

## A History of Neuroscience at Newcastle

Professor Colin Ingram (1960-2013) joined Newcastle from Bristol University in 2000. Enthused by the contribution that Newcastle has made to the field he compiled this history. In his memory we endeavour to maintain it.

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### 1864

St Nicholas' Hospital (otherwise called Newcastle upon Tyne City Asylum) is founded and opened in 1869. From 1865 one member of the local asylums was appointed Lecturer in Psychological Medicine. In 1889 **Professor Thomas McDowell** superintendent at Morpeth asylum took up this appointment and in 1909 became the first Professor of Psychological Medicine holding this post until 1918. The post was subsequently held by **Professor James Middlemas** from 1918-1922.



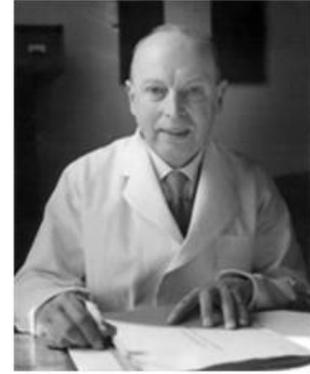
### 1878

The organic basis of nervous disorders is studied by **Sir David Drummond** (1852-1932, pictured) who was appointed Pathologist at the Royal Victoria Infirmary in 1878, and held posts of Lecturer in Physiology and Professor of the Principles and Practice of Medicine (1911-1924). Drummond's interest in the pathology of nervous disease was influenced by his colleague the neurologist **Sir Byrom Bramwell** (1847-1931) who at the time of Drummond's appointment was Lecturer on Medical Jurisprudence and Pathology (1871-1879) and Physician and Pathologist at the RVI (1874-1879). In 1883 Drummond published the authoritative book on *Diseases of the Brain and Spinal Cord*. Although he never worked in a mental hospital he had great interest in abnormal mental states, especially if there was an organic basis for the mental breakdown. As a result he was one of the two medical members of the *Royal Commission (1924-26) on Lunacy and Mental Disorder* which recommended outpatient clinics be opened and aftercare services developed to enable community treatment.



### 1921

The foundations of neurology in the early 20th century were greatly influenced by **Professor Frederick Natrass** (1891-1979, pictured). He graduated from Newcastle in 1914, began working at the Royal Victoria Infirmary in 1918, and was awarded the gold medal for his M.D. thesis in 1920. He joined the staff of the RVI in 1921, becoming a consultant neurologist (1935-41) and the first full time Professor of Medicine (1941-1956). During his career Natrass worked on various disorders including myasthenia gravis, muscular dystrophy, and recurrent polyneuritis (sometimes referred to as 'Maladie de Natrass') and authored the popular textbook *The Commoner Nervous Diseases* (1931). In 1932 he and his Newcastle colleague **George Hall** (1879-1955) were among the 16 founding members of the Association of British Neurologists.



### 1933

Neurosurgery was first established in Newcastle by **Alfred Pattison** (1903-1940). Pattison graduated from Newcastle in 1929 and undertook training with Ferdinand Sauerbruch in Berlin. After taking FRCS in 1931 he had a Rutherford Morison Travelling Scholarship to spend a year as surgical assistant to Harvey Cushing at the Peter Bent Brigham Hospital in Boston, USA. On returning to Newcastle Pattison was first surgical registrar and then consulting neurological surgeon to Newcastle General Hospital where he established a neurosurgical unit serving NE England. He had a short but notable career. In 1935 he was the first to implant radon-222 seeds for interstitial radiotherapy of pituitary basophilism (Cushing's Disease) and in 1937 held a Hunterian Professorship of the Royal College of Surgeons.



### 1939

Neurosurgeon **George Rowbotham** (1899-1975, pictured) took up a post as consultant neurosurgeon, shortly before Pattison's untimely death. He remained in Newcastle until retiring in 1964, during which time he built up a world-renown neurosurgical department, specialising in head injuries, and established the Regional Neurosciences Centre (1962). His department was first to use EEG in Newcastle. Rowbotham's book *Acute Injuries of the Head* (1942) ran to five editions, and his later book *Pictorial Introduction to Neurological Surgery* (1953) with Douglas Hammersley was an important training manual. He is particularly noted for the introduction of hypothermia in the treatment of head injuries and for the use of cryosurgery in intracranial procedures.



## 1947

Initiation of the [Thousand Family Study](#). Originally designed to investigate illness in the first year of life in a cohort of 1142 children born in Newcastle between 1 May and 30 June 1947, this cohort has continued to be studied up to the present. From the extensive psychosocial data collected during the first five years of life it has been possible to demonstrate a significant effect of family disadvantage in predisposing an individual to increased risk of major depression in adulthood (published in 1999). This was one of the first longitudinal studies to clearly establish early psychosocial factors in adult psychiatric health.

Psychiatry research begins in Newcastle with the appointment of **Professor Alexander Kennedy** (1909-1960, pictured) as the first full time Professor of Psychological Medicine (1947-55). The University provided much support to establish one of the first Academic Departments of Psychiatry in the country. In 1948 Kennedy recruited **Leslie Kiloh** (1917-1997) who worked at St Mary's Asylum in Stanington and remained in Newcastle until 1962 when he took up the Chair of Psychiatry at the University of New South Wales, and **Robert Orton** (1914-1991) who had worked with Kennedy in Cairo during the war and was then based at Garlands asylum (Carlisle).



Kennedy also appointed the neuropsychiatrist, **Henry Miller** as associate physician. Long before liaison psychiatry became fashionable they established a consultation service to the wards which was second to none. The new department (pictured) introduced EEG to the Royal Victoria Infirmary under the guidance of **John Osselton**, and undertook clinical trials for the treatment of schizophrenia. Also in 1948 **John Child** was appointed Physician Superintendent at St Nicholas' Hospital. Child was involved in the early trials of imipramine and established excellent surgical and medical services to St Nicholas's Hospital, where in the mid 1950s psychosurgery was regularly performed. During his time at Newcastle Kennedy published articles on organic reaction types and also wrote several radio plays based on his experience as a psychiatrist during the war under the pseudonym Kenneth Alexander



The neuropsychiatrist **Professor Henry Miller** (1913-1976, pictured) is appointed to the Department of Psychological Medicine. Miller had graduated in medicine from Newcastle in 1937 and after brief periods at John Hopkins, Baltimore, and Great Ormond Street, London, was appointed as neurological registrar under Natrass. This was followed by a period in the RAF, before returning to a consultant post in 1947. As associate physician Miller provided neurological assessment of mental health patients. He was critical of psychoanalysis and expressed



concerns about the separation of psychiatry from medicine and physical symptoms, often referring to psychiatry as 'neurology without physical signs'. In 1956 he formed a neurology department at the Royal Victoria Infirmary and developed research interests in demyelinating diseases, especially multiple sclerosis, establishing the Demyelinating Diseases Unit in 1961. Miller held posts of Reader in Neurology (1961-64), Professor of Medicine (Neurology) (1964-68), Dean of Medicine (1966-68) and Vice Chancellor (1968-76).

**William Catton** (1912-2001) is appointed Lecturer (1947-70), and later Reader (1970-77), in Neurophysiology. Catton conducted research on the frog retina and locust visual system and, with the entomologist **Edmond Burt**, discovered that the multiple lens system of the insect eye had greater resolving power than a single lens eye and offered an electrophysiological explanation.

### 1949

The distinguished neuropathologist, **Professor Sir Bernard Tomlinson CBE** (pictured) is appointed as senior registrar in pathology at Newcastle General Hospital. He subsequently became consultant pathologist (1950-53) and senior consultant pathologist (1953-82), before becoming Director of the Department of Pathology in 1955. He was honorary senior lecturer in pathology (1960-71) and honorary professor (1972-85). During his career Tomlinson conducted research on Alzheimer's disease in collaboration with Martin Roth, Garry Blessed, Robert Perry and Elaine Perry. He developed quantitative measures of a wide range of indices of cerebral pathology which could be related to assessments of cognitive function near to death. His work correlated the histological changes in the brains of demented subjects and the degree of clinical abnormality, and quantified brain changes that occur in normal aged people.



### 1951

**Professor John Walton** (later Lord Walton of Detchant, pictured), arguably the most renowned British neurologist of his generation, is appointed to the Department of Neurology. Walton arrived at Medical School in Newcastle in 1941, later undertaking his MD thesis on subarachnoid haemorrhage. During 1951-56 he was research assistant to Natrass with whom he established a classification of muscular dystrophies. He later became First Assistant in Miller's new Department of Neurology (1956-8), Consultant Neurologist (1958-68), Professor of Neurology (1968-1983), and Dean of Medicine (1971-1981). Walton established an extensive research programme in neuromuscular disorders, especially muscular dystrophy, and is noted for introducing electromyographic recording to the study of neurological disorders in Newcastle. His phenotypic classification of muscle disease laid the foundation for later studies in molecular genetics. In 1979 he received a knighthood for his services to medicine and was raised to the Lords in 1989.



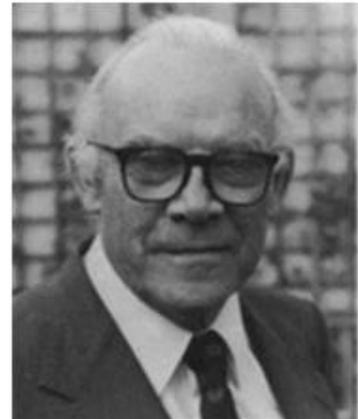
## 1955

**Sydney Brandon** (1927-2001, pictured) establishes paediatric psychiatry research in Newcastle. Graduating in medicine from Newcastle in 1954, Brandon was initially interested in paediatrics, but his involvement with the behaviour of disturbed children led him into psychiatry. He was appointed Nuffield research assistant in child health at the Royal Victoria Infirmary (1955-1959) before becoming consultant. From 1963-1964 he worked as a research fellow at Columbia University, New York, before returning to a lectureship in psychiatry at Newcastle (1964-1966) and subsequently Nuffield Foundation Fellow in Psychiatry (senior lecturer) (1966-1969). During his time in Newcastle Brandon published on eating disorders in the young, amphetamine addictions, and community treatment programmes.



## 1955

**Gordon Gryspeerd** (1913-1993, pictured) moves to Newcastle to found the Department of Neuroradiology which would become part of the Regional Neurosciences Centre. When it opened in 1962 it was one of the best, if not the best, neuroradiology facility in the country. Gryspeerd developed myelographic techniques which became standard practice throughout the world and was a founder member of the European Society for Neuroradiologists. He remained working until 1978.



## 1956

**Professor Sir Martin Roth FRS** (1917-2006, pictured) is appointed to the Chair of Psychological Medicine (1956-1977). The most respected and successful psychiatrist of his generation, Roth established Newcastle as one of the leading centres of psychiatric clinical research in Britain and founded two main areas of research which remain to this day: psychogeriatrics and the phenotypic characterisation of affective disorders. Many of the major concepts in psychogeriatrics, especially in dementia, were conceived in Newcastle. Roth made major contributions in distinguishing subtypes of mental illness arising in late life, including elucidating the pathological distinctness of the clinical syndromes of cerebrovascular dementia caused by strokes and Alzheimer's disease arising from abnormal protein formations in the brain. He conducted important clinico-pathological studies with Bernard Tomlinson and **Garry Blessed** (consultant psychogeriatrician 1966-1988), devising the first scales for measuring dementia and demonstrating the quantitative relationship between cognitive levels and extent of brain damage, including expression of Alzheimer's abnormal proteins. With others Roth specified diagnostic criteria for syndromes of depression. For his



scientific achievements in psychiatry Roth became one of only three psychiatrists to be appointed FRS (the first being Sigmund Freud).

Roth appoints **Clair Gurney** and **Alan Kerr** as Senior Research Officers to a newly-formed MRC Group to which **Roger Garside** (Senior Lecturer, later Reader, in Clinical Psychology) gave invaluable advice on the application of multivariate statistical analysis. **David Kay** (Research Assistant then Consultant, 1961-76) later joined from the MRC Unit at Graylingwell Hospital, Chichester where he had started work on classification of old age mental disorders with Roth. In 1976 Kay was appointed the first Chair of Psychiatry at the University of Tasmania, returning to Newcastle to continue research on old-age disorders after retirement in 1983.

Miller forms the Department of Neurology at the Royal Victoria Infirmary. He initially appointed Walton, as his assistant specialising in neuromuscular disease, and **Kurt Schapira**, as research fellow to work on multiple sclerosis. As a neuropsychiatrist Schapira would later work in psychiatry with Roth on the clinical and prognostic relationship between anxiety disorders and depressive illnesses, retiring in 1989.

## 1957

**Professor John ('Hank') Hankinson** (1919-2007, pictured) joins Rowbotham and **Laurie Lassman** in the Department of Neurosurgery, eventually becoming the first Professor of Neurosurgery (1972-84). Having learned stereotaxic surgery from the pioneers Luis Amador (Chicago) and Lars Leksell (Karolinska Institute, Sweden), Hankinson's principal interest was in functional neurosurgery, especially for the relief of rigidity and tremor in Parkinson's disease. During the 1970s Hankinson collaborated with Alan McComas and Peter Wilson to make real time electrophysiological recordings using steel electrodes from the human brain in conscious patients to assist the functional mapping of the brain prior to surgery. He also developed the ventricular puncture method for relief of intracranial pressure.



## 1959-1965

Miller coordinates the first survey of multiple sclerosis in the country. Miller and Schapira publish two influential papers in the *British Medical Journal* on the aetiology of multiple sclerosis. This was followed by a series of papers during the early 1960s in *The Lancet* and *British Medical Journal* on controlled trials in the management of multiple sclerosis using aspirin, prednisolone, gammaglobulin, tuberculin, and tranlycypromine.

## 1961

The **Demyelinating Disease Unit** is established initially through local philanthropic funding and then as the MRC Group on Demyelinating Diseases. Initially based at 13 Framlington Place (pictured), from 1961 - 73 the unit was directed by **Professor Ephraim ('EJ') Field** (1915-2002). Field was a graduate of Newcastle (1938) and had worked in Bristol before being appointed as a neuropathologist in Miller's Department of Neurology in 1958 and becoming Professor of Experimental



Neuropathology in 1967. The Demyelinating Disease Unit was acknowledged to be one of the major centres in the world for research into multiple sclerosis and other neurodegenerative diseases like scrapie, and pursued work on identifying biomarkers of disease. In his 12 years as Director of the Unit, Field was prolific publishing many high profile papers, including 12 letters to *Nature* and 34 letters to *The Lancet*. In 1973-4 Field was succeeded as Unit Director by Professor A.M. Thomson.

## 1962

Rowbotham and Walton create the **Regional Neurosciences Centre** (pictured) at Newcastle General Hospital. The first of its kind in the country, the centre combined neurology, neurosurgery, neuroradiology, neurophysiology and experimental laboratories to provide a comprehensive centre for treatment and research.



Walton's Department of Neurology becomes a leading centre for research on neuromuscular disorders. The multi-disciplinary research group would go on to make major contributions to inherited muscle disorders, initiating genetics and molecular cell pathology of muscle disease, and publishing a number of papers in *Nature*.

Creation of the MRC Research Group on the Relation of Functional to Organic Psychiatric Illness under the directorship of Roth.

## 1963

Newcastle becomes a university independent from Durham.

## 1964

Kay and Roth publish two seminal papers in the *British Journal of Psychiatry* which indicated that dementia was a major epidemiological entity in the elderly.

**Professor Israel ('Issy') Kolvin** (1929-2002, pictured) is appointed as consultant in charge of the Nuffield Psychology and Psychiatry Unit and lecturer in the Department of Psychological Medicine. He later became one of the first holders of a chair in child psychiatry (1977-91). Kolvin was among those to pioneer the move of child and adolescent psychiatry from being dominated by psychoanalytic theories to empirical research investigating the nature, extent, and causes of emotional and behavioural disorders. He turned the Nuffield Unit into one of the world's foremost university departments of child and adolescent psychiatry. Kolvin took advantage of the Thousand Family Study (see 1947) to conduct longitudinal epidemiological investigations of the psychosocial factors which either perpetuate or protect against a negative outcome across generations. He also conducted groundbreaking work on evaluating the effectiveness of different forms of psychological interventions delivered in schools.



## 1964

**Professor David Shaw** is appointed to Miller's Department of Neurology. Shaw was one of the earliest neurologists to develop an interest in cerebrovascular disease and stroke. He became Professor of Neurology (1981-1990) and later made major contributions to medical education, becoming Clinical Sub-Dean (1970-1981) and then Dean of Medicine (1981-1990).



## 1965

**Alan McComas** (Honorary Lecturer 1962-1965; Lecturer in Physiology 1965-1973) and **David Barwick** are appointed to the Regional Neurosciences Centre to establish a Clinical Neurophysiology Department. McComas was recruited to develop research into skeletal muscle and its innervation having trained with Bernard Katz at University College London.

## 1966

Muscular Dystrophy Research Laboratories open adjacent to the Regional Neurosciences Centre and programme funding from the MRC starts that lasts until 1981. Research on the neuromuscular innervation was extended with the appointment of **Professor John Harris** who would later hold the Chair of Experimental Neurology (1979-2005) and who was joined in 1975 by **Professor Clarke Slater** (later Senior Lecturer 1985; Professor of Neuroscience 2000-2005).

Landmark publications in *Nature* (1966) and *British Journal of Psychiatry* (1968) by Tomlinson, Blessed and Roth demonstrating the relationship between Alzheimer's-type neurofibrillary tangles and senile plaques and measures of dementia.

## 1966-1992

Until 1963 the Department of Psychology (first constituted in 1952) was primarily based in Durham under the leadership of **Professor Frederick Smith** (1912-2006), with few staff based in Newcastle. A newly independent department was created in Newcastle under the successive headships of **Professor John Brown** (1966-69), **Professor Roy Davis** (1969-73) and **Professor Max Hammerton** (1973-92, pictured). Work in animal behaviour, particularly birds, was started in the 1970s with the appointment of **John Lazarus**, and continues in Newcastle today with the [Centre for Behaviour and Evolution](#).



## 1968

The MRC Demyelinating Diseases Unit moves to a new building at Newcastle General Hospital (pictured) to provide modern research facilities. The unit successively became the MRC Neuroendocrinology Unit (1979-1989) then the MRC Neurochemical Pathology Unit (1989-2000), and was a major part of the Institute for Health of the Elderly created in 1994. The building was demolished in 2006 and was replaced by the Edwardson Building (opened 2008).



## 1971

Roth is elected the founding president of the Royal College of Psychiatrists.

McComas publishes a landmark paper using electrophysiological methods to estimate the number of motor units in a human muscle. This work was in part conducted by **Peter Fawcett** (Consultant and Honorary Senior Lecturer 1971-2008) who would go on to develop one of the leading Clinical Neurophysiology Departments in the country.

## 1972

Roth, Schapira, Garside, Kerr, and **Clair Gurney** (1933-2006, pictured) publish a series of landmark papers in the *British Journal of Psychiatry* on the classification of affective disorders and the relationship between anxiety and depressive illnesses, using detailed information gained from structured interviews.



## 1973

**Professor Walter ('Wally') Bradley** (Foundation Professor of Experimental Neurology 1973-1977 funded by Action Research for the Crippled Child) publishes seminal studies on the abnormalities of peripheral nerves in murine models of muscular dystrophy.

**Professor David Bates** first appointed to the Department of Neurology later becoming Chair of Clinical Neurology (2002-2009). During his career in Newcastle Bates would be involved in many multicentre trials for treatment of multiple sclerosis.

Department of Psychology moves from 7 Sydenham Terrace, Newcastle to new premises in the Ridley Building (pictured). The administrative base of psychology has remained in the building to today, although research has moved to other buildings on campus.



## 1973-1975

Development of the Department of Neuropathology with the appointment of **Professor Robert Perry** as consultant (appointed 1973; MRC Clinical Scientist and Senior Lecturer 1980; Clinical Professor of Neuropathology 1999-2009, pictured) and **Professor Elaine Perry** (appointed 1975; MRC Scientist 1989; Professor of Neurochemical Pathology 1995-2009). Human brain tissue for histological and histochemical analysis had been available since early 1960s but



Robert Perry developed this into a resource for more detailed neurochemistry. The **brain bank** (now called the Newcastle Brain Tissue Resource) is one of the world's most well characterised brain banks on neurodegenerative diseases and has led to many discoveries in relation to neurodegenerative diseases.

## 1974-1976

**Professor Henryk Wisniewski** (1931-1999) becomes director of the MRC Demyelinating Diseases Unit (pictured centre with members of the unit). Wisniewski developed his work on neurofibrillary tangles in Alzheimer's disease, and also introduced work on the role of



aluminium in the aetiology of the disease. Work of the Unit clearly pointed out that demyelinating antibodies are key players in the pathogenesis of chronic inflammatory demyelinating lesions.

### 1976-1978

A series of landmark papers in which Elaine Perry, Robert Perry, Tomlinson and Blessed establish the cholinergic hypothesis of dementia. They show that the brain's ability to produce acetylcholine is severely reduced in Alzheimer patients and that there is a robust relationship between impaired cognitive deficit in Alzheimer's disease, plaque formation and cortical cholinergic deficit.

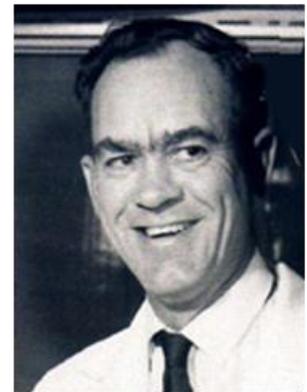
### 1977

**Professor Donald Eccleston** appointed as Chair of Psychiatry and was head of department until retiring in 1995. He established the Regional Affective Disorders Unit, the longest standing in-patient unit for the treatment of depression in the UK. Eccleston also established the Psychiatry Research Unit, based at 1-4 Claremont Terrace (pictured), which conducted research on pharmacological treatment of affective disorders including therapeutic trials and animal studies.



### 1978

**Professor Simon Miller** is appointed as Chair of Anatomy in the Medical School (1978-1989). He initiates work on motor function linked to the clinical work in neurology, especially work on the human corticospinal tract, and makes a series of academic appointments with research interests in motor function and neural development. The distinguished neurophysiologist **Professor Ben Burns FRS** (1915-2001, pictured) joined the department in 1980 and continued his work on learning and synaptic plasticity.



### 1978-1984

Development of psychiatry department with the appointments of **Andrew Fairbairn** (Consultant and Clinical Lecturer 1978-2009); **Professor Ian McKeith** (appointed 1983; Chair of Old Age Psychiatry in 1994-present), and **Professor Nicol Ferrier** (appointed 1984; Chair of Psychiatry 1990-present).

### 1979

Fawcett and **Ian Schofield** (Neurophysiology Consultant 1979-present) first introduce evoked potential studies and single fibre EMG recording to clinical neurophysiology in Newcastle.

**Professor Jim Edwardson** (appointed 1979; Chair of Neuroendocrinology 1982-2006) appointed director of the MRC Unit at Newcastle General Hospital. The unit was successively the MRC Neuroendocrinology Unit (1979-89), the MRC Neurochemical Pathology Unit (1989-2000), and then incorporated into the MRC Centre Development for Clinical Brain Ageing (2000-2006). Edwardson conducted research on the role of metal ions in brain pathologies, neurochemical changes in age-related disorders and depression, and peptides as neuromodulators. Edwardson was founding Director (1994-2006) of the Institute of Ageing and Health which has become a world-leading centre for research in age-related disorders.



**Robert McBurney** appointed to Department of Physiology (Lecturer 1979-1989) and undertakes research on role of ion conductances in excitability and neurosecretion.

## 1980s

Neurology research moves to more molecular mechanisms of disease. **Professor Douglas Turnbull** (appointed as clinical lecturer 1983; Chair of Neurology 1990-present) develops a programme of research into the genetics of mitochondrial disease.

## 1981

Kolvin publishes in his influential book, *Help Starts Here. The Maladjusted Child in the Ordinary School*. This reports the first controlled trial of psychological treatment of children in schools, and proved that treatment was effective in ameliorating emotional and behavioural difficulties.



Tomlinson and colleagues publish two influential papers showing that as well as cholinergic deficit the transmitter noradrenaline is also deficient in the brains of Alzheimer patients.

## 1984

New Medical School opened under the guidance of Walton.

## 1986

A paper in *The Lancet* reports the measurement of aluminosilicates associated with senile plaques in brains of Alzheimer dementia patients and in pre-senile aged individuals.

## 1987

**Professor A. David Mendelow** (appointed 1987; Chair of Neurosurgery 1992-present) joins **Robin Sengupta** (consultant neurosurgeon 1978-2002) to develop research and multicentre trials of surgical interventions for subarachnoid haemorrhage. Sengupta's book *Subarachnoid Haemorrhage* (1986) with Victor McAllister reflects a personal experience of operating on nearly 2000 patients with cerebral aneurysms. After retirement, he established the [Institute of Neurosciences Kolkata \(I-NK\)](#) a charitable neurosurgical unit in Calcutta supported by the department in Newcastle.

## 1989

Formation of the School of Neurosciences (later to become the School of Neurology, Neurobiology and Psychiatry) to bring together basic and clinical neuroscientists from anatomy, neurology, psychiatry and the Muscular Dystrophy Research Laboratories.

## 1990

Research in Newcastle indicated that dementia with Lewy Body, previously considered to be rare and unimportant, was contributing to a significant proportion of late-life dementia pathology. In 2015 Ian McKeith (Professor of Old Age Psychiatry) is presented with the Bengt Winblad Lifetime achievement award at the Alzheimer's Association International Conference in Washington, D.C. acknowledging his groundbreaking work which led to the first diagnosis and treatment of Lewy Body dementia (LBD), a condition thought to affect more than 100,000 people in the UK.

## 1990s

**Professor Pam Shaw** (Wellcome Senior Research Fellow 1991; Professor of Neurological Medicine 1997-2000) publishes a series of studies on the molecular basis of motor neurone disease and amyotrophic lateral sclerosis, particularly the role of calcium regulatory proteins and mitochondrial function in the vulnerability to neuronal death.

## 1993

The Academic Department of Psychiatry moves to the newly constructed Leazes Wing of the Royal Victoria Infirmary with an acute in-patient unit and specialist affective disorders and eating disorders units.

## 1994

**Professor Malcolm Young**, pictured, is appointed to the Chair of Psychology (1994-2002; later Pro-Vice Chancellor 2002-2009). Associated academic appointments in psychology form the basis of a major research group studying comparative aspects of vision and neural networks. In 2003 Young's work on analysis of complex networks leads to the spin out company, e-Therapeutics, which seeks pharmacological targets for neurological and other diseases.



The Institute for Health of the Elderly (later renamed the **Institute for Ageing and Health**) is created under the Directorship of Edwardson in order to develop the long standing research on ageing brain and neurodegenerative diseases and other disorders of later life.

## 1995

The first International Workshop of the Consortium on Dementia with Lewy Bodies (DLB) is held in Newcastle (group picture right). The consensus guidelines for the clinical and pathologic diagnosis of DLB published in *Neurology* the following year becomes a highly cited paper.



## 1999

Ferrier and **Professor Jan Scott** show that neuropsychological impairments that occur in bipolar disorder persist even when well. This is followed a series of studies conducted with **Professor Allan Young** (Senior Lecturer and Chair of General Psychiatry 1994-2005) showing the role of adrenal hormones underlying these impairments and the therapeutic value of glucocorticoid antagonists.

## 2000

**Professor Douglas Turkington** (Honorary Clinical Lecturer 1991; Honorary Chair of Psychosocial Psychiatry 2006-present) and colleagues report the outcome of cognitive behavioural interventions for treatment of psychoses. This has become the most widely used cognitive intervention for schizophrenia.

Report in *The Lancet* of the first multicentre, placebo-controlled trial of the cholinesterase inhibitor rivastigmine for the treatment of dementia with Lewy bodies, led by members of the MRC/University Centre Development in Clinical Brain Ageing in collaboration with Novartis.

Malcolm Young leads a successful bid for funding from the Joint Infrastructure Fund to enable construction of the **Henry Wellcome Building for Neuroecology** (opened 2002, pictured) to house facilities for magnetic resonance imaging of brain activity, behavioural studies, psychophysics, and electrophysiology. Associated academic appointments increases research in basic neuroscience. From 2008 the building also accommodates the main administration for the Institute of Neuroscience.



**Professor Colin Ingram (1960-2013)** joined Newcastle from Bristol University in July 2000. His research focused on the hypothalamic-pituitary-adrenal axis and corticosteroid neurobiology. He was also interested in neuroprostheses and neuroinformatics; later heading up the CARMEN e-science platform

## 2004

Creation of the Institute of Neuroscience under the direction of **Professor Colin Ingram** (Chair of Psychobiology) and **Professor Anya Hurlbert** (Chair of Visual Neuroscience) both pictured. This is followed by a period of major expansion with academic appointments extending expertise in visual, auditory and motor neuroscience, research in neural networks, and areas of clinical neuroscience. In 2007 staff from the School of Neurology Neurobiology and Psychiatry and the Division of Psychology came under the management of the Institute creating one of the largest neuroscience groups in the UK.



## 2006

Research published in *Nature Genetics* describes the changes to mitochondrial DNA in the substantia nigra of aged and Parkinson's disease patients, suggesting DNA deletions may be important in neuronal loss.

## 2006-2008

Major investment in neuroimaging capabilities, including the opening of the [Newcastle Magnetic Resonance Centre](#) (2006, pictured) and introduction of small animal magnetic resonance imaging and positron emission tomography (PET) capabilities for man and animals (2008).



## 2008

Opening of the Edwardson Building (pictured) to provide new accommodation for the brain tissue resource and research into age-related neurodegenerative disorders conducted by the Institute for Ageing and Health.



## 2010-2011

The Regional Neurosciences Centre moves to new facilities at the new reconstructed Royal Victoria Infirmary (pictured). This provides state of art facilities for neurology, neurosurgery, and neuroradiology adjacent to the Medical School.



## 2013

An extension to the Henry Wellcome Building, funded by the Wellcome Trust and also donations from the Reece Foundation and the Henry and Krystyna Wiesniewski Foundation for Neuroscience is completed. It is named the 'Centre for Translational Systems Neuroscience' (CTSN), pictured, and officially opened by Lord Walton of Detchant on the 18th September. It houses a suite of purpose built laboratories to help translate findings from our basic science research to inform treatments in the clinic, focussing on disorders of movement, mood and cognition. [Professor Anya Hurlbert](#) takes directorship of the CTSN.



Professor Colin Ingram dies suddenly on 15th December whilst Director of the Institute. Ingram worked hard to put Newcastle on the international map making collaborations with the RIKEN Brain Science Institute in Japan, Monash University in Australia and the Institute of Neurosciences Kolkata. He served as honorary treasurer (2004-2007) and honorary secretary (2007-2011) with the British Neuroscience Association (BNA). He made every effort to attend research talks and seminars whether they were given by esteemed international guests or first year students. A symposium was held in his honour on 24<sup>th</sup> July 2014; the seminar room in the Henry Wellcome Building is dedicated to him.



## 2014

On 1st August, [Professor David J. Burn](#) takes over the directorship of the Institute. He is a clinical neurologist specialising in Parkinson's disease. The Institute of Ageing and Health becomes the over-arching, cross-institute [Newcastle University Institute for Ageing \(NUIA\)](#).



The results of the Research Exercise Framework conducted by HEFCE which compare research departments in UK Universities show that the Institute is ranked 9<sup>th</sup> for Neuroscience. For real world research impact the Institute is ranked 5<sup>th</sup>.

## 2015

The programme of work into mitochondrial disease started by Turnbull in the 1980's culminates in legislation passed in the Houses of Parliament and Lords allowing IVF techniques known as 'mitochondrial donation' thus preventing transmission of the condition to children.