





Graduation Ceremony

TUESDAY, 21 JUNE 2005 McEWAN HALL 3.00 p.m.

College of Science and Engineering



Welcome to The University of Edinburgh's Graduation Ceremony

Today's ceremony is one of eleven summer ceremonies held in June and July. Degrees are also conferred at three ceremonies in the winter and at several meetings of the Senatus Academicus throughout the year for those graduating *in absentia*. The University confers approximately 5,000 degrees and 250 diplomas and certificates annually.

The ceremony follows time honoured traditions, some of which can be traced back to the founding of the University in 1583.

The Senatus Academicus meets immediately prior to each ceremony to recommend the degrees to be awarded. Following this meeting the Academic Procession is gathered and processes into the hall. The procession is led by the staff bearer followed by members of academic and support staff including the Heads of Colleges, Heads of Schools, the Honorary graduands, the University Rector and members of the University Court. They are followed by the Bedellus carrying the University Mace and leading in the Vice-Chancellor. The Vice-Chancellor (the University Principal) is acting on behalf of the Chancellor, His Royal Highness The Prince Philip, Duke of Edinburgh.

The names of the graduands are announced by the Head of the relevant School and the Vice-Chancellor confers the degree by touching the head of the graduand with the graduation cap. Popular legend has it that the cap was originally made using the cloth from the breeches of John Knox, although other rumours attribute those breeches to the famous Scottish scholar, George Buchanan.

At the close of the ceremony the graduands join the Academic Procession as new graduates of The University of Edinburgh.

ORDER OF PROCEEDINGS

Programme of Music The Programme of Music is printed at the back of the Programme.

Academic Procession

The Assembly is asked to stand as the procession enters the Hall.

Moment of Reflection

Award of University Benefactor

Conferment of Degrees

Degrees will be conferred by the Vice-Chancellor, Professor Timothy O'Shea, B.Sc., Ph.D., F.R.S.E.

Award of Honorary Degrees

The Vice-Chancellor

Academic Procession

The Assembly is asked to remain standing as the procession leaves the Hall.

Please do not use flash photography during the Moment of Reflection

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B LEGACY BANK





Distinction of University Benefactor

Dr Alfred Bader, C.B.E., B.Sc., B.A., M.Sc., M.A., Ph.D., Hon.DSc.(Edin.), Hon LL.D., Hon.D.Univ., Hon.D.Sc., F.R.S.A., and Dr Isabel Bader, B.A., Hon.D.S.L.

Presented by Professor Stephen Chapman, B.Sc., Ph.D., C.Chem., M.R.S.C., Head of the School of Chemistry.

Isabel Bader was born in northern Ontario. Her father, Herbert Overton, was a cabinetmaker who emigrated from England to Canada in 1906. Her mother, Stella Sirr, came from a large family in New Liskeard. The Overton family were a deeply religious Protestant family where education was very important. Two of their three children went to university - Isabel won a scholarship to Victoria University in Toronto.

Isabel always had a dream of returning to England, the home of her father. In July 1949 this dream came true and on board SS Franconia from Quebec City to Liverpool with a friend, she met Alfred Bader who was travelling back to Europe to visit relatives. For both of them this was the meeting of soul mates. After nine days Alfred proposed. Isabel eventually rejected him in 1950; she did not believe the mixture of religions would work. Her book, A Canadian in Love, is based on the 80 letters she wrote to Alfred between their meeting in July 1949 and their sad parting a year later. Isabel remained in Bexhill in Sussex where she taught English, History, French, Spanish and Drama and was co-founder of a drama school there and later a costume museum. In 1975 when they saw each other again, Alfred discovered to his surprise and delight that she had not married. They married in 1982. Isabel loves gardening, music and the theatre, is an expert on costumes, and accompanies Alfred on his European lecture tours and visits to chemists. Like him, she is very interested in the Bible, old master paintings, and "investing" in research and scholarship.

Alfred Bader came from a Jewish family originally resident in Kyjov, today in the Czech Republic. His grandfather, Moritz Ritter von Bader, was a civil engineer who helped Ferdinand de Lesseps build the Suez Canal. His mother, Elisabeth Serényi, came from an aristocratic Catholic Hungarian family. When his father died just two weeks after Alfred's birth in 1924, his mother was left with no income in a time of runaway inflation and so gave him into the keeping of his Jewish aunt. In 1938 Alfred was one of 10,000 Jewish youngster allowed to enter Britain. In 1940, Alfred, just 16, was sent to Fort Lennox, an internment camp in Quebec. In the autumn of 1941 he was released into the care of a Montreal sponsor, Martin Wolff. Such is the background that helped to shape the fascinating personality of Alfred Bader.

Martin Wolff became like a father to Alfred, pressing him to further his education. Alfred applied to Queen's University, Ontario, where he was accepted into the Faculty of Applied Science. As a young engineering student Alfred found a summer job as a laboratory technician with the Murphy Paint Company in Montreal, an experience that further whetted his fascination with chemistry. In 1945 he was awarded a BSc in Engineering Chemistry, in 1946 a BA in History and an MSc in Chemistry in 1947. He completed his PhD in Organic Chemistry at Harvard in 1950.

That year he went to Milwaukee to work in research for the Pittsburgh Plate Glass Company and to start his own chemical supply company, literally in a garage. From this small operation, Aldrich Chemicals grew rapidly, moving to bigger and bigger premises as the company became world-famous for the quality and variety of its chemicals. In 1975 Aldrich Chemicals merged with Sigma of St.Louis, a leading supplier of biochemicals. Alfred became president of the merged company Sigma-Aldrich.

In 1991 he left Sigma-Aldrich and had then time to devote to his other great love, Art. Early in life, Alfred became interested in art and art history and he is one of the most renowned private collectors of 17th century Dutch Art. His autobiography Adventurers of a Chemist Collector gives an insight into his remarkable life. Throughout the book he reminds readers of the ABCs that helped to shape his life, Art, the Bible and Chemistry. Appropriately, the cover of this book features a Flemish painting of 1648 titled The Alchemist. Alfred is well known to international art auction houses. He takes particular pleasure in buying dirty old paintings in antique stores or at auction hoping that cleaning will reveal great works. His special skill is in distinguishing work by Rembrandt's students from that of the master himself. Slide-illustrated tales of such detective work have held gallery audiences spellbound for years.

Philanthropists are generally a happy breed, Alfred and Isabel are uniquely so. Their giving, like their life in general, is reflective of their sense of wonder, magic and joyful 'accidents' of existence. Alfred rejoices in the two worlds of chemistry and fine art. Over the years, the Baders have sought out deserving chemists and universities throughout North America, Europe and Israel and have underwritten their research through grants and fellowships. In 1992 with their help, Queen's University, Ontario acquired Herstmonceux Castle in East Sussex. This has been transformed into an international study centre for students. They donated funds to the Victoria University in Toronto to construct the Isabel Bader Theatre, completed in 2000, which won the Toronto Architecture and Urban Design Award of Excellence in 2001.

Scholarship has always remained as a focal point in both their lives as demonstrated by their support for students at the University of Edinburgh. In 1997 they established the Bader Bursaries to help Chemistry undergraduates in need of financial assistance by providing support through each year of their four-year degree programme. They have steadily increased their commitment and currently support 9 new Bader Bursaries each year. In 2004/05 there were a total of 25 Bader Scholars, three of whom are graduating at today's ceremony.





Academic Dress

Graduands wear a black gown or a black gown with red facings down the front if they are to receive the award of Doctor of Philosophy. Doctor of Science graduands wear a gown of superfine scarlet cloth, with loose sleeves, the facings down the front and around the shoulders covered, and the sleeves lined with rich scarlet silk. The hoods worn by the graduands denotes their degree:

Bachelor of Science: Black silk, lined with green silk and bordered with white fur.

Doctor of Philosophy: Black cloth lined with blue silk shot with brown, bordered with three inches of red.

Doctor of Science: Black cloth lined with green silk.

Master of Arts: Black silk, lined with white silk.

Master of Chemistry: Black silk lined with green silk bordered with white silk three inches broad.

Master of Chemical Physics: Black silk lined with green silk bordered with white silk three inches broad.

Master of Philosophy: Black silk, lined with silver silk, bordered with blue silk shot with brown three inches broad.

Master of Physics: Black silk lined with green silk bordered with white silk three inches broad.

Master of Science: Black silk, lined with white silk bordered with green silk three inches broad and three inches of green silk at the front of the neckband. **Honorary Graduates**:

Gown of superfine scarlet cloth, with loose sleeves, the facings down the front and around the shoulders covered, and the sleeves, lined with rich scarlet silk. Hoods:

Doctor of Science: Black cloth lined with green silk.

University Benefactors:

Navy blue robe with facings, yoke and sleeves faced in red. Outer edge of facings and yoke and sleeves are all further trimmed with silver oakleaf lace ribbon.

BESTOWAL OF THE DISTINCTION OF UNIVERSITY BENEFACTOR

Dr Alfred Bader, C.B.E., B.Sc., B.A., M.Sc., M.A., Ph.D., Hon.D.Sc.(Edin.), Hon LL.D., Hon.D.Univ., Hon.D.Sc., F.R.S.A., Chemist, Author and Collector *and* Dr Isabel Bader, B.A., Hon.D.S.L.

RECOMMENDED FOR DEGREES

SCHOOL OF CHEMISTRY

Candidates will be presented by the Head of the School of Chemistry, Professor Stephen K. Chapman, B.Sc., Ph.D., C.Chem., M.R.S.C.

THE DEGREE OF DOCTOR OF PHILOSOPHY

- Clemence, Nathan Christian, M.Chem. Thesis: "Pyrolytic syntheses of 6,5,5 heterocyclic systems as novel magenta dye couplers."
- Gibson, Helen Ruth, B.Sc.(Newcastle). Thesis: "A structure/function study of two novel cytochromes *c* from *Rhodobacter sphaeroides*."
- Hannam, Jeffrey Scott, B.Sc.(Sheffield Hallam), M.Phil.(Nottingham). Thesis: "The use of submolecular translational motion in the synthesis of novel (2) rotaxanes."
- Keatch, Steven Alexander, B.Sc. Thesis: "Biophysical chemistry of EcoKI in physiological solutions: emulating the cell interior."
- –Perez, Emilio Manuel, B.Sc., M.Sc.(Salamanca). Thesis: "Hydrogenbonded synthetic molecular machines."
- -Potok, Stephanie, M.Sc.(E.N.S.C.R., France). Thesis: "Peptide rotaxanes as potential prodrugs."
 - Royer, Sylvain Franck René Michel, , B.Sc., M.Sc.(Rennes). Thesis: "Application of *in vivo* selective methods to investigate novel activity in the enolase superfamily."
 - Sanders, David, M.Chem. Thesis: "Application of ionic liquids towards the nuclear industry."
 - Schirlin, Julien Thomas, B.Sc.(Arizona). Thesis: "Targeting low vapour pressure compounds in gas-phase electron diffraction."

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- Shirran, Sally Lorna, B.Sc.(Strathclyde). Thesis: "Maintaining and analysing protein complexes in the gas phase by electrospray ionisation mass spectrometry."
- Staniland, Sarah Seneviratne, M.Chem. Thesis: "Sulphur rich molecular magnetic materials."
- Tait, Katrina Marion, M.Chem. Thesis: "The use of NMR spectroscopy with *in situ* laser irradiation for the study of azo dye photoisomerisation."
- Wood, Jenny Lynne, M.Sci.(Dunelm). Thesis: "Multi-loading ligand assemblies to transport copper."

THE DEGREE OF MASTER OF SCIENCE BY RESEARCH

Wilson, Kenneth David John, M.Chem.: Organic Chemistry

THE DEGREE OF BACHELOR OF SCIENCE WITH HONOURS

CHEMISTRY

Culme-Seymour, Emily Jane Foster, Peter Robert Hazelton, Loretta Nicole Long, Catriona Mack, Naomi Ruth Magee, Matthew Millican, Frances Kathryn Nilsen, Goran Jan Sehgal, Jane Small, Adam Benjamin Westwood, David Second Class, Division Two Second Class, Division One Second Class, Division One Second Class, Division Two Second Class, Division Two Third Class Second Class, Division One First Class First Class Third Class Third Class

ENVIRONMENTAL CHEMISTRY

Jones, Christopher MacDonald, David McCulloch, Georgia McIvor, Jennifer Lindsey *Robinson, Elizabeth* Sutherland, Stewart Thomas Second Class, Division One Second Class, Division One Second Class, Division Two Second Class, Division One Second Class, Division Two Second Class, Division Two

—in absentiâ

MEDICINAL AND BIOLOGICAL CHEMISTRY

Grange, Sarah Louise Orr, Craig William First Class Second Class, Division One

THE DEGREE OF MASTER OF CHEMICAL PHYSICS WITH HONOURS

CHEMICAL PHYSICS

Andrew, Caroline Margaret Jane Duncan, William James Henry, John Bruce Kafka, Graeme Robert Second Class, Division One Second Class, Division One Second Class, Division Two Second Class, Division One

CHEMICAL PHYSICS WITH INDUSTRIAL EXPERIENCE

Grenfell, Robin James Pascoe Murphy, William James Mutch, Kevin James Ritch, Susie Louise Hughson Second Class, Division One First Class First Class Second Class, Division Two

THE DEGREE OF MASTER OF CHEMISTRY WITH HONOURS

CHEMISTRY

Bell, Murray Graham Gillies. Andrew James Gray, Jennifer Claire Groeneboom, Natalie Leonora Hutchin, Elizabeth Anne Macleod, Kate Ann McBurney, Roy Thomas McCall, Keri Laura Montgomery, James Second Class, Division Two Second Class, Division Two First Class Second Class, Division One Second Class, Division Two Second Class, Division One Second Class, Division One Second Class, Division One Second Class, Division Two

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CHEMISTRY WITH A YEAR IN EUROPE

Berman, James Laurence Brown, Melanie Rosemary Helda Dodds. Sarah Jane Harris, Emily Kate Johnson, Fiona Jane McCourt, Niall Francis Second Class, Division One First Class First Class First Class Second Class, Division Two Second Class, Division One

CHEMISTRY WITH INDUSTRIAL EXPERIENCE

Armstrong, Helen Brittain, Susan Rosemary Donaldson, Lauren Rona Forbes, James Edward Fordyce, Euan Hill, Adrian Hugh *Meyer, Karsten* O'Neill, William John Paramanantham, Menaha Smith, Alison Margaret Stuwe, Sharon Marie Watson, Katherine Helen First Class Second Class, Division One First Class First Class First Class Second Class, Division One *First Class* Second Class, Division One First Class Second Class, Division Two Second Class, Division Two First Class

ENVIRONMENTAL CHEMISTRY

Hopper, Donna Louise Jackson, Rebekah Knowles, John Stevens Second Class, Division One Second Class, Division Two Second Class, Division One

ENVIRONMENTAL CHEMISTRY WITH INDUSTRIAL EXPERIENCE

Daubney, Louisa Jenny Egan, Lindsay Glynn, Elizabeth Jane Gordon, Ross John Roberts, Anne Louise First Class Second Class, Division One First Class Second Class, Division One First Class

MEDICINAL AND BIOLOGICAL CHEMISTRY

Firth, James

First Class

in absentia

SCHOOL OF GEOSCIENCES

Candidates will be presented by the Head of the School of GeoSciences, Professor David E. Sugden, B.A., D.Phil.

THE DEGREE OF DOCTOR OF PHILOSOPHY

- Ahad, Jason Michael Elias, B.Sc.(Ottawa), M.Sc.(Toronto). Thesis: "Evaluating the origins and transformations of organic matter and dissolved inorganic nitrogen in two contrasting North Sea estuaries."
- Biskopstø, Fridbjørg, B.Sc.(Copenhagen), M.Sc.(Lond.). Thesis: Cenozoic structural and stratigraphic development of the Faroe-Shetland Basin and Faroe Graben."
- Clement, Robert Jon, B.Sc.(Wisconsin), M.Sc.(Nebraska). Thesis: "Mass and energy exchange of a plantation forest in Scotland using micrometeorological methods."
- Davison, Stephen, B.Sc.(C.N.A.A.), M.Sc.(Reading). Thesis: "Reconstructing the last pleistocene (late devensian) glaciation on the continental margin of Northwest Britain."
- Dobson, Andrew James, B.Sc.(Leeds). Thesis: "Seismic modelling for the sub-basalt imaging problem including analysis of the boundary element method."
- Doran, Helen, B.Sc.(Queen's, Belfast). Thesis: "Diagenesis of a fractured chalk reservoir: Machar oilfield, Central North Sea."
- Dunningham, Jonathan Paul, B.A., M.Sci.(Cantab.). Thesis: "Longterm evolution of normal fault systems: Controls on the development and evolution of extensional structures in the neotectonic Kenyan rift, East Africa."
- Gibson, Matthew, B.Sc. Thesis: "The localisation of erosional denudation during the growth and decay of the Pyrenean orogen."
- Kourampas, Nikolaos, B.Sc.(Thessaloniki). Thesis: "Plio-quaternary sedimentation and geomorphology within an active fore-arc: Messenia and Eastern Lakonia Peninsulae, Southern Peloponnese, Greece."
- Mancini, Fabio, B.Sc.(Italy). Thesis: "Converted wave imaging in anisotropic media using sea-floor seismic data."
- Martin, Richard, B.A.(Oxon.), M.Sc.(Aberd.). Thesis: "Automated lithofacies predictions from well logs."
- Naylor, Mark, M.Phys.(Oxon.). Thesis: "A discrete element model of orogenesis."
- Pegoraro, Emiliano, B.Sc.(Tuscia). Thesis: "Environmental control on isoprene emission: from leaf to canopy."

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Rewcastle, Joanne, B.Sc.(Salford). Thesis: "Plant protection using arbuscular mycorrhizal fungi."

 Robertson, Lynette Barbara, M.A.(Aberd.), M.Res. Thesis: "Radon emissions to the atmosphere and their use as an atmospheric tracer." Traub, Bärbel Monika, Grad.(Karlsruhe). Thesis: "Anisotropic parameter estimation from PP and PS waves in 4-component data."

THE DEGREE OF MASTER OF SCIENCE

ECOLOGICAL ECONOMICS

—Arnal, Delphine, Eng.(Genbioux Agric., Belgium)

RESOURCE MANAGEMENT

Umealo, Olaakanwa Chinwe, B.Agric.Tech.(Nigeria)

THE DEGREE OF BACHELOR OF SCIENCE WITH HONOURS

ECOLOGICAL SCIENCE: CONSERVATION AND ECOLOGICAL MANAGEMENT

Bryce, Fiona Julia Finch, Richard Alan Ghaui, Edward Thomas Hughes, James David Korbetis, Malamo Mould, Alistair Michael Stewart Walker, Helen Lindsay Second Class, Division One Second Class, Division One Second Class, Division Two Second Class, Division One Second Class, Division One Second Class, Division One Second Class, Division One

ECOLOGICAL SCIENCE: ECOLOGY

—Barambio, Naida Beveridge, Oliver Sebastian Black, Christopher Naylor McDowell, Philip John Sitters, Holly Frances Sutherland, Janette Marion Ann Second Class, Division Two Second Class, Division One Second Class, Division One Second Class, Division One Second Class, Division One First Class

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ECOLOGICAL SCIENCE: ENVIRONMENTAL SCIENCE

Dinsmore, Kerry Jane Gormally, Eimear Maria Jukes, Alison Rosemary Packham, Laura Emily Tara -Salmi, Bertrand Francois First Class Second Class, Division One Second Class, Division One Second Class, Division One Second Class, Division One

ECOLOGICAL SCIENCE: FORESTRY

Collins, Sebastian Paul Heaver, Andrew Martyn Mackintosh, Hamish Owen, Gareth David Second Class, Division Two Second Class, Division One Second Class, Division One Second Class, Division One

ECOLOGICAL SCIENCE: WILDLIFE MANAGEMENT

Bletcher, Jonathan David Harris, Jonathan Edward McCurley, Philip Ross Second Class, Division Two Second Class, Division One Second Class, Division One

ENVIRONMENTAL GEOSCIENCE

Baxendale, Christopher Calder, Richard James Cooles, Holly Davarr Croft, Darryl James Deneven-Lewis, Ryan Charles Ian Dickson, Euan Michael Gardner, Heather Elaine Green, Sophie Louise Hassard, Karen Elizabeth Heaton, Elizabeth Alexandra Hughes, David William Jones, Huw Thomas King, William Peter Wilfred Matheson, Helen McAuley, Willena Esther McKenzie, Rebecca May

Second Class, Division Two Second Class, Division One Second Class, Division One First Class Second Class, Division One Second Class, Division One Second Class, Division Two Second Class, Division One Second Class, Division Two Third Class Second Class, Division Two First Class First Class First Class Second Class, Division One Second Class, Division One

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> *Mellor. Nicholas James* Smith, Iain Waddell, Simon David Philip Wallace, Julia Serena

Second Class, Division One First Class Second Class, Division Two Second Class, Division Two

Second Class, Division Two

FORESTRY

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Karfakis, Theodoros

Allan, Richard David Anderson, Ruth Victoria Barrs, Katie-Louise Taylor Booth, Alison Victoria Brightman, Alistair Colin Buckley, Gavin Paul Burns, Alison Evelyn Bushe, Hannah Jennings Chapman, Stephen Conway, Rachel Mary Corry, Eleanore Charlotte Jane Davies, Emma Lvnn Downie, Andrew Stewart Farrall. Nicola Jane Gray, Matthew James Ogilvie Greenaway, Gemma Louise Jeffrey, Laura Ledingham, Richard John Lees, Daniel James Lithgow, Anneliese MacKenzie, Erin Leeanne McKeen, Richard John Sidhu, Pritpaul Sinclair, Stuart Graeme Suttill, Hannah Louise Taggart, Samantha Towns, Christopher Simon Tuitt, Adrian Walters, Rachel Lucv White, Clare Hannah White, Joanne Elizabeth Wood, Ross David

GEOLOGY

Second Class, Division One Second Class, Division One Second Class, Division Two Third Class First Class Second Class, Division One Second Class, Division One Second Class, Division Two Second Class, Division One Second Class, Division Two Second Class, Division One Second Class, Division One Second Class, Division One Second Class, Division One Second Class, Division Two Second Class, Division One Second Class, Division One Second Class, Division One Second Class, Division One Second Class, Division Two Third Class Second Class, Division One First Class Second Class, Division Two First Class Second Class, Division One Second Class, Division Two First Class First Class Second Class, Division One Second Class, Division Two Second Class, Division One

GEOLOGY AND PHYSICAL GEOGRAPHY

Brown, Calum Kenneth Birnie Burrow, John Edward Chapman, Gemma Claire Cromie, Helen Dickson, Alan Ross Gourlay, Sarah-Jane Lowson Hogg, lain Houssin, Jean-Bernard Lally, Jonathan Philip Malkin, Daniel Neil Mayne, Christopher Adam Punt, Rachel Melanie Rawles, Thomas Guy Edward Scott, Ruth Smith, Robert Sterry, James Robert Stevens, Timothy Dominic Swain, Emily Alice Wickerson, Paul James

Second Class, Division One First Class Second Class, Division One First Class Third Class Second Class, Division One Second Class, Division Two Second Class, Division One Second Class, Division One Second Class, Division One Second Class, Division One

GEOPHYSICS

Anderson, Ashley Burgin, Laura Elizabeth Dundas, Alan Douglas Evans, Miles Christopher Thomas Forbes, Douglas Alexander Haldane, Fiona Rosemary Halliday, David Fraser Hamilton. James William Henderson, Holly Macdonald, Greg MacFarquhar, Peter Paterson, Greig Alexander Tomlinson, Michael Bernard Second Class, Division One Second Class, Division One Second Class, Division Two Second Class, Division One Second Class, Division Two Second Class, Division One First Class Second Class, Division One Second Class, Division Two Second Class, Division Two Second Class, Division Two

First Class Second Class, Division One

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THE HONORARY DEGREE OF DOCTOR OF SCIENCE

Ian Gibson Halliday, M.A., M.Sc.(Edin.), Ph.D., F.R.S.E., Professor of Physics and Chief Executive and Deputy Chairman of the Particle Physics and Astronomy Research Council

SCHOOL OF MATHEMATICS

Candidates will be presented by the Head of the School of Mathematics, Professor T. Alastair Gillespie, B.A., Ph.D., F.R.S.E.

THE DEGREE OF MASTER OF SCIENCE

OPERATIONAL RESEARCH

Tsai, Pei-Chuan, B.Sc.(Lond.) Weng, Qing

THE DEGREE OF BACHELOR OF SCIENCE WITH HONOURS

MATHEMATICS

Aidasani Khyami, Nitesh Alexander, Michael Ryan Aylott, Paul David Ballantyne, John Joseph' Blair, Niall Boyd, Roddy Alexander Guthrie Brown, Gareth Robert Dundas Christie, Robin Conroy, Sara Di Sotto, Laurence Paul Donald, Iain Shamus Ross Duncan, Andrew James Hayton, Robert James First Class Second Class, Division One Third Class Second Class, Division One Second Class, Division Two Second Class, Division One Third Class Second Class, Division One Second Class, Division Two Second Class, Division Two Second Class, Division Two First Class First Class

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Headey, Jessica Ruth Henderson, David Hood, Alistair Andrew William Howard, Alexandra Louise Howell, Elizabeth Laura Huang, Zilin Hughes, Jessica Gwyneth Hutchinson, Laura Lee Inshaw, Kate Elizabeth Jackson, Lauren Elizabeth Jellema, Nicholas Michael Hugo Lear, Joseph Antony Leask, Paul Francis Leeming, Ewan William Lees, Jonathan David Alexander Lees. Tajana Kirsten Lindsay, Alan Euan Marshall, Heather Jane Marshall, Jennifer Marx, Lauren Elise McFarlane, Greg Mitchell, David Grant Malcolm Pokorny, Florian Till Poynton, Colin Thomas Reid, Tiger Mary Richard, Marc David Robinson, Matthew Aron Robinson, Thomas Macaulay Seymour, Mark Keith Shishodia, Ashok Shoulder, Neil Russell Tilston, Neil Shannon Wang, Minsi Warner, David Benedict Thornton Williamson, Euan

Second Class, Division One Second Class, Division One First Class Second Class, Division One Second Class, Division Two Third Class Second Class, Division One Second Class, Division One Second Class. Division One Second Class. Division One Second Class, Division Two Second Class, Division One First Class Second Class, Division One First Class Second Class, Division One First Class Second Class, Division One Second Class, Division Two First Class Second Class, Division One First Class First Class Second Class, Division Two Second Class, Division Two Third Class Second Class, Division One First Class Second Class, Division One Second Class, Division One First Class Second Class, Division Two Second Class, Division Two Second Class, Division One Second Class, Division One

MATHEMATICS AND BUSINESS STUDIES

Kearney, Gillian Anne Pryce, Thomas Michael Second Class, Division One Second Class, Division Two

MATHEMATICS AND PHYSICS

Mitchell, Ross David

Second Class, Division One

in absentiâ

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MATHEMATICS AND STATISTICS

Bonsall, Nicholas Simon Andrew Gladwell, Mary Louise McCulloch, Scott William Owen, Laura Phair, Nicola Kathryn Speller, Thomas William Douglas Trotter, Linda First Class First Class Second Class, Division Two Second Class, Division One Second Class, Division One First Class Second Class, Division Two

THE DEGREE OF MASTER OF ARTS WITH HONOURS

MATHEMATICS

Allum, Melissa Victoria Fleming, Lorna Gladwell, Helen Leung, Hoi Ting Hatty Lloyd, Alastair Richard Graham Walker, Isla Second Class, Division Two First Class Second Class, Division One Second Class, Division One First Class Second Class, Division One

SCHOOL OF PHYSICS

Candidates will be presented by Professor Andy Lawrence, B.Sc., Ph.D., F.R.S.E., Regius Professor of Astronomy

THE DEGREE OF DOCTOR OF PHILOSOPHY

Burkey, Daniel, M.Phys.(Oxon.). Thesis: "Cosmological parameter estimation from galaxy surveys."

-Caputi, Karina Isabel, B.Sc. (Buenos Aires). Thesis: "The role of extremely red galaxies in the history of structure formation."

- --Ciccolini, Mariano Luis, Grad.(De Cuyo). Thesis: "Standard model higgs boson phenomenology at Hadron Colliders."
 - Cleaver, Julie Abigail, B.Sc. Thesis: "Network formation in mixtures of nematic liquid crystal and colloids."

Earl, Alasdair David, B.Sc.(H-W). Thesis: "Supporting the challenge of LHC produced data with ScotGrid."

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- -Floyd, David James Elford, M.Phys. Thesis: "On the host galaxies of quasars."
 - Fox, Joseph Paul, M.Phys. Thesis: "The adsorption of hydrocarbons in porous materials: a computational study."
- Greve, Thomas Rodriguez, M.Sc. (Copenhagen). Thesis: "Dust and gas in the early universe - an observational perspective on galaxy formation and evolution."
 - Johnson, Catharine Olivia Carver, B.Sc.(Vassar). Thesis: "X-ray surveys of active galactic nuclei in field and cluster environments."
 - Kiyani, Khurom, M.Sci.(Lond.). Thesis: "An assessment of renormalization methods in the statistical theory of isotropic turbulence."
 - Marson, Alan Edward, B.Sc. Thesis: "Laser induced fluorescence studies of dispersion by breaking waves."
 - Seery, David James, M.A., C.A.S.M.(Cantab.). Thesis: "Quantum brane cosmology."
 - Sheret, Ian, M.Phys.(Sheffield). Thesis: "The physical properties and composition of vega-type disks."

THE DEGREE OF BACHELOR OF SCIENCE WITH HONOURS

ASTROPHYSICS

Aitkenhead. Stewart Brettle, Laura Jane Rebecca Burnett, Matthew Dubois, Elizabeth Naomi Duncan, Ronald Lyness Dunlop, Ashley Tristan Edwards, Neil Simon Flanagan, Stephen Kevin Owen Fraser, James Alan Ruane Hynan, Katherine Beverley Ann Lavery, Stephen Vittorio Parker, James Robert Mayor *Scott, Vivian* Third Class Second Class, Division One Third Class Third Class Second Class, Division One Second Class, Division One Third Class Third Class Second Class, Division One Second Class, Division Two Second Class, Division One Second Class, Division One

COMPUTATIONAL PHYSICS

Bamford, Thomas Rosh Williams, Samuel Thomas Second Class, Division Two Second Class, Division One

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MATHEMATICAL PHYSICS

McGhee, Ian Patrick Raunu, Gurprit Singh Wilkinson, Caroline Maree First Class First Class Second Class, Division One

PHYSICS

Allason, Daniel James Cooke, Richard Henry Todd Morrow Dolbear, Samuel Brian Imong, Jonathan Panat Josephides, Alexis Noel Lyons, Michael MacLean, Colin Douglas Martin, Lliam Kennedy Mathieson, Christopher Michael Robertson, Scott Fraser Ross, Erin Scott, Matthew James Stephen, Christopher John Taylor, Jamie Tweedie, Blair Peter Watt, Nicola Ruth

Second Class, Division One Second Class, Division Two Second Class, Division Two Third Class First Class Second Class, Division Two First Class Second Class, Division One Second Class, Division Two Second Class, Division One First Class Second Class, Division One

PHYSICS WITH METEOROLOGY

Queen, Sarah Louise

First Class

PHYSICS WITH MUSIC

Creedy, Oliver Jonathan

Second Class, Division One

THE DEGREE OF MASTER OF PHYSICS WITH HONOURS

ASTROPHYSICS

Dalsgaard, Anna Green, James William Jackson, Laura Frances MacIver, Andrew Ross, Alan Stuart Second Class, Division One Second Class, Division One Second Class, Division One Second Class, Division Two First Class

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MATHEMATICAL PHYSICS

Lynn, Stuart Sugden, Kate Elizabeth Polly First Class Second Class, Division One

PHYSICS

Carter, Richard Mark Guerin, Jonathan Alexander Mitchell, Lawrence Pittam, Robert Neil Muir Stevenson, Samuel Dikran Flett Styles, Nicholas Adam Third Class Second Class, Division One First Class First Class Second Class, Division One First Class

COLLEGE OF SCIENCE AND ENGINEERING

Candidates will be presented by the Head of the College of Science and Engineering, Vice-Principal Professor Grahame Bulfield, C.B.E., Ph.D., Hon.D.Sc., F.R.S.E.

THE DEGREE OF BACHELOR OF SCIENCE

-Al-Dov, Mohamed Nabeel *—Atkinson, Robert William* Balfour, Katharine Louise Berresford, Jane Selina -Biggar, Jamie Gordon Brand, Chris James Dearnley, Laura Elizabeth Fiddes, Anna Louise Forrester, Alexander Stewart Daigle Galloway, Kevin Green, Kieron Greig, Lynsey Hair, Rupert Robin Harper, Ross Iain Haston, Charles Iain -Hole, Richard Margary

–in absentiâ

2102 Meet Fond du Lac Ave. Milwankee, WI 53206 2102 Meet Fond du Lac Ave. Milwankee, WI 53206 BANK

16

Ingledew, Jonathan Murray Kaliontzoglou, Stavros Kimber, Caroline Jane -Koenig, Matthew Martin, Ian Andrew Phillip McMartin, James Andrew Miller, Stuart James Murray, Robert David Nankervis, Christopher James Reid, Katrina Jan Rensner, Martin James Ridgway, James Alexander Ross, Stuart Ian Scott, Christopher John Sewell, James Anthony Singh, Rashpal Smillie, Anne Marie Spencer, Thomas Charles Anthony Sturgis, Hugh Russell Taylor, Benjamin Roger Hugh Taylor, Thomas William Tsiamis, Andreas Turner, Lesley Anne Wahlberg, Laura Jane Wang, Xiao Xiao Wasserman, Alexander Frederick Weeratunge, Chatrini Ishara Williamson, Mark Paul

THE HONORARY DEGREE OF DOCTOR OF SCIENCE

Brian Frederick Gilbert Johnson, B.Sc., Ph.D., M.A., F.R.S., F.R.S.E., F.Acad.Eu., F.R.S.Chem., Order of the Grand Cross of Brazil, Professor of Inoganic Chemistry and Master of Fitzwilliam College, Cambridge.

in absentiâ



Honorary Degree of Doctor of Science

Professor Brian Frederick Gilbert Johnson, B.Sc., Ph.D., M.A., F.R.S., F.R.S.Ed., F.Acad.Eu., F.R.S.Chem.

Presented by Professor Stephen Chapman, B.Sc., Ph.D., C.Chem., M.R.S.C., Head of the School of Chemistry.

Professor Brian Johnson was born in Northampton, England in 1938 and took his first degree at Nottingham in 1960 before completing his Ph.D. on liquid dinitrogen tetroxide as a non-aqueous solvent at Nottingham in 1963. He then proceeded to M.I.T. to work for a year on a Fullbright Scholarship where he prepared the crystal of the first fully characterised compound known to contain a metal-metal quadruple bond. He returned to the UK in 1964 and for several years taught and carried out research as a lecturer, first at Manchester and later at University College London.

Professor Johnson moved to Cambridge in 1970 where he was elected Fellow of Fitzwilliam College and lecturer in Inorganic Chemistry, and in 1978 was promoted to Reader. At Fitzwilliam he served as College Steward from 1972-77, Admissions Tutor in 1978, Dean from 1986-88, President from 1988-89 and as Acting Master from 1989-91. Called to Edinburgh in 1990 he succeeded Professor Evelyn Ebsworth as the Crum Brown Professor of Inorganic Chemistry and was Head of Department from 1992-95 before returning to Cambridge to take up the Chair of Inorganic Chemistry where he continues to carry out his research and teaching. In 1999 he was elected Master of Fitzwilliam College and from 1993-98 served as a member of Council of the EPSRC, was a member of TOP from 1993-97 and has been Chairman of PUSET from 1998. He has served on many Committees and Editorial Boards and on the NATO Panel for European Institutes.

Professor Johnson is internationally acknowledged as a pioneer of modern inorganic chemistry and can be regarded as one of the founding fathers of cluster chemistry. He has developed and adapted a number of techniques for the study of clusters, and has discovered a wide range of new structural cluster types. He has been a visiting Professor throughout the world and was elected F.R.S. in 1991, F.R.S.E. in 1992 and, amongst many other honours, was awarded the Grand Cross of Brazil for his contributions to Science.

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Honorary Degree of Doctor of Science

Professor Ian Gibson Halliday, M.A., M.Sc.(Edin.), Ph.D., F.Inst.P., F.R.S.E.

Presented by Assistant Principal Professor Richard Kenway, B.Sc., D.Phil., C.Phys., F.Inst.P., F.R.S.E.

Professor Ian Halliday was born in Kelso in 1940. He was educated in the traditional Scottish system at Kelso High School and Perth Academy. At Kelso High School his father was the head mathematics teacher, which may have affected his later career.

At the University of Edinburgh Ian gained a first and an M.A. in Mathematics and Natural Philosophy, and won the Napier and Gadgil prizes. Afterwards he studied for an M.Sc. in the former department of Applied Maths and Theoretical Physics, where he became interested in the behaviour of collisions at very high energy. In particular he became a leading authority on the behaviour, at high energies, of Feynman diagrams.

Professor Halliday then moved to Cambridge and ended up achieving a two year Cambridge Ph.D. which led to a post as an Instructor at Princeton along with a fellowship at Christ's College to return to. His first permanent post was at Imperial College where he spent twenty-five years rising through the academic ranks as a theoretical particle physicist. He was then asked to go to Swansea to turn around their Physics Department which had sunk to an RAE score of 2 in Physics and 1 in Applied Physics. In the last RAE they obtained a 5.

Professor Halliday then became Chief executive of PPARC (the Particle Physics and Astronomy Research Council). In PPARC he has been responsible for a budget of over £300 million per annum. This budget has almost doubled in his seven years at PPARC, and more importantly, it has led to a clear leap in the capabilities of UK Physics as funded by PPARC, and a great increase in the visibility and impact of UK Physics at both a policy level and at a physicist level.

In Brussels, Professor Halliday was a member of DG Research's senior advisory committee EURAB and was Vice Chair at the beginning. EURAB has clearly been influential in setting up the proposed seventh Framework programme. Ian Halliday has also served as the UK delegate on many European Councils and Advisory Boards.



THE GENERAL COUNCIL of THE UNIVERSITY OF EDINBURGH Charles Stewart House 9-16 Chambers Street Edinburgh EH1 1HT Email General.Council@ved.ac.uk Telephone (home) 0131 664 2717 General Council Office Telephone 0131 650 2152

Warm congratulations on your graduation from the University of Edinburgh.

On receipt of your degree, you automatically become a member of the General Council of the University of Edinburgh. The General Council comprises all graduates, honorary graduates and honorary fellows, members of the University Court, and professors, readers and lecturers of at least one year's standing. It is the continuing voice of the body of graduates in the governance of the University. The General Council's responsibilities are set out in various Acts of Parliament but, briefly, through its Business Committee and its three Assessors on the University Court, it has the power to look into all questions affecting the well-being and prosperity of the University and to make recommendations to the University Court. Most importantly, the members of the General Council elect the Chancellor of the University.

The General Council is very keen to encourage recent graduates to play an active role in its work.

As a member, you will receive as part of Edit, the University of Edinburgh magazine, the Billet of business for the statutory half-yearly meetings of the General Council, which you are warmly invited to attend. We encourage you to involve yourself in the work of the General Council, by voting at the annual elections, and by standing for nomination as a member of the Business Committee or as an Assessor to the University Court. The Billet within Edit will help to keep you informed of current developments in the University. You will find further information and contact details on the General Council website at www.general-council.ed.ac.uk. The Secretary of the General Council will be pleased to hear from you at any time if you have queries or comments.

If you have been awarded a Certificate or Diploma from the University, you are eligible to receive a University Passport (by contacting Development & Alumni at <u>development@ed.ac.uk</u>). We hope that you will wish to keep in touch as an alumnus or alumna of the University. If you already hold a degree from the University your membership of the General Council dates from your first degree and is unaltered.

We wish you every success in your future life, and we very much hope that you will maintain a lifelong association with your University.



Alatem

Secretary

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The University of Edinburgh Scholarship Programme

Attracting the most gifted students from the UK and from overseas lies at the heart of the University of Edinburgh's vision. The cost of higher education, however, can be a major obstacle for many students who, while meeting the University's admission requirements, struggle to find the necessary funds to take up their place.

The University of Edinburgh believes that as far as possible a student's financial situation should not be allowed to deny them access to a University education. One way of assisting such students is through supporting the University's Scholarship programme.

You can support scholarships at Edinburgh by endowing funds to establish a named scholarship which can be established for an investment starting at £25,000. With this option you can choose to name a scholarship after yourself, family or in honour of another person. You can also choose whether you wish the scholarship to support a particular discipline at the University or to leave it open to all students. Alternatively, you may wish to contribute to the Edinburgh Fund (or Alumni Fund) which is supported by graduates and friends from around the world and makes annual gifts to the University Scholarships programme. Since 1997, over £2M has been awarded to scholars studying at Edinburgh.

A further way of funding scholarships is by leaving a legacy to the University. The University has a long and proud tradition of being remembered in people's wills and you can choose to make your legacy support students at Edinburgh for years to come. For further information, please contact the University's Legacy Manager at the address below or visit <u>www.dev.ed.ac.uk/legacies.htm</u>

The Development and Alumni Office works closely with the University's Scholarships and Student Finance Office to ensure that donors are provided with the best possible information about establishing a scholarship. Details on scholarships currently available at the University can be found on our website: <u>www.scholarships.ed.ac.uk</u>

Your gift can make a real impact in the lives of students who might not otherwise be able to attend the University. If you are interested in making a donation towards a new or existing scholarship, or you would like further information on the University of Edinburgh's Scholarships Programme, please contact:

Development and Alumni, The University of Edinburgh, Charles Stewart House, 9-16 Chambers Street, Edinburgh EH1 1HT.

Tel: 0131 650 2240 Fax: 0131 650 2239 E-mail: <u>edinburghcampaign@ed.ac.uk</u>



The McEwan Hall

In 1875, R. Rowand Anderson was selected as the architect to design new accommodation for the University's Medical Faculty. Included in his original plans were designs for a graduation hall.

The proposal to build the hall was initially deleted from the plans due to the lack of funding. However, in 1886, William McEwan,

founder of the brewing company of the same name, offered to fund the building.

William McEwan was born in Alloa in 1827 and served as Liberal Member of Parliament for Central Edinburgh from 1886-1900. A wealthy man, well known for his philanthropy, yet modest and rather retiring, McEwan wanted to provide the University with a large and splendid building which might also serve as a concert hall for major orchestral performances.

In 1888, work started on the grand semi-circular hall with its two steeply-raked galleries. Built in the Early Italian Renaissance style, its bold façade is flanked by projecting towers, each arranged to contain separate spiral stairs for each gallery. The sculpture over the door by Farmer and Brindley, London, depicts a graduation ceremony and the Latin inscription records McEwan's generosity.

The Hall itself was finished by 1894 but McEwan then undertook a lavish scheme of decoration. The decorations, by the artist William Palin, took some three and a half years' work and convey something of how the ideal of a University was viewed at that time. The dome is divided by ribs into 15 panels and at the base of each of the panels is the figure of a seated female, 13 of which hold an instrument appropriate to the academic discipline she represents. The lower part of the dome is a Pantheon of famous names connected with the University. Around the inner edge of the dome is an inscription of a passage from the Scripture: "Wisdom is the principal thing; therefore get wisdom: and with all thy getting, get understanding. Exalt her and she shall bring thee to honour."

Over the top of the platform is an immense painted panel entitled "The Temple of Fame", which depicts 80-90 philosophers and students ascending the steps. At the very top are the three goddesses representing Science, Art and Literature. The central deity, Literature, has a quill in one hand, and upon her knee is the Book of Fame. Under this immense panel, and either side of the platform, are four smaller panels. Of particular interest is the right-hand panel, viewed from the audience. It is a large fresco, representing Minerva, the tutelary deity of the University, seated upon a marble throne in the grove of Academia. In the group of figures on her left, there is a portrait of the donor, William McEwan (with arms crossed and long white beard), making the gift of his Hall. On either side of the platform, above the doors, are roundels of Sir Walter Scott (left) and Thomas Carlyle (right), both alumni of Edinburgh University.

The Hall was officially opened on December 3rd, 1897 with a ceremony at which the Honorary Degree of Doctor of Laws was conferred upon William McEwan.

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PROGRAMME OF MUSIC

From 2.30 p.m. to 3.00 p.m. the following Programme of Music will be performed on the Organ by JOHN PHILIP KITCHEN, M.A., B.Mus., Ph.D., F.R.C.O., L.R.A.M., University Organist.

Sonata No. 4 in B Flat	Felix Mendelssohn
Concerto del Sigr Torelli	arr. J.G. Walther
Concerto in B Flat	John Stanley

At the entry of the Academic Procession

THE PRINCE OF DENMARK'S MARCHJeremiah Clarke

After the Ceremony

SORTIECharles Tournemire

Printed by The University of Edinburgh Printing Services 13 Infirmary Street, Edinburgh EH1 1LT



Graduation Ceremony

WEDNESDAY, 15 JULY 1998 McEWAN HALL 11 a.m.

Faculty of Science and Engineering

ORDER OF PROCEEDINGS

PROGRAMME OF MUSIC

The Programme of Music is printed on the back cover.

ACADEMIC PROCESSION

The Assembly is asked to stand as the procession enters the Hall.

OPENING PRAYER

CONFERMENT OF DEGREES

THE VICE-CHANCELLOR

THE BENEDICTION

ACADEMIC PROCESSION

The Assembly is asked to remain standing as the procession leaves the Hall.

(Continued on inside back cover)

Please do not use flashlight photography during the opening prayer or the Benediction

RECOMMENDED FOR DEGREES

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THE HONORARY DEGREE OF DOCTOR OF SCIENCE

- Alfred Bader, C.B.E., B.Sc., B.A., M.Sc., M.A., Ph.D., Hon.D.Sc., Hon.LL.D., Hon.D.Univ., Hon.F.R.S.C., F.R.S.A., Founder of the Aldrich Chemical Company and Co-Founder of the Sigma-Aldrich Corporation.
- Peter Ware Higgs, Ph.D., Hon.D.Sc., F.R.S., F.R.S.E., F.Inst.P., Professor Emeritus of Theoretical Physics, the University of Edinburgh.

FACULTY OF SCIENCE AND ENGINEERING

THE DEGREE OF DOCTOR OF PHILOSOPHY

IN THE FACULTY OF SCIENCE AND ENGINEERING

- Abbas, Tariq Rashad Ali, B.Sc.(Umm Al Qura, Saudi Arabia). Thesis: "High-field ¹H NMR spectroscopic studies of prochiral protons attached to chiral moieties used in asymmetric reactions."
- Ballinger, William Edmund, B.Sc. Thesis: "Cosmological information from redshift surveys."
- Barber, Andrew Graham, B.A.(Oxon.). Thesis: "Linear type theories, semantics and action calculi."
- Beattie, David Allan, B.Sc. Thesis: "ZEKE-PFI photoelectron spectroscopy of halogens and iodine-rare gas van der Waals complexes."
- Bodammer, Georg Karl Hermann, M.Phil.(Cantab.) Thesis: "Device oriented experimental investigation of the alignment of liquid crystals."
- Bremner, Murray Alexander, B.Sc. Thesis: "The development of methodology for the chemical synthesis of oligonucleotides."
- Brown, Daniel Hugh, B.A.(Oxon.). Thesis: "Studies of the hybrides of the heavier group 14 elements."
- Bruns, Glenn Robert, B.S.(Calif. State), M.Sc.(Wang Inst.). Thesis: "Process abstraction in the verification of temporal properties."
- Buchanan, Sarah Katharine, B.Sc. Thesis: "Seismicity and tectonics of the Central Indial Ocean Basin."

-in absentia

- Buckley, Henry David, B.A.(Oxon), M.Sc.(Sussex). Thesis: "Protostellar infall: modelling submillimetre spectral line observations."
- Cormack, Andrew James, B.Sc. Thesis: "Threshold photoelectron studies of the hydrogen halides and fluorine."
- Cosgrove, John Augustine, B.Eng.(C.N.A.A.). Thesis: "Measurement of two phase-flow using particle image velocimetry."
- Despinoy, Xavier Luc Marie, Ing.(Lille). Thesis: "A pyrrolizin-3-one route to naturally occurring pyrrolizidines."
- Dewhirst, Timothy Peter, B.Sc. Thesis: "Multiple CCD array digital particle image velocimetry."
- -Dixon, Richard Thomas, B.Sc. Thesis: "Reflection absorption infra-red spectroscopy investigations on the Ni (111) surface."
- Douglas, Peter Murray, B.Sc.(H-W). Thesis: "An investigation of the circulation in a numerical model using tracer distributions."
- Fitzgibbon, Andrew William John, B.Sc.(N.U.I.), M.Sc.(H-W). Thesis: "Stable segmentation of 2D curves."
- Freeman, Jason Alexis Sebastian, B.Sc.(Sheffield). Thesis: "Learning and generalisation in radial basis function networks."
- Galloway, Stuart James, B.Sc.(Paisley), M.Sc. Thesis: "A numerical study of the Stefan problem with an application to the growth of crystalline microstructure."
- Goodenough, Kathryn Mary, B.A.(Oxon). Thesis: "Geochemistry of Gardar Intrusions in the Ivigtut area, South Greenland."
- Haydon, Thomas Richard, B.Sc.(Manc.). Thesis: "Turbulence and vorticity generated by breaking waves."
- -Hong, Duk-Geun, B.Sc., M.Sc. (Gangwon, Korea). Thesis: "Luminescene stimulated from quartz by green light: developments relevant to dating."
 - Howieson, Kathryn Elizabeth, B.Sc.(E. Anglia). Thesis: "A diffuse reflectance infra-red study of the alkali promotion of copper-based catalysts."
 - Hutchison, Mark Thomas, B.Sc. Thesis: "Constitution of the sublithospheric mantle shown by diamonds and their inclusions."
 - Jackson, Neil Angus, B.Sc. Thesis: "Energy disposal in state to state bimolecular collisions."
 - Kelsey, Alasdair, B.Sc. Thesis: "Computer simulation of pressure effects in tetravalent materials."
- —Lin, Wen-Jih, B.Sc. (Nat. Tsing Hua, Taiwan). Thesis: "High-resolution x-ray scattering studies of thin film superconductors and semiconductors."
- --Luz Filho, Saturnino Francisco, M.Sc. (Brasilia). Thesis: "Tableau algorithms for categorical deduction and parsing."

—in absentiâ

Maclean, John Ronald, B.Sc. Thesis: "Iso-electronic compounds and elements under high pressure."

Mair, Karen. B.Sc. Thesis: "Experimental studies of fault zone development in a porous sandstone."

- Marr, Marcus Iain, B.Sc. Thesis: "Descriptive simplicity in parallel computing."
- --McCartney, Michael Stephan Karl, B.Sc. (Southampton). Thesis: "Fluorescent molecular hydrogen in the reflection nebula NGC 2023."
- McQuillan, Robert James, B.Sc. Thesis: "Production isolation and characterisation of fullerenes and related species."
- --Monroy-Borja, Raul, B.Sc. (U.A.M., Mexico), M.Sc. (I.T.E.S.M., Mexico), M.Sc. Thesis: "Planning proofs of correctness of CCS systems."
 - Montini, Emmanuel, B.Sc.(Montreal). Thesis: "Questions related with the inversion of the fourier transform in dimensions greater than 1 for functions in \pounds^{p}_{d} ."

Morrey, Martin William, B.Sc.(Birm.), M.Sc.(Nottingham). Thesis: "Observations of barriers to mixing in the stratosphere."

Morrison, Carole Anne, B.Sc. (Strathclyde). Thesis: "Saracen: a new approach to combining gas electron diffraction and AB initio data."

Morton, Gail Helen, B.Sc. Thesis: "The chemical synthesis of proteins."

- Pike, Andrew Derek, B.Sc.(E. Anglia). Thesis: "A study of the cytochrome c₃ from *shewanella* ncimb400 and the flavocytochrome b₂ from *saccharomyces cerevisiae*."
- Plows, Fiona Lucy, B.Sc. Thesis: "Supersonic jet spectroscopy of laser desorbed molecules."
- Prat Sala, Mercè, Lic., M.Sc.(Barcelona), M.Sc. Thesis: "The production of different word orders: a psycholinguistic and developmental approach."
- Rae, Christine Mary, B.Sc.(H-W). Thesis: "The design and synthesis of potential inhibitors of fucosyltransferases."
- Rowland, Paul Anthony, B.Sc. Thesis: "Light hadron spectroscopy in quenched QCD."

Russo, Claudio Vittorio, B.Sc. Thesis: "Types for modules."

- Samman, Mohammad Salem, B.Sc., M.Sc.(King Abdul Aziz). Thesis: "Topics in seminear-ring theory."
- Short, Duncan Matthew, B.Sc. Thesis: "The location of the cytochrome c recognition site on flavocytochrome b_2 ."
- Smith, Douglas Andrew, B.Sc. Thesis: "Structure of the QCD vacuum and low-lying eigenmodes of the Wilson-Dirac operator."
- Soliva, Marieta Francesca, B.Sc.(Birm.). Thesis: "Structure dynamics and formation of the colloidal liquid."

3

-in absentiâ

- Sowerbutts, Alison Anne, M.A.(Cantab.). Thesis: "Coeval extension sedimentation and arc-volcanism along the Oligo-Miocene Sardinian Rift."
- Sweeney, Gillian Michelle, B.Sc. Thesis: "The state-to-state dynamics of the reactions of oxygen atoms with hydrocarbons."
- Turner, Jonathan David, B.Sc.(Lond.). Thesis: "The subsidence of sedimentary basins."
- Vieira, Renata, M.Sc.(Rio Grande do Sol, Brazil). Thesis: "Definite description processing in unrestricted text."
- Walker, Virginia Ashley, B.S.(Calif.), M.Sc. Thesis: "One tone, two ears, three dimensions: an investigation of qualitative echolocation strategies in synthetic bats and real robots."
- Westhead, Martin David, B.Sc. Thesis: "Continuous Automata: bridging the gap between discrete and continuous time system models."
- Withell, Kirsti, B.Sc. Thesis: "Gas-phase pyrolysis of amino and amidomethylidene Meldrum's acid derivatives."
- -Yang, Taek-Jin, B.A., M.Sc. (Soongsil, Korea). Thesis: "A study of renormalization group methods applied to fluid turbulence."

THE DEGREE OF MASTER OF PHILOSOPHY IN THE FACULTY OF SCIENCE AND ENGINEERING

Ling, Budi Halim, B.Eng.(N.S.W.). Thesis: "Applicative notions in MLlike programs."

THE DEGREE OF MASTER OF SCIENCE BY RESEARCH IN THE FACULTY OF SCIENCE AND ENGINEERING

- Aitken, Suzanne Jill, B.Sc.: P-450 monooxygenases: their application in biocatalysis
- Cavaco, Sofia Carmen Faria, B.Sc.(Lisbon): Computational methods for locating sound sources

Henzing, Alexander John, B.Sc.(Leiden): Biological Chemistry

—in absentiâ
THE DEGREE OF MASTER OF RESEARCH IN THE NATURAL ENVIRONMENT

Armstrong, Barry, B.Sc.(Glasg.) Irranca, Antonio Leonardo, B.A.(Cantab.) Newbery, Polly-Jane, B.Sc.(Leeds) Odoni, Nicholas Alan, B.Sc.(Plymouth) Roy, Samita, B.Sc. Samuel, Sarah Louise, B.A.(Oxon.) Shaw, David Terence, B.Sc.(Wales)

THE DEGREE OF MASTER OF PHYSICS WITH HONOURS

ASTROPHYSICS

FIRST CLASS

Neil, Daniel James Walton, Barney Richard

> SECOND CLASS Division One

Higgins, Alisdair Patrick Openshaw

MATHEMATICAL PHYSICS

FIRST CLASS

Barker, Edward Stuart Stott, Andrew David

> SECOND CLASS Division One

Banham, Stuart Neil McNair, Neil Andrew

PHYSICS

FIRST CLASS

Byrom, Calum John Edington, David William Neil Guthrie, Malcolm Thomas, Alexandra Elizabeth

> SECOND CLASS Division One

Lenehan, Kevin John

THIRD CLASS

Megaughin, Gillian

THE DEGREE OF BACHELOR OF SCIENCE WITH HONOURS

IN THE FACULTY OF SCIENCE AND ENGINEERING

ARTIFICIAL INTELLIGENCE AND COMPUTER SCIENCE

SECOND CLASS Division One

Gonnella, Gregor Thomson Nishiuchi, Hiroko Perry, Jonathan Edward Pllu, James Martin Schofield, Daniel Antony Simpson, Jonathan Mark Watson, Kenneth Waugh, John Paul —Young, Chien Hui

Division Two

Chauhan, Saleem Shehzad Dick, Gordon John Erskine King, Vincent John Ogilvie, Alan Thomas

ARTIFICIAL INTELLIGENCE AND MATHEMATICS

7

FIRST CLASS

Betley, Abigail Loise Cobb, Thomas Dhiru Huber, Christine

> SECOND CLASS Division Two

McClements, Mark Samuel

ARTIFICIAL INTELLIGENCE AND PSYCHOLOGY

FIRST CLASS

Wishart, Andrew

SECOND CLASS Division One

Darrington, Sarah Paula Margaret Lingstadt, Toby White. Nicholas Edward Alfred

ASTROPHYSICS

FIRST CLASS

Caldwell, Ivor Joseph

SECOND CLASS Division One

—Grote, Jan Christoph Hedderman, Darren Patrick Powada, David

Division Two

Anderson, Tom Watson Bryant, Thomas David Roberts, Alexander Hugh Williams

THIRD CLASS

Crabbe, David Robert Deane, John Edward Lester Ferrier, Adam Gregory Riddell, Alasdair Forrest Temple, Bevis Christian

CHEMICAL PHYSICS

SECOND CLASS Division Two

Cook, Alexander Carleton

THIRD CLASS

Nicholson, Janet

CHEMISTRY

FIRST CLASS

Cameron, Robin Andrew John Creed, Timothy Robertson, Lindsey Catherine

SECOND CLASS Division One

Brunton, Mhairi Ishbel Cessford, Alastair George Crawford, Lynne Ashlene Duncan, Jenny Munro Page, Kevin Maiden Taylor, Helen Jane

Division Two

Cartwright, Dale Derek John Coventry, David Neil McDougall, Roddy William Muthegu, Mercyllyna Williams, Paul Anthony

THIRD CLASS

—Bruce, Calum King, Roddy Thompson, Adam Robert

CHEMISTRY WITH A YEAR IN EUROPE

SECOND CLASS Division Two

Wyllie, Gordon Peter

CHEMISTRY WITH INDUSTRIAL EXPERIENCE

FIRST CLASS

Aird, Jennifer Irene Crawshaw, Melanie Jayne Curley, Karen Sheena Dodds, Emma Katharine Moir, Elizabeth Margaret Ost, Tobias William Barr Pringle, Jennifer Mary

> SECOND CLASS Division One

Cantlay, Alex John Dick, Caroline Mary Emma Lightfoot, Catherine Jane -Pickard, Matthew Thomas Sutherland, Stephen Paul

COMPUTER SCIENCE

FIRST CLASS

Birkett, Andrew Douglas Leather, Hugh James Mace, Simon Christopher Pilkington, Caroline Jane

SECOND CLASS Division One

Benn, Simon Kenneth Croy, Stuart Kenneth Hannah, Colin Hossell, Japheth Eric Hurley, Jay Clive McNeill, Christopher James —*Miller, Peter Michael* Reynolds, Steven Alexander Roberts, Alastair Bernard —*Sherratt, Ian Bates*

Division Two

Alexander, Gareth Crawford, Andrew Stephen Bell Hamilton, Ross Andrew Keir, Scott Murray Morris, Neil Andrew Randles, Mark James Ross, Stuart Christopher Sansom, Derek John —*Vasileiadis, Dimitrios* Wild, Campbell Jonathan Worth, Paul Brooks Chandler

THIRD CLASS

Morrell, Richard Clive

COMPUTER SCIENCE AND MANAGEMENT SCIENCE

SECOND CLASS Division One

Malvisi, Andrew James Siah, Serena Lilin

Division Two

Jackson, Ross

FIRST CLASS

Crouch, Charles Edward

SECOND CLASS Division One

Black, Callum

Division Two

Forrest, David Grant

COMPUTER SCIENCE AND PHYSICS

SECOND CLASS Division One

McGuigan, Mark

ENVIRONMENTAL CHEMISTRY

FIRST CLASS

Saunders, Ruth

SECOND CLASS Division One

Booth, Ben Berry Boyd Culshaw, Nicola Marie Flockhart, Claire Angela Smith, Pamela Ann

Division Two

Catto, Christopher Forbes MacLeod, Catriona Jane

THIRD CLASS

-Gardner, Andrei Jonathan

ENVIRONMENTAL CHEMISTRY WITH INDUSTRIAL EXPERIENCE

FIRST CLASS

Gimpel, Jenny

SECOND CLASS Division Two

Henderson, Fiona

ENVIRONMENTAL GEOSCIENCE

FIRST CLASS

Burke, Ian Terence Speed, Craig Duncan

SECOND CLASS Division One

Baird, Thomas Alexander Joseph Copeland, Matthew Scott Kilmurray, Frances Jane Pearce, Sarah Helen Tinker, David John Turner, Jacqueline Whiteford, Joanna

Division Two

Griggs, Angela Jane Henry, Vanessa Anne McGurk, Sinead Catherine Pierpont, Robert Mackenzie Taylor, Andrew Ian

THIRD CLASS

Westaway, Elouise Johanna

GEOLOGY

FIRST CLASS

Adamson, Helen Mary Barker, Stephen Richard Bingham, Nicola Jane Ibbertson, James Stirling, Eleanor Jane

SECOND CLASS Division One

Bruce, Sarah Jane Doughty, Georgina Lucy Duncan, Jonathan Charles -Forrest, Iain Campbell Harris, Elizabeth Hellawell, Joanne Holland, Benjamin Sebastian Alexander Holroyd, Alexandra Clark Lange, Simon Paul Morgan, Benjamin Emrys Pearse, Scott Pitcairn, Iain Kerr Stewart, Sarah Elizabeth Thompson, Patricia Maeve Eleanor Walker, Marie White, Alan

Division Two

Epps, Christopher Michael James Gibbins, Rachael Eve Jackson, Taralinn Kurkowski, Stephen James Robertson, Ewan James Spence, Keith Harvey

GEOLOGY AND PHYSICAL GEOGRAPHY

FIRST CLASS

-Barnes, Ian Gregory

SECOND CLASS Division One

Ballard, Mark Gracie, Guy Miller Green, Fraser McKinnon Holt, Nicola Charlotte McHardy, Alan Roy Scheltinga, Leo Simm, Imogen Laura Jane

SECOND CLASS Division Two

Luscombe, Timothy Charles Robertson, Barnabe Shane Samuel, Christopher David Robert

GEOPHYSICS

FIRST CLASS

Davies, Thomas Owen Gardiner, Alexander Benjamin Taylor, Susanna Katharine Wright, David Allan

SECOND CLASS Division One

Floyer, James Antony Hall, Sarah Horsburgh, John Moore, Robert Anthony Nicholson, Barry John

---in absentiâ

Division Two

MacNeill, Suzanne Mooney, Victoria Margaret ---Mulholland, James

THIRD CLASS

Barr, Peter Charles William —Gillies, Geoffrey Samuel

MATHEMATICAL PHYSICS

FIRST CLASS

Duguid, Ian Martin Graves, Alexander Benjamin McCrory, Lisa

> SECOND CLASS Division One

McGovern, Aidan Patrick John Wilson, Lyn May

Division Two

Byrne, Ann Louise Hall, Stevaan

THIRD CLASS

Wilson, Emma Louise

MATHEMATICS

FIRST CLASS

Esson, James George *—Hubbard, Charles Edward Stuart* MacKenzie, Shona Mason, Colin Stuart

SECOND CLASS Division One

Bates, Timothy Owen Carter, Alexander Richard Hueber, Lillian Friederike Mackintosh, Stephen Andrew Morris, Daniel Jonathan —*Napper, William Andrew* Porter, Valerie Anne Senior, Elizabeth Margaret Smith, Pamela Nan Elizabeth Tyrell-Kenyon, Alexander Simon Watters, William John

Division Two

King, Lewis Alexander Thomson, Russell Williams, Gillian Catherine

THIRD CLASS

Hunter, Gillian Elizabeth Sharkey, Stephanie Anne Simpson, David

MATHEMATICS AND BUSINESS STUDIES

THIRD CLASS

Bennett, Simon John Black, Lorna Elizabeth

MATHEMATICS AND PHYSICS

FIRST CLASS

Lindsey, Andrew James

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MATHEMATICS AND STATISTICS

FIRST CLASS

Ferro, Christopher Andrew Thornton Frankel, Jolyon Tobias McCulloch, Craig Ross, Katy Anne Russell, Iain Andrew

> SECOND CLASS Division One

Brennan, Paul Grace, Ian Arthur William Tomic, Tamara

Division Two

Hasson, Jennie Jordan, Pauline Parr, Sarah Jane

THIRD CLASS

Bradley, Sheila Anne

PHYSICS

SECOND CLASS Division One

Dineley, Judith Anne Forsyth, Russell Haywood, Theodore James

Division Two

—Beattie, Scott James Corti, Mark Justin Donald, Gordon George Edwards, Alan Edward Carson MacPherson, Duncan Muir

McIntosh, Lee James McKechnie, Gregor Alexander Shepherd, Jason Alexander Spink, Emily Jane Thornton, Michael Lee

THIRD CLASS

Harper, Keith McIlwrath, Shirley Ann Stewart, Martin McNab

PHYSICS WITH MUSIC

FIRST CLASS

Kemp, Jonathan Andrew

STATISTICS AND BUSINESS STUDIES

THIRD CLASS

Simpson, Craig Robert

THE DEGREE OF BACHELOR OF SCIENCE

IN THE FACULTY OF SCIENCE AND ENGINEERING

 Anderson, Derek Hugh Berend, Louise Susannah
Beveridge, Colin Alasdair Ross Bowring, William
Britton, Alexander Dale Broster, Jonathan Paul
Brown, Steven Eric Brownhill, Matthew James Burnett, Graham Craig
Buxton, Maria da Graça Henriques Chaves Carroll, Angela Dawn Coupar, Philip Davis, Adam Simon
Dillea, Richard Michael Robert

Drayson, Liam Mark Earl, Simon Ashton Emslie, Richard English, Kirsty Victoria Farrell, Sean John

-Ferguson, Frederick Eugene Fraser, Simon John William Grayson, Andrew William Gustard, James Andrew

Harrison, Malcolm William Hunt, Philip Alexander Jackson, Stephen Norman Jaigirdar, Mashfuka Lindsay, Donald Robert Longworth, James Phillip Ashley Mackenzie, Paula Jane McLaughlan, Derek James Millar, Andrew Mitchell, Elis Mullan, Conor Mundy, Caroline Elizabeth Murray, Gavin Robert Ross Nicholson, Faith Noden, Christopher John Benedict O'Connell, Claire Margaret —Paton, Michael Bryan James Rae, Douglas Murray Robertson, Alan Iain Sanchez-Martinez, Carlos Andres -Sharp, Douglas Alistair -Slezak, Michal Phadraig Spinks, Martin Thomas, Marc Gordon Tong, Christine Man Ying Tryner, Peter David

- Wallace, Barry Watt, Steven Jonathan —Wheaton, James Augustus Delf
 - Wilson, Kay

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🕂 in absentià



THE McEWAN HALL

The University of Edinburgh (then known as The Tounis College) opened in 1583 on the Kirk o' Field site—famous as the scene of the murder of Lord Darnley in 1567. The original buildings continued in use until the third quarter of the eighteenth century. In 1789 a new building, now known as Old College, was begun to the design of Robert Adam and later William Playfair. By the late 1860s, the University was growing too large for its accommodation there and it was agreed to expand. Following a decision to rebuild the Royal Infirmary beside the Meadows, an appeal was launched in 1872 for funds to re-house the University's Medical Faculty nearby. In 1875, R. Rowand Anderson was selected as architect by competition and his original plan included a graduation hall.

The appeal fell far short of the desired amount and the appeal committee approached the government of the day, headed by Disraeli, for help. However, it refused to contribute unless the proposal to build the hall was deleted from the plans. This having been done, work on the Medical School started in 1878.

In 1886, William McEwan, founder of the brewing company of the same name, offered to fund the building of the Hall. McEwan was born in Alloa in 1827 and served as Liberal Member of Parliament for Central Edinburgh from 1886-1900. A wealthy man, well known for his philanthropy yet modest and rather retiring, he wanted to provide the University with a large and splendid building which might also serve as a concert hall for major orchestral performances. So McEwan himself generously contributed sums amounting to £115,000 for the building of the Hall.

Rowand Anderson revised his plans and, in 1888, work started on a grand semi-circular hall with two steeply-raked galleries. Built in the Early Italian Renaissance style, its bold façade is flanked by projecting towers, each arranged to contain separate spiral stairs for each gallery. The sculpture over the door by Farmer and Brindley, London depicts a graduation ceremony and a Latin inscription records McEwan's generosity. The domed roof is surmounted by an ornamental lantern, 30 feet high.

The Hall itself was finished by 1894 but McEwan then undertook a lavish scheme of decoration. The decorations, by the artist William Palin, took some three and a half years' work and convey something of how the ideal of a University was viewed at that time. The dome is divided by ribs into 15 panels. At the base of each of the panels is the figure of a seated female. 13 of these figures are named, each holding an instrument appropriate to the academic discipline she represents: Astronomy, Mathematics, Poetry, History, Divinity, Philosophy, Medicine, Oratory, Jurisprudence, Fine Arts, Music, Biology and Physics. The lower part of the dome is a Pantheon of famous names connected with the University. Around the inner edge of the dome is a wide blue band with an inscription, in letters of gold, of a passage from the Scripture:"Wisdom is the principal thing; therefore get wisdom: and with all thy getting, get understanding. Exalt her and she shall bring thee to honour."

Over the top of the platform is an immense painted panel entitled "The Temple of Fame", which depicts 80-90 philosophers and students ascending the steps and discoursing in groups. At the very top are the three goddesses representing Science, Art and Literature. The central diety, Literature, has a quill in one hand, and upon her knee is the Book of Fame. Under this immense panel, and either side of the platform, are four smaller panels. Of particular interest is the right-hand panel, viewed from the audience. It is a large fresco, representing Minerva, the tutelary diety of the University, seated upon a marble throne in the grove of Academia. In the group of figures on her left, there is a portrait of the donor, William McEwan (with arms crossed and long white beard), making the gift of his Hall. The left-hand panel is a subject composition representing "Fame" crowning Success. The two side panels each contain two female figures, those on the right representing "Perseverance" and "Intelligence" and on the left "Imagination" and "Experience".

On either side of the platform, above the doors, are roundels of Sir Walter Scott (left) and Thomas Carlyle (right), both alumni of Edinburgh University.

The organ was originally built by Robert Hope Jones. Because an organ was not included in the original plan of The Hall, sections of it are located in various positions about the Hall, only some of which are visible. The organ was completely redesigned and rebuilt in 1953 by the firm of Henry Willis; at that time a detached and moveable console was provided on the floor of the Hall. It was further rebuilt in 1980 by Rushworth and Dreaper Ltd.

The hall was officially opened on December 3rd, 1897 with a ceremony at which the Honorary Degree of Doctor of Laws was conferred upon Mr McEwan.



CONFERMENT OF DEGREES

Degrees will be conferred by the Vice-Chancellor, Professor Sir Stewart Sutherland, M.A., Hon.LL.D., Hon.D.Univ., Hon.D.Litt., Dr.h.c., L.H.D., F.B.A., F.R.S.E.

Candidates for Honorary Degrees will be presented by:

Vice-Principal Professor Roland N. Ibbett, M.Sc., Ph.D., F.R.S.E., C.Eng., F.B.C.S., F.R.S.A. Dr. Alfred Bader

The Vice-Dean of the Faculty of Science and Engineering, Dr D.E.S. Truman, B.A., Ph.D., F.I. Biol., C.Biol., F.R.S.A. Professor Emeritus Peter W. Higgs

Candidates for other degrees will be presented by the Vice-Dean of the Faculty of Science and Engineering.

PRAYERS

The Dean of the Faculty of Divinity, Rev. Professor Duncan B. Forrester, M.A., B.D., D.Phil.

This morning's ceremony is one of nine summer graduations held on consecutive days. Awards are conferred also at two ceremonies in December and, for those graduating *in absentia*, at meetings of the Senatus Academicus in January and May. Approximately 4,400 degrees, and 200 diplomas and certificates, are conferred annually by the University.

PROGRAMME OF MUSIC

From 10.30 a.m. to 11.00 a.m. the following Programme of Music will be performed on the Organ by

JOHN PHILIP KITCHEN, M.A., B.Mus., Ph.D., F.R.C.O., L.R.A.M., University Organist

Sonala no. 4 in B flat	Felix Mendelssohn
Air and Gavotte	Samuel Wesley
PASTORALE	Cesar Franck

At the entry of the Academic Procession	
TRUMPET TUNE FROM KING ARTHUR	Henry Purcell
After the Ceremony	
Тоссата (Symphony No. 5)	. CM. Widor

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Graduation Ceremony

TUESDAY, 21 JUNE 2005 McEWAN HALL 3.00 p.m.

College of Science and Engineering



Welcome to The University of Edinburgh's Graduation Ceremony

Today's ceremony is one of eleven summer ceremonies held in June and July. Degrees are also conferred at three ceremonies in the winter and at several meetings of the Senatus Academicus throughout the year for those graduating *in absentia*. The University confers approximately 5,000 degrees and 250 diplomas and certificates annually.

The ceremony follows time honoured traditions, some of which can be traced back to the founding of the University in 1583.

The Senatus Academicus meets immediately prior to each ceremony to recommend the degrees to be awarded. Following this meeting the Academic Procession is gathered and processes into the hall. The procession is led by the staff bearer followed by members of academic and support staff including the Heads of Colleges, Heads of Schools, the Honorary graduands, the University Rector and members of the University Court. They are followed by the Bedellus carrying the University Mace and leading in the Vice-Chancellor. The Vice-Chancellor (the University Principal) is acting on behalf of the Chancellor, His Royal Highness The Prince Philip, Duke of Edinburgh.

The names of the graduands are announced by the Head of the relevant School and the Vice-Chancellor confers the degree by touching the head of the graduand with the graduation cap. Popular legend has it that the cap was originally made using the cloth from the breeches of John Knox, although other rumours attribute those breeches to the famous Scottish scholar, George Buchanan.

At the close of the ceremony the graduands join the Academic Procession as new graduates of The University of Edinburgh.

ORDER OF PROCEEDINGS

Programme of Music

The Programme of Music is printed at the back of the Programme.

Academic Procession

The Assembly is asked to stand as the procession enters the Hall.

Moment of Reflection

Award of University Benefactor

Conferment of Degrees

Degrees will be conferred by the Vice-Chancellor, Professor Timothy O'Shea, B.Sc., Ph.D., F.R.S.E.

Award of Honorary Degrees

The Vice-Chancellor

Academic Procession

The Assembly is asked to remain standing as the procession leaves the Hall.

Please do not use flash photography during the Moment of Reflection



Distinction of University Benefactor

Dr Alfred Bader, C.B.E., B.Sc., B.A., M.Sc., M.A., Ph.D., Hon.DSc.(Edin.), Hon LL.D., Hon.D.Univ., Hon.D.Sc., F.R.S.A., and Dr Isabel Bader, B.A., Hon.D.S.L.

Presented by Professor Stephen Chapman, B.Sc., Ph.D., C.Chem., M.R.S.C., Head of the School of Chemistry.

Isabel Bader was born in northern Ontario. Her father, Herbert Overton, was a cabinetmaker who emigrated from England to Canada in 1906. Her mother, Stella Sirr, came from a large family in New Liskeard. The Overton family were a deeply religious Protestant family where education was very important. Two of their three children went to university - Isabel won a scholarship to Victoria University in Toronto.

Isabel always had a dream of returning to England, the home of her father. In July 1949 this dream came true and on board SS Franconia from Quebec City to Liverpool with a friend, she met Alfred Bader who was travelling back to Europe to visit relatives. For both of them this was the meeting of soul mates. After nine days Alfred proposed. Isabel eventually rejected him in 1950; she did not believe the mixture of religions would work. Her book, A Canadian in Love, is based on the 80 letters she wrote to Alfred between their meeting in July 1949 and their sad parting a year later. Isabel remained in Bexhill in Sussex where she taught English, History, French, Spanish and Drama and was co-founder of a drama school there and later a costume museum. In 1975 when they saw each other again, Alfred discovered to his surprise and delight that she had not married. They married in 1982. Isabel loves gardening, music and the theatre, is an expert on costumes, and accompanies Alfred on his European lecture tours and visits to chemists. Like him, she is very interested in the Bible, old master paintings, and "investing" in research and scholarship.

Alfred Bader came from a Jewish family originally resident in Kyjov, today in the Czech Republic. His grandfather, Moritz Ritter von Bader, was a civil engineer who helped Ferdinand de Lesseps build the Suez Canal. His mother, Elisabeth Serényi, came from an aristocratic Catholic Hungarian family. When his father died just two weeks after Alfred's birth in 1924, his mother was left with no income in a time of runaway inflation and so gave him into the keeping of his Jewish aunt. In 1938 Alfred was one of 10,000 Jewish youngster allowed to enter Britain. In 1940, Alfred, just 16, was sent to Fort Lennox, an internment camp in Quebec. In the autumn of 1941 he was released into the care of a Montreal sponsor, Martin Wolff. Such is the background that helped to shape the fascinating personality of Alfred Bader.

Martin Wolff became like a father to Alfred, pressing him to further his education. Alfred applied to Queen's University, Ontario, where he was accepted into the Faculty of Applied Science. As a young engineering student Alfred found a summer job as a laboratory technician with the Murphy Paint Company in Montreal, an experience that further whetted his fascination with chemistry. In 1945 he was awarded a BSc in Engineering Chemistry, in 1946 a BA in History and an MSc in Chemistry in 1947. He completed his PhD in Organic Chemistry at Harvard in 1950.

That year he went to Milwaukee to work in research for the Pittsburgh Plate Glass Company and to start his own chemical supply company, literally in a garage. From this small operation, Aldrich Chemicals grew rapidly, moving to bigger and bigger premises as the company became world-famous for the quality and variety of its chemicals. In 1975 Aldrich Chemicals merged with Sigma of St.Louis, a leading supplier of biochemicals. Alfred became president of the merged company Sigma-Aldrich.

In 1991 he left Sigma-Aldrich and had then time to devote to his other great love, Art. Early in life, Alfred became interested in art and art history and he is one of the most renowned private collectors of 17th century Dutch Art. His autobiography Adventurers of a Chemist Collector gives an insight into his remarkable life. Throughout the book he reminds readers of the ABCs that helped to shape his life, Art, the Bible and Chemistry. Appropriately, the cover of this book features a Flemish painting of 1648 titled The Alchemist. Alfred is well known to international art auction houses. He takes particular pleasure in buying dirty old paintings in antique stores or at auction hoping that cleaning will reveal great works. His special skill is in distinguishing work by Rembrandt's students from that of the master himself. Slide-illustrated tales of such detective work have held gallery audiences spellbound for years.

Philanthropists are generally a happy breed, Alfred and Isabel are uniquely so. Their giving, like their life in general, is reflective of their sense of wonder, magic and joyful 'accidents' of existence. Alfred rejoices in the two worlds of chemistry and fine art. Over the years, the Baders have sought out deserving chemists and universities throughout North America, Europe and Israel and have underwritten their research through grants and fellowships. In 1992 with their help, Queen's University, Ontario acquired Herstmonceux Castle in East Sussex. This has been transformed into an international study centre for students. They donated funds to the Victoria University in Toronto to construct the Isabel Bader Theatre, completed in 2000, which won the Toronto Architecture and Urban Design Award of Excellence in 2001.

Scholarship has always remained as a focal point in both their lives as demonstrated by their support for students at the University of Edinburgh. In 1997 they established the Bader Bursaries to help Chemistry undergraduates in need of financial assistance by providing support through each year of their four-year degree programme. They have steadily increased their commitment and currently support 9 new Bader Bursaries each year. In 2004/05 there were a total of 25 Bader Scholars, three of whom are graduating at today's ceremony.



Academic Dress

Graduands wear a black gown or a black gown with red facings down the front if they are to receive the award of Doctor of Philosophy. Doctor of Science graduands wear a gown of superfine scarlet cloth, with loose sleeves, the facings down the front and around the shoulders covered, and the sleeves lined with rich scarlet silk. The hoods worn by the graduands denotes their degree:

Bachelor of Science: Black silk, lined with green silk and bordered with white fur.

Doctor of Philosophy: Black cloth lined with blue silk shot with brown, bordered with three inches of red.

Doctor of Science: Black cloth lined with green silk.

Master of Arts: Black silk, lined with white silk.

Master of Chemistry: Black silk lined with green silk bordered with white silk three inches broad.

Master of Chemical Physics: Black silk lined with green silk bordered with white silk three inches broad.

Master of Philosophy: Black silk, lined with silver silk, bordered with blue silk shot with brown three inches broad.

Master of Physics: Black silk lined with green silk bordered with white silk three inches broad.

Master of Science: Black silk, lined with white silk bordered with green silk three inches broad and three inches of green silk at the front of the neckband. Honorary Graduates:

Honorary Graduates:

Gown of superfine scarlet cloth, with loose sleeves, the facings down the front and around the shoulders covered, and the sleeves, lined with rich scarlet silk. Hoods:

Doctor of Science: Black cloth lined with green silk.

University Benefactors:

Navy blue robe with facings, yoke and sleeves faced in red. Outer edge of facings and yoke and sleeves are all further trimmed with silver oakleaf lace ribbon.

BESTOWAL OF THE DISTINCTION OF UNIVERSITY BENEFACTOR

Dr Alfred Bader, C.B.E., B.Sc., B.A., M.Sc., M.A., Ph.D., Hon.D.Sc.(Edin.), Hon LL.D., Hon.D.Univ., Hon.D.Sc., F.R.S.A., Chemist, Author and Collector *and* Dr Isabel Bader, B.A., Hon.D.S.L.

RECOMMENDED FOR DEGREES

SCHOOL OF CHEMISTRY

Candidates will be presented by the Head of the School of Chemistry, Professor Stephen K. Chapman, B.Sc., Ph.D., C.Chem., M.R.S.C.

THE DEGREE OF DOCTOR OF PHILOSOPHY

- Clemence, Nathan Christian, M.Chem. Thesis: "Pyrolytic syntheses of 6,5,5 heterocyclic systems as novel magenta dye couplers."
- Gibson, Helen Ruth, B.Sc. (Newcastle). Thesis: "A structure/function study of two novel cytochromes *c* from *Rhodobacter sphaeroides*."
- Hannam, Jeffrey Scott, B.Sc.(Sheffield Hallam), M.Phil.(Nottingham). Thesis: "The use of submolecular translational motion in the synthesis of novel (2) rotaxanes."
- Keatch, Steven Alexander, B.Sc. Thesis: "Biophysical chemistry of EcoKI in physiological solutions: emulating the cell interior."
- Perez, Emilio Manuel, B.Sc., M.Sc. (Salamanca). Thesis: "Hydrogenbonded synthetic molecular machines."
- -Potok, Stephanie, M.Sc.(E.N.S.C.R., France). Thesis: "Peptide rotaxanes as potential prodrugs."
- Royer, Sylvain Franck René Michel, , B.Sc., M.Sc.(Rennes). Thesis: "Application of *in vivo* selective methods to investigate novel activity in the enolase superfamily."
- Sanders, David, M.Chem. Thesis: "Application of ionic liquids towards the nuclear industry."
- Schirlin, Julien Thomas, B.Sc.(Arizona). Thesis: "Targeting low vapour pressure compounds in gas-phase electron diffraction."

- Shirran, Sally Lorna, B.Sc.(Strathclyde). Thesis: "Maintaining and analysing protein complexes in the gas phase by electrospray ionisation mass spectrometry."
- Staniland, Sarah Seneviratne, M.Chem. Thesis: "Sulphur rich molecular magnetic materials."
- Tait, Katrina Marion, M.Chem. Thesis: "The use of NMR spectroscopy with *in situ* laser irradiation for the study of azo dye photoisomerisation."
- Wood, Jenny Lynne, M.Sci.(Dunelm). Thesis: "Multi-loading ligand assemblies to transport copper."

THE DEGREE OF MASTER OF SCIENCE BY RESEARCH

Wilson, Kenneth David John, M.Chem .: Organic Chemistry

THE DEGREE OF BACHELOR OF SCIENCE WITH HONOURS

CHEMISTRY

Culme-Seymour, Emily Jane Foster, Peter Robert Hazelton, Loretta Nicole Long, Catriona Mack, Naomi Ruth Magee, Matthew Millican, Frances Kathryn Nilsen, Goran Jan Sehgal, Jane Small, Adam Benjamin Westwood, David

Second Class, Division Two Second Class, Division One Second Class, Division One Second Class, Division Two Second Class, Division Two Third Class Second Class, Division One First Class First Class Third Class Third Class

ENVIRONMENTAL CHEMISTRY

Jones, Christopher MacDonald, David McCulloch, Georgia McIvor, Jennifer Lindsey *—Robinson, Elizabeth* Sutherland, Stewart Thomas Second Class, Division One Second Class, Division One Second Class, Division Two Second Class, Division One Second Class, Division Two Second Class, Division Two

MEDICINAL AND BIOLOGICAL CHEMISTRY

Grange, Sarah Louise Orr, Craig William First Class Second Class, Division One

THE DEGREE OF MASTER OF CHEMICAL PHYSICS WITH HONOURS

CHEMICAL PHYSICS

Andrew, Caroline Margaret Jane Duncan, William James Henry, John Bruce Kafka, Graeme Robert Second Class, Division One Second Class, Division One Second Class, Division Two Second Class, Division One

CHEMICAL PHYSICS WITH INDUSTRIAL EXPERIENCE

Grenfell, Robin James Pascoe Murphy, William James Mutch, Kevin James Ritch, Susie Louise Hughson Second Class, Division One First Class First Class Second Class, Division Two

THE DEGREE OF MASTER OF CHEMISTRY WITH HONOURS

CHEMISTRY

Bell, Murray Graham Gillies, Andrew James Gray, Jennifer Claire Groeneboom, Natalie Leonora Hutchin, Elizabeth Anne Macleod, Kate Ann McBurney, Roy Thomas McCall, Keri Laura Montgomery, James Second Class, Division Two Second Class, Division Two First Class Second Class, Division One Second Class, Division Two Second Class, Division One Second Class, Division One Second Class, Division One Second Class, Division Two

CHEMISTRY WITH A YEAR IN EUROPE

Berman, James Laurence Brown, Melanie Rosemary Helda Dodds, Sarah Jane Harris, Emily Kate Johnson, Fiona Jane McCourt, Niall Francis Second Class, Division One First Class First Class First Class Second Class, Division Two Second Class, Division One

CHEMISTRY WITH INDUSTRIAL EXPERIENCE

Armstrong, Helen Brittain, Susan Rosemary Donaldson, Lauren Rona Forbes, James Edward Fordyce, Euan Hill, Adrian Hugh *—Meyer, Karsten* O'Neill, William John Paramanantham, Menaha Smith, Alison Margaret Stuwe, Sharon Marie Watson, Katherine Helen First Class Second Class, Division One First Class First Class First Class Second Class, Division One *First Class* Second Class, Division One First Class Second Class, Division Two Second Class, Division Two First Class

ENVIRONMENTAL CHEMISTRY

Hopper, Donna Louise Jackson, Rebekah Knowles, John Stevens Second Class, Division One Second Class, Division Two Second Class, Division One

ENVIRONMENTAL CHEMISTRY WITH INDUSTRIAL EXPERIENCE

Daubney, Louisa Jenny Egan, Lindsay Glynn, Elizabeth Jane Gordon, Ross John Roberts, Anne Louise First Class Second Class, Division One First Class Second Class, Division One First Class

MEDICINAL AND BIOLOGICAL CHEMISTRY

Firth, James

First Class

SCHOOL OF GEOSCIENCES

Candidates will be presented by the Head of the School of GeoSciences, Professor David E. Sugden, B.A., D.Phil.

THE DEGREE OF DOCTOR OF PHILOSOPHY

- Ahad, Jason Michael Elias, B.Sc.(Ottawa), M.Sc.(Toronto). Thesis: "Evaluating the origins and transformations of organic matter and dissolved inorganic nitrogen in two contrasting North Sea estuaries."
- Biskopstø, Fridbjørg, B.Sc.(Copenhagen), M.Sc.(Lond.). Thesis: Cenozoic structural and stratigraphic development of the Faroe-Shetland Basin and Faroe Graben."
- Clement, Robert Jon, B.Sc.(Wisconsin), M.Sc.(Nebraska). Thesis: "Mass and energy exchange of a plantation forest in Scotland using micrometeorological methods."
- Davison, Stephen, B.Sc.(C.N.A.A.), M.Sc.(Reading). Thesis: "Reconstructing the last pleistocene (late devensian) glaciation on the continental margin of Northwest Britain."
- Dobson, Andrew James, B.Sc.(Leeds). Thesis: "Seismic modelling for the sub-basalt imaging problem including analysis of the boundary element method."
- Doran, Helen, B.Sc.(Queen's, Belfast). Thesis: "Diagenesis of a fractured chalk reservoir: Machar oilfield, Central North Sea."
- Dunningham, Jonathan Paul, B.A., M.Sci.(Cantab.). Thesis: "Longterm evolution of normal fault systems: Controls on the development and evolution of extensional structures in the neotectonic Kenyan rift, East Africa."
- Gibson, Matthew, B.Sc. Thesis: "The localisation of erosional denudation during the growth and decay of the Pyrenean orogen."
- Kourampas, Nikolaos, B.Sc.(Thessaloniki). Thesis: "Plio-quaternary sedimentation and geomorphology within an active fore-arc: Messenia and Eastern Lakonia Peninsulae, Southern Peloponnese, Greece."
- Mancini, Fabio, B.Sc.(Italy). Thesis: "Converted wave imaging in anisotropic media using sea-floor seismic data."
- Martin, Richard, B.A.(Oxon.), M.Sc.(Aberd.). Thesis: "Automated lithofacies predictions from well logs."
- Naylor, Mark, M.Phys.(Oxon.). Thesis: "A discrete element model of orogenesis."
- Pegoraro, Emiliano, B.Sc.(Tuscia). Thesis: "Environmental control on isoprene emission: from leaf to canopy."

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- Rewcastle, Joanne, B.Sc.(Salford). Thesis: "Plant protection using arbuscular mycorrhizal fungi."
- *Robertson, Lynette Barbara, M.A.(Aberd.), M.Res. Thesis: "Radon emissions to the atmosphere and their use as an atmospheric tracer."*

Traub, Bärbel Monika, Grad.(Karlsruhe). Thesis: "Anisotropic parameter estimation from PP and PS waves in 4-component data."

THE DEGREE OF MASTER OF SCIENCE

ECOLOGICAL ECONOMICS

-Arnal, Delphine, Eng. (Genbioux Agric., Belgium)

RESOURCE MANAGEMENT

Umealo, Olaakanwa Chinwe, B.Agric.Tech.(Nigeria)

THE DEGREE OF BACHELOR OF SCIENCE WITH HONOURS

ECOLOGICAL SCIENCE: CONSERVATION AND ECOLOGICAL MANAGEMENT

Bryce, Fiona Julia Finch, Richard Alan Ghaui, Edward Thomas Hughes, James David Korbetis, Malamo Mould, Alistair Michael Stewart Walker, Helen Lindsay Second Class, Division One Second Class, Division One Second Class, Division Two Second Class, Division One Second Class, Division One Second Class, Division One Second Class, Division One

ECOLOGICAL SCIENCE: ECOLOGY

—Barambio, Naida Beveridge, Oliver Sebastian Black, Christopher Naylor McDowell, Philip John Sitters, Holly Frances Sutherland, Janette Marion Ann Second Class, Division Two Second Class, Division One Second Class, Division One Second Class, Division One Second Class, Division One First Class

ECOLOGICAL SCIENCE: ENVIRONMENTAL SCIENCE

Dinsmore, Kerry Jane Gormally, Eimear Maria Jukes, Alison Rosemary Packham, Laura Emily Tara -Salmi, Bertrand Francois First Class Second Class, Division One Second Class, Division One Second Class, Division One Second Class, Division One

ECOLOGICAL SCIENCE: FORESTRY

Collins, Sebastian Paul Heaver, Andrew Martyn Mackintosh, Hamish Owen, Gareth David Second Class, Division Two Second Class, Division One Second Class, Division One Second Class, Division One

ECOLOGICAL SCIENCE: WILDLIFE MANAGEMENT

Bletcher, Jonathan David Harris, Jonathan Edward McCurley, Philip Ross Second Class, Division Two Second Class, Division One Second Class, Division One

ENVIRONMENTAL GEOSCIENCE

Baxendale, Christopher Calder, Richard James Cooles, Holly Davarr Croft, Darryl James Deneven-Lewis, Ryan Charles Ian Dickson, Euan Michael Gardner, Heather Elaine Green, Sophie Louise Hassard, Karen Elizabeth Heaton, Elizabeth Alexandra Hughes, David William Jones, Huw Thomas King, William Peter Wilfred Matheson, Helen McAuley, Willena Esther McKenzie, Rebecca May

Second Class, Division Two Second Class, Division One Second Class, Division One First Class Second Class. Division One Second Class, Division One Second Class, Division Two Second Class, Division One Second Class, Division Two Third Class Second Class, Division Two First Class First Class First Class Second Class, Division One Second Class, Division One

Mellor, Nicholas James Smith, Iain Waddell, Simon David Philip Wallace, Julia Serena Second Class, Division One First Class Second Class, Division Two Second Class, Division Two

FORESTRY

Karfakis, Theodoros

Second Class, Division Two

GEOLOGY

Allan, Richard David Anderson, Ruth Victoria Barrs, Katie-Louise Taylor Booth, Alison Victoria Brightman, Alistair Colin Buckley, Gavin Paul -Burns, Alison Evelvn Bushe, Hannah Jennings Chapman, Stephen Conway, Rachel Mary Corry, Eleanore Charlotte Jane Davies, Emma Lynn Downie, Andrew Stewart Farrall, Nicola Jane Gray, Matthew James Ogilvie Greenaway, Gemma Louise Jeffrey, Laura Ledingham, Richard John Lees, Daniel James Lithgow, Anneliese MacKenzie, Erin Leeanne McKeen, Richard John Sidhu, Pritpaul Sinclair, Stuart Graeme Suttill, Hannah Louise Taggart, Samantha Towns, Christopher Simon Tuitt, Adrian Walters, Rachel Lucy White, Clare Hannah White, Joanne Elizabeth Wood, Ross David

Second Class, Division One Second Class, Division One Second Class, Division Two Third Class First Class Second Class, Division One Second Class, Division One Second Class, Division Two Second Class, Division One Second Class, Division Two Second Class, Division One Second Class, Division One Second Class, Division One Second Class, Division One Second Class, Division Two Second Class, Division One Second Class, Division One Second Class, Division One Second Class, Division One Second Class, Division Two Third Class Second Class, Division One First Class Second Class, Division Two First Class Second Class, Division One Second Class, Division Two First Class First Class Second Class, Division One Second Class, Division Two Second Class, Division One
GEOLOGY AND PHYSICAL GEOGRAPHY

Brown, Calum Kenneth Birnie Burrow, John Edward Chapman, Gemma Claire Cromie, Helen Dickson, Alan Ross Gourlay, Sarah-Jane Lowson Hogg, Iain Houssin, Jean-Bernard Lally, Jonathan Philip Malkin, Daniel Neil Mayne, Christopher Adam Punt, Rachel Melanie Rawles, Thomas Guy Edward Scott, Ruth Smith, Robert Sterry, James Robert Stevens, Timothy Dominic Swain, Emily Alice Wickerson, Paul James

Second Class, Division One First Class Second Class, Division One First Class Third Class Second Class, Division One Second Class, Division Two Second Class, Division One Second Class, Division One Second Class, Division One Second Class, Division One

GEOPHYSICS

Anderson, Ashley Burgin, Laura Elizabeth Dundas, Alan Douglas Evans, Miles Christopher Thomas Forbes, Douglas Alexander Haldane, Fiona Rosemary Halliday, David Fraser Hamilton, James William Henderson, Holly Macdonald, Greg MacFarquhar, Peter Paterson, Greig Alexander Tomlinson. Michael Bernard Second Class, Division One Second Class, Division One Second Class, Division Two Second Class, Division One Second Class, Division One First Class Second Class, Division One Second Class, Division One Second Class, Division Two Second Class, Division Two Second Class, Division Two First Class Second Class, Division Two

in absentiâ

THE HONORARY DEGREE OF DOCTOR OF SCIENCE

Ian Gibson Halliday, M.A., M.Sc.(Edin.), Ph.D., F.R.S.E., Professor of Physics and Chief Executive and Deputy Chairman of the Particle Physics and Astronomy Research Council

SCHOOL OF MATHEMATICS

Candidates will be presented by the Head of the School of Mathematics, Professor T. Alastair Gillespie, B.A., Ph.D., F.R.S.E.

THE DEGREE OF MASTER OF SCIENCE

OPERATIONAL RESEARCH

Tsai, Pei-Chuan, B.Sc.(Lond.) Weng, Qing

THE DEGREE OF BACHELOR OF SCIENCE WITH HONOURS

MATHEMATICS

Aidasani Khyami, Nitesh Alexander, Michael Ryan Aylott, Paul David Ballantyne, John Joseph' Blair, Niall Boyd, Roddy Alexander Guthrie Brown, Gareth Robert Dundas Christie, Robin Conroy, Sara Di Sotto, Laurence Paul Donald, Jain Shamus Ross Duncan, Andrew James Hayton, Robert James First Class Second Class, Division One Third Class Second Class, Division One Second Class, Division Two Second Class, Division One Third Class Second Class, Division One Second Class, Division One Second Class, Division Two Second Class, Division Two First Class First Class

—in absentiâ

Headey, Jessica Ruth Henderson, David Hood, Alistair Andrew William Howard, Alexandra Louise Howell, Elizabeth Laura Huang, Zilin Hughes, Jessica Gwyneth Hutchinson, Laura Lee Inshaw, Kate Elizabeth Jackson, Lauren Elizabeth Jellema, Nicholas Michael Hugo Lear, Joseph Antony Leask, Paul Francis Leeming, Ewan William Lees, Jonathan David Alexander Lees, Taiana Kirsten Lindsay, Alan Euan Marshall, Heather Jane Marshall, Jennifer Marx, Lauren Elise McFarlane, Greg Mitchell, David Grant Malcolm Pokorny, Florian Till Poynton, Colin Thomas Reid, Tiger Mary Richard, Marc David Robinson, Matthew Aron Robinson, Thomas Macaulay Seymour, Mark Keith Shishodia, Ashok Shoulder, Neil Russell Tilston, Neil Shannon · Wang, Minsi Warner, David Benedict Thornton Williamson, Euan

Second Class, Division One Second Class, Division One First Class Second Class, Division One Second Class, Division Two Third Class Second Class, Division One Second Class, Division One Second Class, Division One Second Class, Division One Second Class, Division Two Second Class, Division One First Class Second Class, Division One First Class Second Class. Division One First Class Second Class, Division One Second Class, Division Two First Class Second Class, Division One First Class First Class Second Class, Division Two Second Class, Division Two Third Class Second Class, Division One First Class Second Class, Division One Second Class, Division One First Class Second Class, Division Two Second Class. Division Two Second Class, Division One Second Class, Division One

MATHEMATICS AND BUSINESS STUDIES

Kearney, Gillian Anne Pryce, Thomas Michael Second Class, Division One Second Class, Division Two

MATHEMATICS AND PHYSICS

Mitchell, Ross David

Second Class, Division One

in absentiâ

MATHEMATICS AND STATISTICS

Bonsall, Nicholas Simon Andrew Gladwell, Mary Louise McCulloch, Scott William Owen, Laura Phair, Nicola Kathryn Speller, Thomas William Douglas Trotter, Linda First Class First Class Second Class, Division Two Second Class, Division One Second Class, Division One First Class Second Class, Division Two

THE DEGREE OF MASTER OF ARTS WITH HONOURS

MATHEMATICS

Allum, Melissa Victoria Fleming, Lorna Gladwell, Helen Leung, Hoi Ting Hatty Lloyd, Alastair Richard Graham Walker, Isla Second Class, Division Two First Class Second Class, Division One Second Class, Division One First Class Second Class, Division One

SCHOOL OF PHYSICS

Candidates will be presented by Professor Andy Lawrence, B.Sc., Ph.D., F.R.S.E., Regius Professor of Astronomy

THE DEGREE OF DOCTOR OF PHILOSOPHY

- Burkey, Daniel, M.Phys.(Oxon.). Thesis: "Cosmological parameter estimation from galaxy surveys."
- -Caputi, Karina Isabel, B.Sc.(Buenos Aires). Thesis: "The role of extremely red galaxies in the history of structure formation."
- —Ciccolini, Mariano Luis, Grad.(De Cuyo). Thesis: "Standard model higgs boson phenomenology at Hadron Colliders."
 - Cleaver, Julie Abigail, B.Sc. Thesis: "Network formation in mixtures of nematic liquid crystal and colloids."
 - Earl, Alasdair David, B.Sc.(H-W). Thesis: "Supporting the challenge of LHC produced data with ScotGrid."

–in absentiâ

- -Floyd, David James Elford, M.Phys. Thesis: "On the host galaxies of quasars."
- Fox, Joseph Paul, M.Phys. Thesis: "The adsorption of hydrocarbons in porous materials: a computational study."
- -Greve, Thomas Rodriguez, M.Sc. (Copenhagen). Thesis: "Dust and gas in the early universe - an observational perspective on galaxy formation and evolution."
- Johnson, Catharine Olivia Carver, B.Sc.(Vassar). Thesis: "X-ray surveys of active galactic nuclei in field and cluster environments."
- Kiyani, Khurom, M.Sci.(Lond.). Thesis: "An assessment of renormalization methods in the statistical theory of isotropic turbulence."
- Marson, Alan Edward, B.Sc. Thesis: "Laser induced fluorescence studies of dispersion by breaking waves."
- Seery, David James, M.A., C.A.S.M.(Cantab.). Thesis: "Quantum brane cosmology."
- Sheret, Ian, M.Phys.(Sheffield). Thesis: "The physical properties and composition of vega-type disks."

THE DEGREE OF BACHELOR OF SCIENCE WITH HONOURS

ASTROPHYSICS

Aitkenhead. Stewart Brettle, Laura Jane Rebecca Burnett, Matthew Dubois, Elizabeth Naomi Duncan, Ronald Lyness Dunlop, Ashley Tristan Edwards. Neil Simon Flanagan, Stephen Kevin Owen Fraser, James Alan Ruane Hynan, Katherine Beverley Ann Lavery, Stephen Vittorio Parker, James Robert Mayor *Scott, Vivian* Third Class Second Class, Division One Third Class Third Class Second Class, Division One Second Class, Division One Third Class Third Class Third Class Second Class, Division One Second Class, Division Two Second Class, Division One Second Class, Division One

COMPUTATIONAL PHYSICS

Bamford, Thomas Rosh Williams, Samuel Thomas Second Class, Division Two Second Class, Division One

in absentiâ

MATHEMATICAL PHYSICS

McGhee, Ian Patrick	First Class
Raunu, Gurprit Singh	First Class
Wilkinson, Caroline Maree	Second Class, Division One

PHYSICS

Allason, Daniel James
Cooke, Richard Henry Todd Morrow
Dolbear, Samuel Brian
Imong, Jonathan Panat
Josephides, Alexis Noel
Lyons, Michael
MacLean, Colin Douglas
Martin, Lliam Kennedy
Mathieson, Christopher Michael
Robertson, Scott Fraser
Ross, Erin
Scott, Matthew James
Stephen, Christopher John
Taylor, Jamie
Tweedie, Blair Peter
Watt, Nicola Ruth

Second Class, Division One Second Class, Division Two Second Class, Division Two Third Class First Class Second Class, Division Two First Class Second Class, Division One Second Class, Division Two Second Class, Division One First Class Second Class, Division One

PHYSICS WITH METEOROLOGY

Queen, Sarah Louise

First Class

PHYSICS WITH MUSIC

Creedy, Oliver Jonathan

Second Class, Division One

THE DEGREE OF MASTER OF PHYSICS WITH HONOURS

ASTROPHYSICS

Dalsgaard, Anna Green, James William Jackson, Laura Frances MacIver, Andrew Ross, Alan Stuart Second Class, Division One Second Class, Division One Second Class, Division One Second Class, Division Two First Class

--in absentiâ

MATHEMATICAL PHYSICS

Lynn, Stuart Sugden, Kate Elizabeth Polly First Class Second Class, Division One

PHYSICS

Carter, Richard Mark Guerin, Jonathan Alexander Mitchell, Lawrence Pittam, Robert Neil Muir Stevenson, Samuel Dikran Flett Styles, Nicholas Adam Third Class Second Class, Division One First Class First Class Second Class, Division One First Class

COLLEGE OF SCIENCE AND ENGINEERING

Candidates will be presented by the Head of the College of Science and Engineering, Vice-Principal Professor Grahame Bulfield, C.B.E., Ph.D., Hon.D.Sc., F.R.S.E.

THE DEGREE OF BACHELOR OF SCIENCE

-Al-Doy, Mohamed Nabeel -Atkinson, Robert William Balfour, Katharine Louise Berresford, Jane Selina -Biggar, Jamie Gordon Brand, Chris James Dearnley, Laura Elizabeth Fiddes, Anna Louise Forrester, Alexander Stewart Daigle Galloway, Kevin Green, Kieron Greig, Lynsey Hair, Rupert Robin Harper, Ross Iain Haston, Charles Iain -Hole, Richard Margary

15

-Ingledew, Jonathan Murray Kaliontzoglou, Stavros Kimber, Caroline Jane -Koenig, Matthew Martin, Ian Andrew Phillip McMartin, James Andrew Miller, Stuart James Murray, Robert David Nankervis, Christopher James Reid, Katrina Jan -Rensner, Martin James Ridgway, James Alexander Ross, Stuart Ian Scott, Christopher John Sewell, James Anthony Singh, Rashpal Smillie, Anne Marie Spencer, Thomas Charles Anthony Sturgis, Hugh Russell Taylor, Benjamin Roger Hugh Taylor, Thomas William Tsiamis, Andreas Turner, Lesley Anne Wahlberg, Laura Jane Wang, Xiao Xiao Wasserman, Alexander Frederick Weeratunge, Chatrini Ishara Williamson, Mark Paul

THE HONORARY DEGREE OF DOCTOR OF SCIENCE

Brian Frederick Gilbert Johnson, B.Sc., Ph.D., M.A., F.R.S., F.R.S.E., F.Acad.Eu., F.R.S.Chem., Order of the Grand Cross of Brazil, Professor of Inoganic Chemistry and Master of Fitzwilliam College, Cambridge.

in absentiâ



Honorary Degree of Doctor of Science

Professor Brian Frederick Gilbert Johnson, B.Sc., Ph.D., M.A., F.R.S., F.R.S.Ed., F.Acad.Eu., F.R.S.Chem.

Presented by Professor Stephen Chapman, B.Sc., Ph.D., C.Chem., M.R.S.C., Head of the School of Chemistry.

Professor Brian Johnson was born in Northampton, England in 1938 and took his first degree at Nottingham in 1960 before completing his Ph.D. on liquid dinitrogen tetroxide as a non-aqueous solvent at Nottingham in 1963. He then proceeded to M.I.T. to work for a year on a Fullbright Scholarship where he prepared the crystal of the first fully characterised compound known to contain a metal-metal quadruple bond. He returned to the UK in 1964 and for several years taught and carried out research as a lecturer, first at Manchester and later at University College London.

Professor Johnson moved to Cambridge in 1970 where he was elected Fellow of Fitzwilliam College and lecturer in Inorganic Chemistry, and in 1978 was promoted to Reader. At Fitzwilliam he served as College Steward from 1972-77, Admissions Tutor in 1978, Dean from 1986-88, President from 1988-89 and as Acting Master from 1989-91. Called to Edinburgh in 1990 he succeeded Professor Evelyn Ebsworth as the Crum Brown Professor of Inorganic Chemistry and was Head of Department from 1992-95 before returning to Cambridge to take up the Chair of Inorganic Chemistry where he continues to carry out his research and teaching. In 1999 he was elected Master of Fitzwilliam College and from 1993-98 served as a member of Council of the EPSRC, was a member of TOP from 1993-97 and has been Chairman of PUSET from 1998. He has served on many Committees and Editorial Boards and on the NATO Panel for European Institutes.

Professor Johnson is internationally acknowledged as a pioneer of modern inorganic chemistry and can be regarded as one of the founding fathers of cluster chemistry. He has developed and adapted a number of techniques for the study of clusters, and has discovered a wide range of new structural cluster types. He has been a visiting Professor throughout the world and was elected F.R.S. in 1991, F.R.S.E. in 1992 and, amongst many other honours, was awarded the Grand Cross of Brazil for his contributions to Science.



Honorary Degree of Doctor of Science

Professor Ian Gibson Halliday, M.A., M.Sc.(Edin.), Ph.D., F.Inst.P., F.R.S.E.

Presented by Assistant Principal Professor Richard Kenway, B.Sc., D.Phil., C.Phys., F.Inst.P., F.R.S.E.

Professor Ian Halliday was born in Kelso in 1940. He was educated in the traditional Scottish system at Kelso High School and Perth Academy. At Kelso High School his father was the head mathematics teacher, which may have affected his later career.

At the University of Edinburgh Ian gained a first and an M.A. in Mathematics and Natural Philosophy, and won the Napier and Gadgil prizes. Afterwards he studied for an M.Sc. in the former department of Applied Maths and Theoretical Physics, where he became interested in the behaviour of collisions at very high energy. In particular he became a leading authority on the behaviour, at high energies, of Feynman diagrams.

Professor Halliday then moved to Cambridge and ended up achieving a two year Cambridge Ph.D. which led to a post as an Instructor at Princeton along with a fellowship at Christ's College to return to. His first permanent post was at Imperial College where he spent twenty-five years rising through the academic ranks as a theoretical particle physicist. He was then asked to go to Swansea to turn around their Physics Department which had sunk to an RAE score of 2 in Physics and 1 in Applied Physics. In the last RAE they obtained a 5.

Professor Halliday then became Chief executive of PPARC (the Particle Physics and Astronomy Research Council). In PPARC he has been responsible for a budget of over £300 million per annum. This budget has almost doubled in his seven years at PPARC, and more importantly, it has led to a clear leap in the capabilities of UK Physics as funded by PPARC, and a great increase in the visibility and impact of UK Physics at both a policy level and at a physicist level.

In Brussels, Professor Halliday was a member of DG Research's senior advisory committee EURAB and was Vice Chair at the beginning. EURAB has clearly been influential in setting up the proposed seventh Framework programme. Ian Halliday has also served as the UK delegate on many European Councils and Advisory Boards.



THE GENERAL COUNCIL of THE UNIVERSITY OF EDINBURGH Charles Stewart House 9-16 Chambers Street Edinburgh EH1 1HT Email General.Council@ed.ac.uk Telephone (home) 0131 664 2717 General Council Office Telephone 0131 650 2152

Warm congratulations on your graduation from the University of Edinburgh.

On receipt of your degree, you automatically become a member of the General Council of the University of Edinburgh. The General Council comprises all graduates, honorary graduates and honorary fellows, members of the University Court, and professors, readers and lecturers of at least one year's standing. It is the continuing voice of the body of graduates in the governance of the University. The General Council's responsibilities are set out in various Acts of Parliament but, briefly, through its Business Committee and its three Assessors on the University Court, it has the power to look into all questions affecting the well-being and prosperity of the University and to make recommendations to the University Court. Most importantly, the members of the General Council elect the Chancellor of the University.

The General Council is very keen to encourage recent graduates to play an active role in its work.

As a member, you will receive as part of Edit, the University of Edinburgh magazine, the Billet of business for the statutory half-yearly meetings of the General Council, which you are warmly invited to attend. We encourage you to involve yourself in the work of the General Council, by voting at the annual elections, and by standing for nomination as a member of the Business Committee or as an Assessor to the University Court. The Billet within Edit will help to keep you informed of current developments in the University. You will find further information and contact details on the General Council website at <u>www.general-council.ed.ac.uk</u>. The Secretary of the General Council will be pleased to hear from you at any time if you have queries or comments.

If you have been awarded a Certificate or Diploma from the University, you are eligible to receive a University Passport (by contacting Development & Alumni at <u>development@ed.ac.uk</u>). We hope that you will wish to keep in touch as an alumnus or alumna of the University. If you already hold a degree from the University your membership of the General Council dates from your first degree and is unaltered.

We wish you every success in your future life, and we very much hope that you will maintain a lifelong association with your University.



Alfallem

Secretary

The University of Edinburgh Scholarship Programme

Attracting the most gifted students from the UK and from overseas lies at the heart of the University of Edinburgh's vision. The cost of higher education, however, can be a major obstacle for many students who, while meeting the University's admission requirements, struggle to find the necessary funds to take up their place.

The University of Edinburgh believes that as far as possible a student's financial situation should not be allowed to deny them access to a University education. One way of assisting such students is through supporting the University's Scholarship programme.

You can support scholarships at Edinburgh by endowing funds to establish a named scholarship which can be established for an investment starting at £25,000. With this option you can choose to name a scholarship after yourself, family or in honour of another person. You can also choose whether you wish the scholarship to support a particular discipline at the University or to leave it open to all students. Alternatively, you may wish to contribute to the Edinburgh Fund (or Alumni Fund) which is supported by graduates and friends from around the world and makes annual gifts to the University Scholarships programme. Since 1997, over £2M has been awarded to scholars studying at Edinburgh.

A further way of funding scholarships is by leaving a legacy to the University. The University has a long and proud tradition of being remembered in people's wills and you can choose to make your legacy support students at Edinburgh for years to come. For further information, please contact the University's Legacy Manager at the address below or visit <u>www.dev.ed.ac.uk/legacies.htm</u>

The Development and Alumni Office works closely with the University's Scholarships and Student Finance Office to ensure that donors are provided with the best possible information about establishing a scholarship. Details on scholarships currently available at the University can be found on our website: <u>www.scholarships.ed.ac.uk</u>

Your gift can make a real impact in the lives of students who might not otherwise be able to attend the University. If you are interested in making a donation towards a new or existing scholarship, or you would like further information on the University of Edinburgh's Scholarships Programme, please contact:

Development and Alumni, The University of Edinburgh, Charles Stewart House, 9-16 Chambers Street, Edinburgh EH1 1HT.

Tel: 0131 650 2240 Fax: 0131 650 2239 E-mail: <u>edinburghcampaign@ed.ac.uk</u>



The McEwan Hall

In 1875, R. Rowand Anderson was selected as the architect to design new accommodation for the University's Medical Faculty. Included in his original plans were designs for a graduation hall.

The proposal to build the hall was initially deleted from the plans due to the lack of funding. However, in 1886, William McEwan,

founder of the brewing company of the same name, offered to fund the building.

William McEwan was born in Alloa in 1827 and served as Liberal Member of Parliament for Central Edinburgh from 1886-1900. A wealthy man, well known for his philanthropy, yet modest and rather retiring, McEwan wanted to provide the University with a large and splendid building which might also serve as a concert hall for major orchestral performances.

In 1888, work started on the grand semi-circular hall with its two steeply-raked galleries. Built in the Early Italian Renaissance style, its bold façade is flanked by projecting towers, each arranged to contain separate spiral stairs for each gallery. The sculpture over the door by Farmer and Brindley, London, depicts a graduation ceremony and the Latin inscription records McEwan's generosity.

The Hall itself was finished by 1894 but McEwan then undertook a lavish scheme of decoration. The decorations, by the artist William Palin, took some three and a half years' work and convey something of how the ideal of a University was viewed at that time. The dome is divided by ribs into 15 panels and at the base of each of the panels is the figure of a seated female, 13 of which hold an instrument appropriate to the academic discipline she represents. The lower part of the dome is a Pantheon of famous names connected with the University. Around the inner edge of the dome is an inscription of a passage from the Scripture: "Wisdom is the principal thing; therefore get wisdom: and with all thy getting, get understanding. Exalt her and she shall bring thee to honour."

Over the top of the platform is an immense painted panel entitled "The Temple of Fame", which depicts 80-90 philosophers and students ascending the steps. At the very top are the three goddesses representing Science, Art and Literature. The central deity, Literature, has a quill in one hand, and upon her knee is the Book of Fame. Under this immense panel, and either side of the platform, are four smaller panels. Of particular interest is the right-hand panel, viewed from the audience. It is a large fresco, representing Minerva, the tutelary deity of the University, seated upon a marble throne in the grove of Academia. In the group of figures on her left, there is a portrait of the donor, William McEwan (with arms crossed and long white beard), making the gift of his Hall. On either side of the platform, above the doors, are roundels of Sir Walter Scott (left) and Thomas Carlyle (right), both alumni of Edinburgh University.

The Hall was officially opened on December 3rd, 1897 with a ceremony at which the Honorary Degree of Doctor of Laws was conferred upon William McEwan.

PROGRAMME OF MUSIC

From 2.30 p.m. to 3.00 p.m. the following Programme of Music will be performed on the Organ by JOHN PHILIP KITCHEN, M.A., B.Mus., Ph.D., F.R.C.O., L.R.A.M., University Organist.

Sonata No. 4 in B Flat	Felix Mendelssohn
Concerto del Sigr Torelli	arr. J.G. Walther
Concerto in B Flat	John Stanley

At the entry of the Academic Procession

THE PRINCE OF DENMARK'S MARCHJeremiah Clarke

After the Ceremony

SORTIECharles Tournemire

Printed by The University of Edinburgh Printing Services 13 Infirmary Street, Edinburgh EH1 1LT



Graduation Ceremony

TUESDAY, 21 JUNE 2005 McEWAN HALL 3.00 p.m.

College of Science and Engineering



Welcome to The University of Edinburgh's Graduation Ceremony

Today's ceremony is one of eleven summer ceremonies held in June and July. Degrees are also conferred at three ceremonies in the winter and at several meetings of the Senatus Academicus throughout the year for those graduating *in absentia*. The University confers approximately 5,000 degrees and 250 diplomas and certificates annually.

The ceremony follows time honoured traditions, some of which can be traced back to the founding of the University in 1583.

The Senatus Academicus meets immediately prior to each ceremony to recommend the degrees to be awarded. Following this meeting the Academic Procession is gathered and processes into the hall. The procession is led by the staff bearer followed by members of academic and support staff including the Heads of Colleges, Heads of Schools, the Honorary graduands, the University Rector and members of the University Court. They are followed by the Bedellus carrying the University Mace and leading in the Vice-Chancellor. The Vice-Chancellor (the University Principal) is acting on behalf of the Chancellor, His Royal Highness The Prince Philip, Duke of Edinburgh.

The names of the graduands are announced by the Head of the relevant School and the Vice-Chancellor confers the degree by touching the head of the graduand with the graduation cap. Popular legend has it that the cap was originally made using the cloth from the breeches of John Knox, although other rumours attribute those breeches to the famous Scottish scholar, George Buchanan.

At the close of the ceremony the graduands join the Academic Procession as new graduates of The University of Edinburgh.

ORDER OF PROCEEDINGS

Programme of Music

The Programme of Music is printed at the back of the Programme.

Academic Procession

The Assembly is asked to stand as the procession enters the Hall.

Moment of Reflection

Award of University Benefactor

Conferment of Degrees

Degrees will be conferred by the Vice-Chancellor, Professor Timothy O'Shea, B.Sc., Ph.D., F.R.S.E.

Award of Honorary Degrees

The Vice-Chancellor

Academic Procession

The Assembly is asked to remain standing as the procession leaves the Hall.

Please do not use flash photography during the Moment of Reflection



Distinction of University Benefactor

Dr Alfred Bader, C.B.E., B.Sc., B.A., M.Sc., M.A., Ph.D., Hon.DSc.(Edin.), Hon LL.D., Hon.D.Univ., Hon.D.Sc., F.R.S.A., and Dr Isabel Bader, B.A., Hon.D.S.L.

Presented by Professor Stephen Chapman, B.Sc., Ph.D., C.Chem., M.R.S.C., Head of the School of Chemistry.

Isabel Bader was born in northern Ontario. Her father, Herbert Overton, was a cabinetmaker who emigrated from England to Canada in 1906. Her mother, Stella Sirr, came from a large family in New Liskeard. The Overton family were a deeply religious Protestant family where education was very important. Two of their three children went to university - Isabel won a scholarship to Victoria University in Toronto.

Isabel always had a dream of returning to England, the home of her father. In July 1949 this dream came true and on board SS Franconia from Quebec City to Liverpool with a friend, she met Alfred Bader who was travelling back to Europe to visit relatives. For both of them this was the meeting of soul mates. After nine days Alfred proposed. Isabel eventually rejected him in 1950; she did not believe the mixture of religions would work. Her book, A Canadian in Love, is based on the 80 letters she wrote to Alfred between their meeting in July 1949 and their sad parting a year later. Isabel remained in Bexhill in Sussex where she taught English, History, French, Spanish and Drama and was co-founder of a drama school there and later a costume museum. In 1975 when they saw each other again, Alfred discovered to his surprise and delight that she had not married. They married in 1982. Isabel loves gardening, music and the theatre, is an expert on costumes, and accompanies Alfred on his European lecture tours and visits to chemists. Like him, she is very interested in the Bible, old master paintings, and "investing" in research and scholarship.

Alfred Bader came from a Jewish family originally resident in Kyjov, today in the Czech Republic. His grandfather, Moritz Ritter von Bader, was a civil engineer who helped Ferdinand de Lesseps build the Suez Canal. His mother, Elisabeth Serényi, came from an aristocratic Catholic Hungarian family. When his father died just two weeks after Alfred's birth in 1924, his mother was left with no income in a time of runaway inflation and so gave him into the keeping of his Jewish aunt. In 1938 Alfred was one of 10,000 Jewish youngster allowed to enter Britain. In 1940, Alfred, just 16, was sent to Fort Lennox, an internment camp in Quebec. In the autumn of 1941 he was released into the care of a Montreal sponsor, Martin Wolff. Such is the background that helped to shape the fascinating personality of Alfred Bader.

Martin Wolff became like a father to Alfred, pressing him to further his education. Alfred applied to Queen's University, Ontario, where he was accepted into the Faculty of Applied Science. As a young engineering student Alfred found a summer job as a laboratory technician with the Murphy Paint Company in Montreal, an experience that further whetted his fascination with chemistry. In 1945 he was awarded a BSc in Engineering Chemistry, in 1946 a BA in History and an MSc in Chemistry in 1947. He completed his PhD in Organic Chemistry at Harvard in 1950.

That year he went to Milwaukee to work in research for the Pittsburgh Plate Glass Company and to start his own chemical supply company, literally in a garage. From this small operation, Aldrich Chemicals grew rapidly, moving to bigger and bigger premises as the company became world-famous for the quality and variety of its chemicals. In 1975 Aldrich Chemicals merged with Sigma of St.Louis, a leading supplier of biochemicals. Alfred became president of the merged company Sigma-Aldrich.

In 1991 he left Sigma-Aldrich and had then time to devote to his other great love, Art. Early in life, Alfred became interested in art and art history and he is one of the most renowned private collectors of 17th century Dutch Art. His autobiography Adventurers of a Chemist Collector gives an insight into his remarkable life. Throughout the book he reminds readers of the ABCs that helped to shape his life, Art, the Bible and Chemistry. Appropriately, the cover of this book features a Flemish painting of 1648 titled The Alchemist. Alfred is well known to international art auction houses. He takes particular pleasure in buying dirty old paintings in antique stores or at auction hoping that cleaning will reveal great works. His special skill is in distinguishing work by Rembrandt's students from that of the master himself. Slide-illustrated tales of such detective work have held gallery audiences spellbound for years.

Philanthropists are generally a happy breed, Alfred and Isabel are uniquely so. Their giving, like their life in general, is reflective of their sense of wonder, magic and joyful 'accidents' of existence. Alfred rejoices in the two worlds of chemistry and fine art. Over the years, the Baders have sought out deserving chemists and universities throughout North America, Europe and Israel and have underwritten their research through grants and fellowships. In 1992 with their help, Queen's University, Ontario acquired Herstmonceux Castle in East Sussex. This has been transformed into an international study centre for students. They donated funds to the Victoria University in Toronto to construct the Isabel Bader Theatre, completed in 2000, which won the Toronto Architecture and Urban Design Award of Excellence in 2001.

Scholarship has always remained as a focal point in both their lives as demonstrated by their support for students at the University of Edinburgh. In 1997 they established the Bader Bursaries to help Chemistry undergraduates in need of financial assistance by providing support through each year of their four-year degree programme. They have steadily increased their commitment and currently support 9 new Bader Bursaries each year. In 2004/05 there were a total of 25 Bader Scholars, three of whom are graduating at today's ceremony.



Academic Dress

Graduands wear a black gown or a black gown with red facings down the front if they are to receive the award of Doctor of Philosophy. Doctor of Science graduands wear a gown of superfine scarlet cloth, with loose sleeves, the facings down the front and around the shoulders covered, and the sleeves lined with rich scarlet silk. The hoods worn by the graduands denotes their degree:

Bachelor of Science: Black silk, lined with green silk and bordered with white fur.

Doctor of Philosophy: Black cloth lined with blue silk shot with brown, bordered with three inches of red.

Doctor of Science: Black cloth lined with green silk.

Master of Arts: Black silk, lined with white silk.

Master of Chemistry: Black silk lined with green silk bordered with white silk three inches broad.

Master of Chemical Physics: Black silk lined with green silk bordered with white silk three inches broad.

Master of Philosophy: Black silk, lined with silver silk, bordered with blue silk shot with brown three inches broad.

Master of Physics: Black silk lined with green silk bordered with white silk three inches broad.

Master of Science: Black silk, lined with white silk bordered with green silk three inches broad and three inches of green silk at the front of the neckband. **Honorary Graduates**:

Gown of superfine scarlet cloth, with loose sleeves, the facings down the front and around the shoulders covered, and the sleeves, lined with rich scarlet silk. Hoods:

Doctor of Science: Black cloth lined with green silk.

University Benefactors:

Navy blue robe with facings, yoke and sleeves faced in red. Outer edge of facings and yoke and sleeves are all further trimmed with silver oakleaf lace ribbon.

BESTOWAL OF THE DISTINCTION OF UNIVERSITY BENEFACTOR

1

Dr Alfred Bader, C.B.E., B.Sc., B.A., M.Sc., M.A., Ph.D., Hon.D.Sc.(Edin.), Hon LL.D., Hon.D.Univ., Hon.D.Sc., F.R.S.A., Chemist, Author and Collector *and* Dr Isabel Bader, B.A., Hon.D.S.L.

RECOMMENDED FOR DEGREES

SCHOOL OF CHEMISTRY

Candidates will be presented by the Head of the School of Chemistry, Professor Stephen K. Chapman, B.Sc., Ph.D., C.Chem., M.R.S.C.

THE DEGREE OF DOCTOR OF PHILOSOPHY

Clemence, Nathan Christian, M.Chem. Thesis: "Pyrolytic syntheses of 6,5,5 heterocyclic systems as novel magenta dye couplers."

Gibson, Helen Ruth, B.Sc. (Newcastle). Thesis: "A structure/function study of two novel cytochromes *c* from *Rhodobacter sphaeroides*."

Hannam, Jeffrey Scott, B.Sc.(Sheffield Hallam), M.Phil.(Nottingham). Thesis: "The use of submolecular translational motion in the synthesis of novel (2) rotaxanes."

Keatch, Steven Alexander, B.Sc. Thesis: "Biophysical chemistry of EcoKI in physiological solutions: emulating the cell interior."

- Perez, Emilio Manuel, B.Sc., M.Sc.(Salamanca). Thesis: "Hydrogenbonded synthetic molecular machines."
- Potok, Stephanie, M.Sc.(E.N.S.C.R., France). Thesis: "Peptide rotaxanes as potential prodrugs."
- Royer, Sylvain Franck René Michel, , B.Sc., M.Sc.(Rennes). Thesis: "Application of *in vivo* selective methods to investigate novel activity in the enolase superfamily."
- Sanders, David, M.Chem. Thesis: "Application of ionic liquids towards the nuclear industry."
- Schirlin, Julien Thomas, B.Sc.(Arizona). Thesis: "Targeting low vapour pressure compounds in gas-phase electron diffraction."

in absentià

- Shirran, Sally Lorna, B.Sc.(Strathclyde). Thesis: "Maintaining and analysing protein complexes in the gas phase by electrospray ionisation mass spectrometry."
- Staniland, Sarah Seneviratne, M.Chem. Thesis: "Sulphur rich molecular magnetic materials."
- Tait, Katrina Marion, M.Chem. Thesis: "The use of NMR spectroscopy with *in situ* laser irradiation for the study of azo dye photoisomerisation."
- Wood, Jenny Lynne, M.Sci.(Dunelm). Thesis: "Multi-loading ligand assemblies to transport copper."

THE DEGREE OF MASTER OF SCIENCE BY RESEARCH

Wilson, Kenneth David John, M.Chem .: Organic Chemistry

THE DEGREE OF BACHELOR OF SCIENCE WITH HONOURS

CHEMISTRY

Culme-Seymour, Emily Jane Foster, Peter Robert Hazelton, Loretta Nicole Long, Catriona Mack, Naomi Ruth Magee, Matthew Millican, Frances Kathryn Nilsen, Goran Jan Sehgal, Jane Small, Adam Benjamin Westwood, David Second Class, Division Two Second Class, Division One Second Class, Division One Second Class, Division Two Second Class, Division Two Third Class Second Class, Division One First Class First Class Third Class Third Class

ENVIRONMENTAL CHEMISTRY

Jones, Christopher MacDonald, David McCulloch, Georgia McIvor, Jennifer Lindsey *-Robinson, Elizabeth* Sutherland, Stewart Thomas Second Class, Division One Second Class, Division One Second Class, Division Two Second Class, Division One Second Class, Division Two Second Class, Division Two

—in absentiâ

MEDICINAL AND BIOLOGICAL CHEMISTRY

Grange, Sarah Louise Orr, Craig William First Class Second Class, Division One

THE DEGREE OF MASTER OF CHEMICAL PHYSICS WITH HONOURS

CHEMICAL PHYSICS

Andrew, Caroline Margaret Jane Duncan, William James Henry, John Bruce Kafka, Graeme Robert Second Class, Division One Second Class, Division One Second Class, Division Two Second Class, Division One

CHEMICAL PHYSICS WITH INDUSTRIAL EXPERIENCE

Grenfell. Robin James Pascoe Murphy, William James Mutch, Kevin James Ritch, Susie Louise Hughson Second Class, Division One First Class First Class Second Class, Division Two

THE DEGREE OF MASTER OF CHEMISTRY WITH HONOURS

CHEMISTRY

Bell, Murray Graham Gillies, Andrew James Gray, Jennifer Claire Groeneboom. Natalie Leonora Hutchin, Elizabeth Anne Macleod, Kate Ann McBurney, Roy Thomas McCall, Keri Laura Montgomery, James Second Class, Division Two Second Class, Division Two First Class Second Class, Division One Second Class, Division Two Second Class, Division One Second Class, Division One Second Class, Division One Second Class, Division Two

in absentià

CHEMISTRY WITH A YEAR IN EUROPE

Berman, James Laurence Brown, Melanie Rosemary Helda Dodds, Sarah Jane Harris, Emily Kate Johnson, Fiona Jane McCourt, Niall Francis Second Class, Division One First Class First Class First Class Second Class, Division Two Second Class, Division One

CHEMISTRY WITH INDUSTRIAL EXPERIENCE

Armstrong, Helen Brittain, Susan Rosemary Donaldson, Lauren Rona Forbes, James Edward Fordyce, Euan Hill, Adrian Hugh *Meyer, Karsten* O'Neill, William John Paramanantham, Menaha Smith, Alison Margaret Stuwe, Sharon Marie Watson, Katherine Helen First Class Second Class, Division One First Class First Class Second Class, Division One *First Class* Second Class, Division One First Class Second Class, Division Two Second Class, Division Two First Class

ENVIRONMENTAL CHEMISTRY

Hopper, Donna Louise Jackson, Rebekah Knowles, John Stevens Second Class, Division One Second Class, Division Two Second Class, Division One

ENVIRONMENTAL CHEMISTRY WITH INDUSTRIAL EXPERIENCE

Daubney, Louisa Jenny Egan, Lindsay Glynn, Elizabeth Jane Gordon, Ross John Roberts, Anne Louise First Class Second Class, Division One First Class Second Class, Division One First Class

MEDICINAL AND BIOLOGICAL CHEMISTRY

Firth, James

First Class

in absentiâ

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SCHOOL OF GEOSCIENCES

Candidates will be presented by the Head of the School of GeoSciences, Professor David E. Sugden, B.A., D.Phil.

THE DEGREE OF DOCTOR OF PHILOSOPHY

- Ahad, Jason Michael Elias, B.Sc.(Ottawa), M.Sc.(Toronto). Thesis: "Evaluating the origins and transformations of organic matter and dissolved inorganic nitrogen in two contrasting North Sea estuaries."
- Biskopstø, Fridbjørg, B.Sc.(Copenhagen), M.Sc.(Lond.). Thesis: Cenozoic structural and stratigraphic development of the Faroe-Shetland Basin and Faroe Graben."
- Clement, Robert Jon, B.Sc.(Wisconsin), M.Sc.(Nebraska). Thesis: "Mass and energy exchange of a plantation forest in Scotland using micrometeorological methods."
- Davison, Stephen, B.Sc.(C.N.A.A.), M.Sc.(Reading). Thesis: "Reconstructing the last pleistocene (late devensian) glaciation on the continental margin of Northwest Britain."
- Dobson, Andrew James, B.Sc.(Leeds). Thesis: "Seismic modelling for the sub-basalt imaging problem including analysis of the boundary element method."
- Doran, Helen, B.Sc.(Queen's, Belfast). Thesis: "Diagenesis of a fractured chalk reservoir: Machar oilfield, Central North Sea."
- -Dunningham, Jonathan Paul, B.A., M.Sci.(Cantab.). Thesis: "Longterm evolution of normal fault systems: Controls on the development and evolution of extensional structures in the neotectonic Kenyan rift, East Africa."
- -Gibson, Matthew, B.Sc. Thesis: "The localisation of erosional denudation during the growth and decay of the Pyrenean orogen."
- Kourampas, Nikolaos, B.Sc.(Thessaloniki). Thesis: "Plio-quaternary sedimentation and geomorphology within an active fore-arc: Messenia and Eastern Lakonia Peninsulae, Southern Peloponnese, Greece."
- -Mancini, Fabio, B.Sc.(Italy). Thesis: "Converted wave imaging in anisotropic media using sea-floor seismic data."
- Martin, Richard, B.A.(Oxon.), M.Sc.(Aberd.). Thesis: "Automated lithofacies predictions from well logs."
- Naylor, Mark, M.Phys.(Oxon.). Thesis: "A discrete element model of orogenesis."
- Pegoraro, Emiliano, B.Sc.(Tuscia). Thesis: "Environmental control on isoprene emission: from leaf to canopy."

in absentia

Rewcastle, Joanne, B.Sc.(Salford). Thesis: "Plant protection using arbuscular mycorrhizal fungi."

–Robertson, Lynette Barbara, M.A.(Aberd.), M.Res. Thesis: "Radon emissions to the atmosphere and their use as an atmospheric tracer." Traub, Bärbel Monika, Grad.(Karlsruhe). Thesis: "Anisotropic

parameter estimation from PP and PS waves in 4-component data."

THE DEGREE OF MASTER OF SCIENCE

ECOLOGICAL ECONOMICS

-Arnal, Delphine, Eng. (Genbioux Agric., Belgium)

RESOURCE MANAGEMENT

Umealo, Olaakanwa Chinwe, B.Agric.Tech.(Nigeria)

THE DEGREE OF BACHELOR OF SCIENCE WITH HONOURS

ECOLOGICAL SCIENCE: CONSERVATION AND ECOLOGICAL MANAGEMENT

Bryce, Fiona Julia
Finch, Richard Alan
Ghaui, Edward Thomas
Hughes, James David
Korbetis, Malamo
Mould, Alistair Michael Stewart
Walker, Helen Lindsay

Second Class, Division One Second Class, Division One Second Class, Division Two Second Class, Division One Second Class, Division One Second Class, Division One Second Class, Division One

ECOLOGICAL SCIENCE: ECOLOGY

-Barambio, Naida Beveridge, Oliver Sebastian Black, Christopher Naylor McDowell, Philip John Sitters, Holly Frances Sutherland, Janette Marion Ann

Second Class, Division Two Second Class, Division One Second Class, Division One Second Class, Division One Second Class, Division One First Class

-in absentiâ

ECOLOGICAL SCIENCE: ENVIRONMENTAL SCIENCE

Dinsmore, Kerry Jane Gormally, Eimear Maria Jukes, Alison Rosemary Packham, Laura Emily Tara -Salmi, Bertrand Francois First Class Second Class, Division One Second Class, Division One Second Class, Division One Second Class, Division One

ECOLOGICAL SCIENCE: FORESTRY

Collins, Sebastian Paul Heaver, Andrew Martyn Mackintosh, Hamish Owen, Gareth David Second Class, Division Two Second Class, Division One Second Class, Division One Second Class, Division One

ECOLOGICAL SCIENCE: WILDLIFE MANAGEMENT

Bletcher, Jonathan David Harris, Jonathan Edward McCurley, Philip Ross Second Class, Division Two Second Class, Division One Second Class, Division One

ENVIRONMENTAL GEOSCIENCE

Baxendale, Christopher Calder, Richard James Cooles, Holly Davarr Croft, Darryl James Deneven-Lewis, Ryan Charles Ian Dickson, Euan Michael Gardner, Heather Elaine Green, Sophie Louise Hassard, Karen Elizabeth Heaton, Elizabeth Alexandra Hughes, David William Jones, Huw Thomas King, William Peter Wilfred Matheson, Helen McAuley, Willena Esther McKenzie, Rebecca May

Second Class, Division Two Second Class, Division One Second Class, Division One First Class Second Class, Division One Second Class. Division One Second Class, Division Two Second Class, Division One Second Class, Division Two Third Class Second Class, Division Two First Class First Class First Class Second Class, Division One Second Class, Division One

—in absentiâ

-*Mellor, Nicholas James* Smith, Iain Waddell, Simon David Philip Wallace, Julia Serena Second Class, Division One First Class Second Class, Division Two Second Class, Division Two

FORESTRY

Karfakis, Theodoros

Second Class, Division Two

GEOLOGY

Allan, Richard David Anderson, Ruth Victoria Barrs, Katie-Louise Taylor Booth, Alison Victoria Brightman, Alistair Colin Buckley, Gavin Paul -Burns, Alison Evelvn Bushe, Hannah Jennings Chapman, Stephen Conway, Rachel Mary Corry, Eleanore Charlotte Jane Davies, Emma Lynn Downie, Andrew Stewart Farrall, Nicola Jane Gray, Matthew James Ogilvie Greenaway, Gemma Louise Jeffrey, Laura Ledingham, Richard John Lees, Daniel James Lithgow, Anneliese MacKenzie, Erin Leeanne McKeen, Richard John Sidhu, Pritpaul Sinclair. Stuart Graeme Suttill, Hannah Louise Taggart, Samantha Towns, Christopher Simon Tuitt, Adrian Walters, Rachel Lucv White, Clare Hannah White, Joanne Elizabeth Wood, Ross David

Second Class, Division One Second Class, Division One Second Class, Division Two Third Class First Class Second Class, Division One Second Class, Division One Second Class, Division Two Second Class, Division One Second Class, Division Two Second Class, Division One Second Class, Division One Second Class, Division One Second Class, Division One Second Class, Division Two Second Class, Division One Second Class, Division One Second Class, Division One Second Class, Division One Second Class, Division Two Third Class Second Class, Division One First Class Second Class, Division Two First Class Second Class, Division One Second Class, Division Two First Class First Class Second Class, Division One Second Class, Division Two Second Class, Division One

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GEOLOGY AND PHYSICAL GEOGRAPHY

Brown, Calum Kenneth Birnie Burrow, John Edward Chapman, Gemma Claire Cromie, Helen Dickson, Alan Ross Gourlay, Sarah-Jane Lowson Hogg, lain Houssin, Jean-Bernard Lally, Jonathan Philip Malkin, Daniel Neil Mayne, Christopher Adam Punt, Rachel Melanie Rawles, Thomas Guy Edward Scott, Ruth Smith, Robert Sterry, James Robert Stevens, Timothy Dominic Swain, Emily Alice Wickerson, Paul James

Second Class, Division One First Class Second Class, Division One First Class Third Class Second Class, Division One Second Class, Division Two Second Class, Division One Second Class, Division One Second Class, Division One Second Class, Division One

GEOPHYSICS

Anderson, Ashley Burgin, Laura Elizabeth Dundas, Alan Douglas Evans, Miles Christopher Thomas Forbes, Douglas Alexander Haldane, Fiona Rosemary Halliday, David Fraser Hamilton, James William Henderson, Holly Macdonald, Greg MacFarquhar, Peter Paterson, Greig Alexander Tomlinson, Michael Bernard Second Class, Division One Second Class, Division One Second Class, Division Two Second Class, Division One Second Class, Division Two Second Class, Division One First Class Second Class, Division One Second Class, Division Two Second Class, Division Two Second Class, Division Two First Class Second Class, Division Two

in absentià

THE HONORARY DEGREE OF DOCTOR OF SCIENCE

Ian Gibson Halliday, M.A., M.Sc.(Edin.), Ph.D., F.R.S.E., Professor of Physics and Chief Executive and Deputy Chairman of the Particle Physics and Astronomy Research Council

SCHOOL OF MATHEMATICS

Candidates will be presented by the Head of the School of Mathematics, Professor T. Alastair Gillespie, B.A., Ph.D., F.R.S.E.

THE DEGREE OF MASTER OF SCIENCE

OPERATIONAL RESEARCH

Tsai, Pei-Chuan, B.Sc.(Lond.) Weng, Qing

THE DEGREE OF BACHELOR OF SCIENCE WITH HONOURS

MATHEMATICS

Aidasani Khyami, Nitesh Alexander, Michael Ryan Aylott, Paul David Ballantyne, John Joseph` Blair, Niall Boyd, Roddy Alexander Guthrie Brown, Gareth Robert Dundas Christie, Robin Conroy, Sara Di Sotto, Laurence Paul Donald, Iain Shamus Ross Duncan, Andrew James Hayton, Robert James First Class Second Class, Division One Third Class Second Class, Division One Second Class, Division Two Second Class, Division One Third Class Second Class, Division One Second Class, Division Two Second Class, Division Two First Class First Class

—in absentiâ

Headey, Jessica Ruth Henderson, David Hood, Alistair Andrew William Howard, Alexandra Louise Howell, Elizabeth Laura Huang, Zilin Hughes, Jessica Gwyneth Hutchinson, Laura Lee Inshaw, Kate Elizabeth Jackson, Lauren Elizabeth Jellema, Nicholas Michael Hugo Lear, Joseph Antony Leask, Paul Francis Leeming, Ewan William Lees, Jonathan David Alexander Lees, Tajana Kirsten Lindsay, Alan Euan Marshall, Heather Jane Marshall, Jennifer Marx, Lauren Elise McFarlane, Greg Mitchell, David Grant Malcolm Pokorny, Florian Till Poynton, Colin Thomas Reid, Tiger Mary Richard, Marc David Robinson, Matthew Aron Robinson, Thomas Macaulay Seymour, Mark Keith Shishodia, Ashok Shoulder, Neil Russell Tilston, Neil Shannon -Wang, Minsi Warner, David Benedict Thornton Williamson, Euan

Second Class, Division One Second Class, Division One First Class Second Class, Division One Second Class. Division Two Third Class Second Class, Division One Second Class, Division One Second Class, Division One Second Class, Division One Second Class, Division Two Second Class, Division One First Class Second Class, Division One First Class Second Class, Division One First Class Second Class, Division One Second Class, Division Two First Class Second Class, Division One First Class First Class Second Class, Division Two Second Class, Division Two Third Class Second Class, Division One First Class Second Class, Division One Second Class, Division One First Class Second Class, Division Two Second Class. Division Two Second Class, Division One Second Class, Division One

MATHEMATICS AND BUSINESS STUDIES

Kearney, Gillian Anne Pryce, Thomas Michael Second Class, Division One Second Class, Division Two

MATHEMATICS AND PHYSICS

Mitchell, Ross David

Second Class, Division One

-in absentiâ

MATHEMATICS AND STATISTICS

Bonsall, Nicholas Simon Andrew Gladwell, Mary Louise McCulloch, Scott William Owen, Laura Phair, Nicola Kathryn Speller, Thomas William Douglas Trotter, Linda First Class First Class Second Class, Division Two Second Class, Division One Second Class, Division One First Class Second Class, Division Two

THE DEGREE OF MASTER OF ARTS WITH HONOURS

MATHEMATICS

Allum, Melissa Victoria Fleming, Lorna Gladwell, Helen Leung, Hoi Ting Hatty Lloyd, Alastair Richard Graham Walker, Isla Second Class, Division Two First Class Second Class, Division One Second Class, Division One First Class Second Class, Division One

SCHOOL OF PHYSICS

Candidates will be presented by Professor Andy Lawrence, B.Sc., Ph.D., F.R.S.E., Regius Professor of Astronomy

THE DEGREE OF DOCTOR OF PHILOSOPHY

- Burkey, Daniel, M.Phys.(Oxon.). Thesis: "Cosmological parameter estimation from galaxy surveys."
- -Caputi, Karina Isabel, B.Sc. (Buenos Aires). Thesis: "The role of extremely red galaxies in the history of structure formation."
- -Ciccolini, Mariano Luis, Grad.(De Cuyo). Thesis: "Standard model higgs boson phenomenology at Hadron Colliders."
- Cleaver, Julie Abigail, B.Sc. Thesis: "Network formation in mixtures of nematic liquid crystal and colloids."
- Earl, Alasdair David, B.Sc.(H-W). Thesis: "Supporting the challenge of LHC produced data with ScotGrid."

–in absentiâ

- Floyd, David James Elford, M.Phys. Thesis: "On the host galaxies of quasars."
- Fox, Joseph Paul, M.Phys. Thesis: "The adsorption of hydrocarbons in porous materials: a computational study."
- Greve, Thomas Rodriguez, M.Sc. (Copenhagen). Thesis: "Dust and gas in the early universe - an observational perspective on galaxy formation and evolution."
- Johnson, Catharine Olivia Carver, B.Sc.(Vassar). Thesis: "X-ray surveys of active galactic nuclei in field and cluster environments."
- Kiyani, Khurom, M.Sci.(Lond.). Thesis: "An assessment of renormalization methods in the statistical theory of isotropic turbulence."
- Marson, Alan Edward, B.Sc. Thesis: "Laser induced fluorescence studies of dispersion by breaking waves."
- Seery, David James, M.A., C.A.S.M.(Cantab.). Thesis: "Quantum brane cosmology."
- Sheret, Ian, M.Phys.(Sheffield). Thesis: "The physical properties and composition of vega-type disks."

THE DEGREE OF BACHELOR OF SCIENCE WITH HONOURS

ASTROPHYSICS

Aitkenhead, Stewart Brettle, Laura Jane Rebecca Burnett, Matthew Dubois, Elizabeth Naomi Duncan, Ronald Lyness Dunlop, Ashley Tristan Edwards, Neil Simon Flanagan, Stephen Kevin Owen Fraser, James Alan Ruane Hynan, Katherine Beverley Ann Lavery, Stephen Vittorio Parker, James Robert Mayor *Scott, Vivian* Third Class Second Class, Division One Third Class Third Class Second Class, Division One Second Class, Division One Third Class Third Class Second Class, Division One Second Class, Division Two Second Class, Division One Second Class, Division One

COMPUTATIONAL PHYSICS

Bamford, Thomas Rosh Williams, Samuel Thomas Second Class, Division Two Second Class, Division One

in absentiâ

MATHEMATICAL PHYSICS

McGhee, Ian Patrick	First Class
Raunu, Gurprit Singh	First Class
Wilkinson, Caroline Maree	Second Class, Division One

PHYSICS

Allason, Daniel James Cooke, Richard Henry Todd Morrow Dolbear, Samuel Brian Imong, Jonathan Panat Josephides, Alexis Noel Lyons, Michael MacLean, Colin Douglas Martin, Lliam Kennedy Mathieson, Christopher Michael Robertson, Scott Fraser Ross, Erin Scott, Matthew James Stephen, Christopher John Taylor, Jamie Tweedie, Blair Peter Watt, Nicola Ruth

Second Class, Division One Second Class, Division Two Second Class, Division Two Third Class First Class Second Class, Division Two First Class Second Class, Division One Second Class, Division Two Second Class, Division One First Class Second Class, Division One

PHYSICS WITH METEOROLOGY

Queen, Sarah Louise

First Class

PHYSICS WITH MUSIC

Creedy, Oliver Jonathan

Second Class, Division One

THE DEGREE OF MASTER OF PHYSICS WITH HONOURS

ASTROPHYSICS

Dalsgaard, Anna Green, James William Jackson, Laura Frances MacIver, Andrew Ross, Alan Stuart Second Class, Division One Second Class, Division One Second Class, Division One Second Class, Division Two First Class

in absentiâ

MATHEMATICAL PHYSICS

Lynn, Stuart Sugden, Kate Elizabeth Polly First Class Second Class, Division One

PHYSICS

Carter, Richard Mark Guerin, Jonathan Alexander Mitchell, Lawrence Pittam, Robert Neil Muir Stevenson, Samuel Dikran Flett Styles, Nicholas Adam Third Class Second Class, Division One First Class First Class Second Class, Division One First Class

COLLEGE OF SCIENCE AND ENGINEERING

Candidates will be presented by the Head of the College of Science and Engineering, Vice-Principal Professor Grahame Bulfield, C.B.E., Ph.D., Hon.D.Sc., F.R.S.E.

THE DEGREE OF BACHELOR OF SCIENCE

—Al-Doy, Mohamed Nabeel

—Atkinson, Robert William Balfour, Katharine Louise Berresford, Jane Selina

Biggar, Jamie Gordon
Brand, Chris James
Dearnley, Laura Elizabeth
Fiddes, Anna Louise
Forrester, Alexander Stewart Daigle
Galloway, Kevin
Green, Kieron
Greig, Lynsey
Hair, Rupert Robin
Harper, Ross Iain
Haston, Charles Iain *Hole, Richard Margary*

—in absentiâ

—Ingledew, Jonathan Murray Kaliontzoglou, Stavros Kimber, Caroline Jane

-Koenig, Matthew Martin, Ian Andrew Phillip McMartin, James Andrew Miller, Stuart James Murray, Robert David

-Nankervis, Christopher James Reid, Katrina Jan

-Rensner, Martin James Ridgway, James Alexander Ross, Stuart Ian Scott, Christopher John

—Sewell, James Anthony Singh, Rashpal Smillie, Anne Marie Spencer, Thomas Charles Anthony

—Sturgis, Hugh Russell Taylor, Benjamin Roger Hugh Taylor, Thomas William

—Tsiamis, Andreas Turner, Lesley Anne Wahlberg, Laura Jane Wang, Xiao Xiao Wasserman, Alexander Frederick Weeratunge, Chatrini Ishara Williamson, Mark Paul

THE HONORARY DEGREE OF DOCTOR OF SCIENCE

Brian Frederick Gilbert Johnson, B.Sc., Ph.D., M.A., F.R.S., F.R.S.E., F.Acad.Eu., F.R.S.Chem., Order of the Grand Cross of Brazil, Professor of Inoganic Chemistry and Master of Fitzwilliam College, Cambridge.


Honorary Degree of Doctor of Science

Professor Brian Frederick Gilbert Johnson, B.Sc., Ph.D., M.A., F.R.S., F.R.S.Ed., F.Acad.Eu., F.R.S.Chem.

Presented by Professor Stephen Chapman, B.Sc., Ph.D., C.Chem., M.R.S.C., Head of the School of Chemistry.

Professor Brian Johnson was born in Northampton, England in 1938 and took his first degree at Nottingham in 1960 before completing his Ph.D. on liquid dinitrogen tetroxide as a non-aqueous solvent at Nottingham in 1963. He then proceeded to M.I.T. to work for a year on a Fullbright Scholarship where he prepared the crystal of the first fully characterised compound known to contain a metal-metal quadruple bond. He returned to the UK in 1964 and for several years taught and carried out research as a lecturer, first at Manchester and later at University College London.

Professor Johnson moved to Cambridge in 1970 where he was elected Fellow of Fitzwilliam College and lecturer in Inorganic Chemistry, and in 1978 was promoted to Reader. At Fitzwilliam he served as College Steward from 1972-77, Admissions Tutor in 1978, Dean from 1986-88, President from 1988-89 and as Acting Master from 1989-91. Called to Edinburgh in 1990 he succeeded Professor Evelyn Ebsworth as the Crum Brown Professor of Inorganic Chemistry and was Head of Department from 1992-95 before returning to Cambridge to take up the Chair of Inorganic Chemistry where he continues to carry out his research and teaching. In 1999 he was elected Master of Fitzwilliam College and from 1993-98 served as a member of Council of the EPSRC, was a member of TOP from 1993-97 and has been Chairman of PUSET from 1998. He has served on many Committees and Editorial Boards and on the NATO Panel for European Institutes.

Professor Johnson is internationally acknowledged as a pioneer of modern inorganic chemistry and can be regarded as one of the founding fathers of cluster chemistry. He has developed and adapted a number of techniques for the study of clusters, and has discovered a wide range of new structural cluster types. He has been a visiting Professor throughout the world and was elected F.R.S. in 1991, F.R.S.E. in 1992 and, amongst many other honours, was awarded the Grand Cross of Brazil for his contributions to Science.



Honorary Degree of Doctor of Science

Professor Ian Gibson Halliday, M.A., M.Sc.(Edin.), Ph.D., F.Inst.P., F.R.S.E.

Presented by Assistant Principal Professor Richard Kenway, B.Sc., D.Phil., C.Phys., F.Inst.P., F.R.S.E.

Professor Ian Halliday was born in Kelso in 1940. He was educated in the traditional Scottish system at Kelso High School and Perth Academy. At Kelso High School his father was the head mathematics teacher, which may have affected his later career.

At the University of Edinburgh Ian gained a first and an M.A. in Mathematics and Natural Philosophy, and won the Napier and Gadgil prizes. Afterwards he studied for an M.Sc. in the former department of Applied Maths and Theoretical Physics, where he became interested in the behaviour of collisions at very high energy. In particular he became a leading authority on the behaviour, at high energies, of Feynman diagrams.

Professor Halliday then moved to Cambridge and ended up achieving a two year Cambridge Ph.D. which led to a post as an Instructor at Princeton along with a fellowship at Christ's College to return to. His first permanent post was at Imperial College where he spent twenty-five years rising through the academic ranks as a theoretical particle physicist. He was then asked to go to Swansea to turn around their Physics Department which had sunk to an RAE score of 2 in Physics and 1 in Applied Physics. In the last RAE they obtained a 5.

Professor Halliday then became Chief executive of PPARC (the Particle Physics and Astronomy Research Council). In PPARC he has been responsible for a budget of over \pounds 300 million per annum. This budget has almost doubled in his seven years at PPARC, and more importantly, it has led to a clear leap in the capabilities of UK Physics as funded by PPARC, and a great increase in the visibility and impact of UK Physics at both a policy level and at a physicist level.

In Brussels, Professor Halliday was a member of DG Research's senior advisory committee EURAB and was Vice Chair at the beginning. EURAB has clearly been influential in setting up the proposed seventh Framework programme. Ian Halliday has also served as the UK delegate on many European Councils and Advisory Boards.



THE GENERAL COUNCIL of THE UNIVERSITY OF EDINBURGH Charles Stewart House 9-16 Chambers Street Edinburgh EH1 1HT Email General.Council@ved.ac.uk Telephone (home) 0131 664 2717 General Council Office Telephone 0131 650 2152

Warm congratulations on your graduation from the University of Edinburgh.

On receipt of your degree, you automatically become a member of the General Council of the University of Edinburgh. The General Council comprises all graduates, honorary graduates and honorary fellows, members of the University Court, and professors, readers and lecturers of at least one year's standing. It is the continuing voice of the body of graduates in the governance of the University. The General Council's responsibilities are set out in various Acts of Parliament but, briefly, through its Business Committee and its three Assessors on the University Court, it has the power to look into all questions affecting the well-being and prosperity of the University and to make recommendations to the University Court. Most importantly, the members of the General Council elect the Chancellor of the University.

The General Council is very keen to encourage recent graduates to play an active role in its work.

As a member, you will receive as part of Edit, the University of Edinburgh magazine, the Billet of business for the statutory half-yearly meetings of the General Council, which you are warmly invited to attend. We encourage you to involve yourself in the work of the General Council, by voting at the annual elections, and by standing for nomination as a member of the Business Committee or as an Assessor to the University Court. The Billet within Edit will help to keep you informed of current developments in the University. You will find further information and contact details on the General Council website at <u>www.general-council.ed.ac.uk.</u> The Secretary of the General Council will be pleased to hear from you at any time if you have queries or comments.

If you have been awarded a Certificate or Diploma from the University, you are eligible to receive a University Passport (by contacting Development & Alumni at <u>development@ed.ac.uk</u>). We hope that you will wish to keep in touch as an alumnus or alumna of the University. If you already hold a degree from the University your membership of the General Council dates from your first degree and is unaltered.

We wish you every success in your future life, and we very much hope that you will maintain a lifelong association with your University.



A Andrem

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Secretary

The University of Edinburgh Scholarship Programme

Attracting the most gifted students from the UK and from overseas lies at the heart of the University of Edinburgh's vision. The cost of higher education, however, can be a major obstacle for many students who, while meeting the University's admission requirements, struggle to find the necessary funds to take up their place.

The University of Edinburgh believes that as far as possible a student's financial situation should not be allowed to deny them access to a University education. One way of assisting such students is through supporting the University's Scholarship programme.

You can support scholarships at Edinburgh by endowing funds to establish a named scholarship which can be established for an investment starting at £25,000. With this option you can choose to name a scholarship after yourself, family or in honour of another person. You can also choose whether you wish the scholarship to support a particular discipline at the University or to leave it open to all students. Alternatively, you may wish to contribute to the Edinburgh Fund (or Alumni Fund) which is supported by graduates and friends from around the world and makes annual gifts to the University Scholarships programme. Since 1997, over £2M has been awarded to scholars studying at Edinburgh.

A further way of funding scholarships is by leaving a legacy to the University. The University has a long and proud tradition of being remembered in people's wills and you can choose to make your legacy support students at Edinburgh for years to come. For further information, please contact the University's Legacy Manager at the address below or visit <u>www.dev.ed.ac.uk/legacies.htm</u>

The Development and Alumni Office works closely with the University's Scholarships and Student Finance Office to ensure that donors are provided with the best possible information about establishing a scholarship. Details on scholarships currently available at the University can be found on our website: <u>www.scholarships.ed.ac.uk</u>

Your gift can make a real impact in the lives of students who might not otherwise be able to attend the University. If you are interested in making a donation towards a new or existing scholarship, or you would like further information on the University of Edinburgh's Scholarships Programme, please contact:

Development and Alumni, The University of Edinburgh, Charles Stewart House, 9-16 Chambers Street, Edinburgh EH1 1HT.

Tel: 0131 650 2240 Fax: 0131 650 2239 E-mail: <u>edinburghcampaign@ed.ac.uk</u>



The McEwan Hall

In 1875, R. Rowand Anderson was selected as the architect to design new accommodation for the University's Medical Faculty Included in his original plans were designs for a graduation hall.

The proposal to build the hall was initially deleted from the plans due to the lack of funding. However, in 1886, William McEwan,

founder of the brewing company of the same name, offered to fund the building.

William McEwan was born in Alloa in 1827 and served as Liberal Member of Parliament for Central Edinburgh from 1886-1900. A wealthy man, well known for his philanthropy, yet modest and rather retiring, McEwan wanted to provide the University with a large and splendid building which might also serve as a concert hall for major orchestral performances.

In 1888, work started on the grand semi-circular hall with its two steeply-raked galleries. Built in the Early Italian Renaissance style, its bold façade is flanked by projecting towers, each arranged to contain separate spiral stairs for each gallery. The sculpture over the door by Farmer and Brindley, London, depicts a graduation ceremony and the Latin inscription records McEwan's generosity.

The Hall itself was finished by 1894 but McEwan then undertook a lavish scheme of decoration. The decorations, by the artist William Palin, took some three and a half years' work and convey something of how the ideal of a University was viewed at that time. The dome is divided by ribs into 15 panels and at the base of each of the panels is the figure of a seated female, 13 of which hold an instrument appropriate to the academic discipline she represents. The lower part of the dome is a Pantheon of famous names connected with the University. Around the inner edge of the dome is an inscription of a passage from the Scripture: "Wisdom is the principal thing; therefore get wisdom: and with all thy getting, get understanding. Exalt her and she shall bring thee to honour."

Over the top of the platform is an immense painted panel entitled "The Temple of Fame", which depicts 80-90 philosophers and students ascending the steps. At the very top are the three goddesses representing Science, Art and Literature. The central deity, Literature, has a quill in one hand, and upon her knee is the Book of Fame. Under this immense panel, and either side of the platform, are four smaller panels. Of particular interest is the right-hand panel, viewed from the audience. It is a large fresco, representing Minerva, the tutelary deity of the University, seated upon a marble throne in the grove of Academia. In the group of figures on her left, there is a portrait of the donor, William McEwan (with arms crossed and long white beard), making the gift of his Hall. On either side of the platform, above the doors, are roundels of Sir Walter Scott (left) and Thomas Carlyle (right), both alumni of Edinburgh University.

The Hall was officially opened on December 3rd, 1897 with a ceremony at which the Honorary Degree of Doctor of Laws was conferred upon William McEwan.

PROGRAMME OF MUSIC

From 2.30 p.m. to 3.00 p.m. the following Programme of Music will be performed on the Organ by JOHN PHILIP KITCHEN, M.A., B.Mus., Ph.D., F.R.C.O., L.R.A.M., University Organist.

Sonata No. 4 in B Flat	Felix Mendelssohn
Concerto del Sigr Torelli	arr. J.G. Walther
Concerto in B Flat	John Stanley

At the entry of the Academic Procession

THE PRINCE OF DENMARK'S MARCHJeremiah Clarke

After the Ceremony

SORTIECharles Tournemire

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THE SCOTSMAN Wednesday, 15 July 1998

GRADUATIONS 19

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University of Glasgow

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ASTER OF ARCHITECTURE

tun. LAW & FINANCIAL STUDIES MASTER OF LAWS LAW - Frank Peter Heinzmann, Angela McGrettis, Thomas Alexan-der Treuer LAW/ECONOMICS - Julie May Car-Wie. yle. MASTER OF ACCOUNTANCY INTERNATIONAL ACCOUNT-INGEFINANCEAL MANAGEMENT Md Suhaimi Bin Md Saleh, Sohail Ahmed Ramzan, Francesca Tronci.

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Jampbell, Suzanne room and. SCOTTISH UNIVERSITIES RE-SEARCH & REACTOR CENTRE Keith McKay. SOFTWARE ENGINEERING – David Gordon Farmer.

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University of Edinburgh

20 TELEVISION & RADIO

Yesterday's television RADIO Fanfare to the Commons men 1 Anthony ecret History: Winter of Radio Scotland annel 4, 9pm, Mondav Radio 1 Classic FM **Tonight's highlights** World Service Radio 5 Live Club Culture (Channel 5, 8:30pm) Virgin Radio 2 Talk Radio Radio 3 2:00 The BBC Orchestrat 10:45 Night Wave on of TWA flight 800 in 1996 (Channel 4, 9pm Radio 4 7:45 Under One Roof: Sch Out, By Wendy Lee, b CINEMA 9:00 Midweek.W/th Libby Purves 9:45 LW: Daily Service. 9:45 FM: Serial: A Boy From The Hogarth Press, Bichard 8:00 News; The Moral M 8:45 World Cup Letters. R-00 Moutry Life 9:30 Midweek. 10:00 The World Tonigh 10:45 Book At Bedtime: The World On Fire River Base and 3:45 Ways With Word EDINBURGH Filmhouse (0 4:30 Thinking Allowed, Ve 5:00 PM, With 11:30 LW: Today in Parliamer 11:30 FM: The Mark Steel 5:54 LW: Shipping For 5:57 Weather. 6:00 Six O'Clock News. 6:30 Audio Diaries. A Hi 12:00 News. 12:30 The Late Book: Every Thing, Gillian Share rea 12:48 Shipping Forecast. 1:00 As World Service. 5:30 World News. 5:35 Shipping Forecast. 5:40 Inshore Forecast. 5:45 Prayer For The Day 5:47 Farming Today 7:15 Front Row. A 6:00 Chris Kane, 9:00 Re 12:00 David Bain, 3:00 Si 6:00 Home and Dry, 7:00 Hour, 8:00 GUS Stewart, 1 Through Due Aller 96.3 QFM 5:00 Stuart Rodgers, 10:00 Mike Arthur, 2:00 David Grant, 6:00 B Ped, 10:00 Kevin Brady, 2:00 Ga The Best The Exorcist Point Blank Worth Watching City Of Angels The Little Mermaid 6:00 Chart Atta 10:00 Bill Barcla ix Days, Seven Night Don't Bother Im; FM 92.4-94.7 Radio 1 FM dio 3 FM 90.2-92.4 Radio 4 AW 693 + 909 Classic FM Radio 1053 / 1089kHz 100Hz; FM 92.4-94.7 Scot 1548 AM 97.3 FM Clyde 1 Deep Impact

TV Film Choice London Belongs To Me ast Holiday Amongst Women (8BC2, 9:30pm) Blazing Saddles REPERTORY CINEMA APPROVED READER HOLIDAY A matter of national insecurity 100 ALL INCLUSIVE Algarve DEPARTS ON 21 FEBRUARY 1999 ALL INCLUSIVE ~ FROM £489 And intercoorder of the population of the second se ALISON GRAY in the United THE SCOTSMAN CALL THE BROCHURE SERVICE 0131 220 4020 QUOTING EEN

Wednesday, 15 July 1998 THE SCOTSMAN

Civil rights fears over steep rise in phone taps

'Worrying trend' prompts demand for tighter rules on electronic surveillance DAVID MONTGOMERY gave he indication as to how to cli

THE SCOTSMAN Wednesday, 15 July 1998



Princess of Wales: Feared Peter Mandelson: Phone Alison Halford: Took supposedly bugged by MI5 Merseyside Police to

Device takes wind out of flatulence

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Angler says trophy the stuff of regret GORDON CURRIE

Fisherman decides to sue taxidermist over prize memento

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Marriage and

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EILEEN MURPHY

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The feeling's great.

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NEWS 3



20 TELEVISION & RADIO

12:05

Radio 5 Live

Classic FIV

Talk Radio

2:00 The BBC Orchestras

30 Performance On Three

3:30 A View With A Room.

favourite place to 3:45 Ways With Worr

4:00 News: Four Wall

5:00 PM. With 6:00 Six O'Clock News 6:30 Audio Diaries, A /

7:15 Front Row, All return of Philip the stage as Dr

 Hz, 370m; FM 92, 4-94.7, Radio 1 FM
 102,5 FM
 Clyde 2

 9/2, Radio 3 TM 90, 7-92.4
 Radio 4
 102,8-96.4 FM
 102,8-96.4 FM

 adio 5 LWV 692 + 999 Classic FM
 1035 AM 96.7 FM
 1033,7 M 96.7 FM
 103,7 FM Q95.9 FM

 HX, Talk Radio 1053 / 1089KHz
 103,8 FM 72,6 CH
 8 Solway MW 81
 Solway MW 81

 Forth 1548 AM 97,3 FM Clyde 1
 Sheland HW 81
 Sheland HW 81

RADIO

Radio Scotland

Radio 2

Radio 3

30 Artist Of The Week

and the oce 00 The Radio

Radio 4

00 Composer Of The West

30 Frank Muin: A Kentish La

's On Duke Street

NEWS 3



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TREVOR JOHNSTON

Civil rights fears over steep rise in phone taps

'Worrying trend' prompts demand for tighter rules on electronic surveillance

DAVID MONTGOMERY gave no indication as to how to



Peter Mandelson: Phone Alison Ha supposedly bugged by MI5 Merseysia

A matter of national insecurity

Device takes wind out of flatulence



visit to Scotland. He said:

Marriage and

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EILEEN MURPHY

Fisherman decides to sue taxidermist over prize memento

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4 NEWS

Brown's £56bn sales pitch

Cheers at bonus could be silenced by serious slump

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SNP claims Scotland was better off under Tories

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Treasury spending strategy

	1330-33	1999900	2000-01	2001-02	LIDADDE	
Scotland (£m)					snange	
Support for local government					n n mannan an a	
Current expenditure	5,448	5,688	5,864	6,014	+10.4%	
Non-housing capital spend	359	345	356	392	+9.2%	
Agriculture	517	478	464	496	-4.0%	
Arts, libraries, sport	77	80	82	84	+8.7%	
Further and higher education (excluding student support)	914	1,013	1,070	1,136	+24.3%	
Student support	357	320	308	299	-16.2%	
Health	4,624	4,924	5,214	5,534	+19.7%	
Housing	498	524	634	655	+31.6%	
Industry, enterprise and training	599	555	558	608	+1.6%	
Law and order	460	487	488	508	+10.3%	
Crown office	49	51	51	51	+3.1%	
Other environment	328	323	325	327	-0.4%	
Scottish Parliament	0	55	80	47		
Other public services	160	183	194	191	+19.5%	
Roads and transport	245	267	270	282	+15.1%	
Social Work	66	74	77	81	+23.8%	
European funds	123	153	163	173	+40.7%	
New Deal for Schools	29	27	27	27	-9.1%	
TOTAL SCOTLAND	14,853	15,548	16,266	16,904	+13.8%	
United Kingdom (£bn)						
Foreign Office	1.04	1.1	1.1	1.13	+8.7%	
International development	2.3	2.4	2.9.	3.2	+39.1%	
Defence	22.2	22.3.	22.8	23	+3.6%	
Social Security	98.4	103.8	106.4	112.4	+14.2%	
Common Agricultural Policy	2.6	2.5	2.5	2.7	+3.8%	
European Union	3.5	2.9	2.9	3.2 -	-8.6%	
Scottish Office	13.1	13.8	14.5	15.1	+15.3%	
Contraction of the second						
Welsh Office	6.7	7	7.4.	7.8	+16.4%	
Welsh Office Northern Ireland Office	6.7 5.7	7	7.4.	7.8 6.3	+16.4%	

YEAR

Recipe for conflict over purse strings

A NEW battleground for Scottish politics emerged yesterday when the Chancellor released exact public spending figures for the next three years and said ministers would be held to very strict spending limits and policy promises.

next Gree years and sam measure block overy virtues (spending filming and policy). That strict and sterra approach, one of the malinark's of Geometry and the savare of presi mischer for opposition parties and the parties of the Exchequer, could be a source of presi mischer la Party in the first Holycool barrent and the parties of the savare of the main of the savare of the savare of the main of the savare of the savare of the main of the savare of the savare of the main of the savare of the main of the savare of th

Law and order

£4bn extra and Dewar gives three new pledges

Wednesday, 15 July 1998 THE SCOTSMAN

DAVID SCOTT

cording to Donald Dewar,

equivalent to zeos. Scot. Mr Dewar said he and the Prime Minister had agreed three new spending pledges for Scotland on education and Scotland on education and Donald Dewar: Admitted there will be losers

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Councils will have more freedom to set their budgets

DAVID SCOTT

key policy targets and rewrite spending plans after next May's elections to reflect the political complexion of the new Scottish

Local government

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