Judit O'Vari, BSc BEng Adelaide, ANU/MPhil
Mr Norman Oelkers, DipPhys Heidelberg, IPRS/DAAD, EES(GSS) (Jointly with MSI)
Mr David R. Oliver, BSc Wollongong, APA/ASS

Mr David J. Oliver, BSc Nano Flinders, ANUPS (from January)
Mr Dan-Erik Petersen, BSc UT Denmark, ANUPS/ASS
Mr Benjamin Powell, BSc BLM CQU, ANU/MPhil
Ms Amrita Prasad, BTech Auckland, ANUPS (from February)
Mr David Pretty, BSc Melbourne, ANUPS
Mr Horst Punzmann, BSc Polytech Regensburg, ANUPS
Mr Devin Ramdutt, BSc Wollongong, GSS/ASS
Mr Edward H. Roberts, BE BSc UNSW, MBA Deakin, FIE(Aust), APA/ASS (until September)
Mr Matias Rodriguez BSc MSc Buenos Aires, ANUPTS (from January)
Mr Christian Rosberg, MS TU Denmark, ANUPTS/ASS
Ms Yinlan Ruan, BSc MSc HUST China, ANUPS (until August)
Mr Mohammad Saadatfar, BSc Mazandaran, MSc IASBS, ANUPTS
Mr Gerd Schroeder, Dipl-Phys Cologne, IPRS/ANUPS
Mr Ilya Shadrivov, MSc Nizhny Novgorod, ANUPS/IPRS/ASS (until January)
Mr Manu Shunmuga Sundaram, BSc ANU, ANU/MPhil (from August)
Ms Madeleine Smith, BSc Canterbury, ANUPS/ASS (from March)
Mr Nat Smith, BSc ANU, ANUPS
Mr Marc Spooner, BSc Ottawa, MSc Western Ontario, ANUPS
Ms Kallista Stewart, BSc BE ANU, GSS/ASS
Mr Andre Stoffel, MSc KTH RIT Stockholm, IPRS/ASS (from February)
Mr Andrew Sullivan, BAppSc Victoria, CSIRO
Mr Orson Sutherland, BE ANU, APA/ASS (until March)
Mr James A. Swansson, BA MSc Melbourne, APA/ASS
Mr Michael Turner, BSc UC, APA/ASS
Ms Linda Uhlmann, BAppSc CQld, APA/ASS
Mr Jeta Vedi, BE Bcom ANU, APA/ASS
Ms Taira Vora, BSc ANU, ANUPTS
Mr Klaus Wilcken, MSc Turku, IPRS ANUPS
Mr Daniel Wilkins, BSc ANU, ANUPTS (Geology)
Mr Andrew Wilkinson, BE BSc ANU, APA/ASS
Ms Elena Wilson, BSc Biebsk State, ANUPS
Mr Stephan Winkler, MSc Vienna, ANUPTS
Ms Hua Xia, MSc Chongqing, ANUPS
Ms Jun Yu, BSc Wuxi China, ANU/MPhil
Mr Meelis Zidikheri, BSc GradDipE Melbourne, ANUPS/ASS (CSIRO)

Honours Students

<u>Name</u>	<u>Home University</u>	<u>Host Department</u>
Mr Gerard Atkinson*	Australian National University	AMPL
Ms Dahliyani Breidis*	Australian National University	LPC
Mr Michael Brown*	University of Auckland	NP
Ms Lai Sun Chew	Australian National University	PRL SP3
Mr Michael East*	Australian National University	NP
Mr Peter Evans	Australian National University	TP
Mr Adric Jones*	Flinders University	AMPL
Ms Emma Kirby	Australian National University	TP
Mr Michael Leung*	Flinders University	EME
Ms Sarah Midgley*	University of Western Sydney	PRL Toro
Mr Eldad Ohayon*	Australian National University	PRL Toro
Mr Manu Shunmuga Sundaram	Australian National University	AMPL
Mr Justin Werner*	Australian National University	NP
Mr Matthew Woolley	Australian National University	EME

* received a RSPHysSE Honours Scholarship