**IMAGE PROBLEM**

A Sussex professor is part of a group that has secured a grant to study the interpretation of magnetic resonance brain images.

Prof Benedict du Boulay (COGS) described the two main objectives of the research: to investigate the nature of diagnosis in this complex domain, and to further develop an existing prototype decision support and training aid, based on previous work which has been funded by an ESRC cognitive engineering grant.

Radiological diagnosis and decision-making is a particularly difficult task. It involves the extraction and interpretation of information from complex medical images and reasoning about competing pathologies that often exhibit similar abnormal features in the images.

A senior staff radiologist sees in the order of 80 to 100 cases per week, or around 100,000 in a working life. The team will focus on helping radiologists to learn to assess the areas of uncertainty and imprecision using visualisation techniques. They will also improve the precision of an ‘image description language’ which is used to describe case images in a database, and then display their distribution in an ‘overview space’ in the decision-support and training tool.

The difficulty of interpreting these images is compounded by the following factors:

- the high level of detail available in magnetic resonance images,
- the sensitivity of the appearance of the image to the initial settings of the scanner,
- the great variability of presentation, even among normal patients,
- the partial understanding, even among experts, of the relationship between the appearance of brain lesions and the nature of the underlying pathology.

Benedict will be working with Prof Mike Sharples and Dr Nathan Jefferies, both ex-COGS and now at the University of Birmingham, Prof Derek Teather and Dr Briony Teather of De Montfort University, and Prof George du Boulay of the Institute of Neurology.

**SCIENCE MEETS ART – one man and his robot**

This week science and art came together at the University when the Australian performance artist Stelarc was in residence at the University’s Centre for Computational Neuroscience and Robotics. This unusual collaboration was the result of a convergence of the interest of the artist and the scientists, in exploring the boundaries between the human body and machines, which resulted from the highly successful European Conference on Artificial Life hosted at Sussex last July.

Since the late 1960s, Stelarc has been producing innovative performance art by blurring the boundaries between his body and machines – for example, by wearing a third robotic hand that is controlled by his own nerve impulses. The Sussex Artificial Life group takes its inspiration from biology to build machines which are in some way life-like, such as robots whose control system are similar to those of ants, or computer chips designed through evolution. The two perspectives came together to explore what the artist and the scientists could learn from one another.

In a lecture at Sussex yesterday, Stelarc tackled how the boundaries of the body can be altered by machines, as in the cyborg, a hybrid of human and machine. Traditionally cyborgs have been associated with science-fiction characters such as Robocop or Terminator, but Stelarc suggests that virtual reality systems and some medical technology could also be valid examples of machinery which augments the body’s senses. He also discussed his use of the Internet as a tool to move people wired to robotic systems by remote control.

Stelarc concludes his week as the University’s artist-in-residence with a performance at the Sallis Benney Theatre tonight. In it he will demonstrate how the third arm works, with an opportunity for volunteers to be wired to the arm to experience how their muscles can operate the machine. The performance starts at 7.30 pm at the Sallis Benney Theatre, Grand Parade, Brighton, tickets £6 (£4) on the door. The visit is supported by the Arts Council, the Sussex Artificial Life group (COGS) and the Brighton Media Centre.
Cold climate sex deficit explained

For at least 70 years, biologists have been trying to explain why cold climates take sex out of reproduction. It is not just a matter of cooled ardour or frozen libido, although this can take its toll. As Byron says, "What men call gallantry and gods adultery, Is much more common where the climate's sultry and we are familiar with Monty Python's lumberjacks. Evolutionists have a deeper problem, 'geographic parthenogenesis'.

In many species of animals and plants, sexual reproduction can be an option rather than a necessity. Some populations may reproduce asexually, without mating, to produce offspring which are genetic copies of the parent. In species which can do both, asexual populations are more common in uncomfortable habitats, for example, in colder regions, up mountains, or at the edges of the species range. European woodlice are an example of this, with mainly asexual populations in the North and more sexy southern populations.

So far, there has been no satisfactory explanation for this geographical variation in reproductive activity. Now, in this week's Nature, Joel Peck and Jonathan Yearsley of BIOLS and David Waxon of CPES have come up with a theory which accounts for the patterns observed in terms of simple ecological and evolutionary processes. Their mathematical models suggest that asexual forms predominate in more hostile habitats because of the disadvantages, to offspring, of mating with migrants which tend to be less well adapted to the harsh local conditions.

In an area like Europe, populations are likely to be larger and to increase more rapidly in the more fertile and productive South. Random movement and population pressure will result in more migration from South to North than in the opposite direction and recently arrived migrants and their offspring will form a greater proportion of the population in the North. This means that, in the North, the gene pools of sexually reproducing populations are more likely to be diluted by genes more suitable for other climes. Northern woodlice risk losing their adaptive edge by mating with migrants. The offspring of asexuals avoid this dilution.

Why don't asexuals take over everywhere? The models reveal that you only get the sort of distributions observed in nature if asexuals are normally at some disadvantage relative to sexually reproducing individuals. Current theories hold that they are more susceptible to parasites or to harmful mutations. In the sultry South, sex must have advantages which outweigh the risks of mating with northerners.

Another Successful Quality Assessment for Sussex

Electrical and Electronic Engineering is the latest subject group to be visited by assessors from the Quality Assurance Agency. The Group achieved the following excellent set of grades:

- Curriculum Design, Content and Organisation: 3
- Student Progress and Achievement: 3
- Learning Resources: 4
- Teaching, Learning and Assessment: 3
- Student Support and Guidance: 4
- Quality Assurance and Enhancement: 4

The assessment team gave its provisional comments at an oral feedback meeting at the end of the visit. The group was commended on the flexibility of its curriculum, the breadth of student choice and the influence of research on the curriculum. Amongst other commendations were the good progression rates and high levels of graduate employment, and both the tutorial support in the School and student/staff relations were described as excellent.

The Subject Group was also undergoing an accreditation visit by the Institute of Electrical Engineers at the same time as the quality assessment. The IEE panel will recommend accreditation of all BEng and MEng programmes for 5 years from 1999, the year in which the current accreditation runs out.
“We don’t tolerate diversity, but celebrate it”

A CAMPUS-WIDE celebration will end this Sunday, as students and staff have taken part in an Anti-Racism Week. Events included discussions on Jewish-ness, gay culture and a poetry wall to promote cultural diversity.

VP Welfare, Jo Souter, said that the week has focused on improving awareness and understanding of cultural differences. She added that it has been an ideal opportunity to re-emphasise the Students’ Union’s commitment to represent students from all backgrounds, a philosophy which was neatly expressed by Black Students’ representative, Haruvort Gurni, who said that “we don’t tolerate diversity, but celebrate it.”

The week is rounded off with an open forum on anti-Semitism and Islamophobia in the Debating Chamber, Falmer House at 2 pm today (Friday) including presentations by Dr Richard Stone (Chair, Jewish Council for Racial Equality) and Imam Dr Abduljalal Sajid (Director, Sussex District Muslim Society). On Sunday, a cultural evening hosted by the Sussex African and Caribbean Students Association promises a combination of poetry, song, dance and drama. This will take place in the Gardner Arts Centre from 6 to 9 pm, and tickets cost £6.50 (5.50, including entry to the after-show reception. Contact 246752 for more details.

Thanks to Phillip Baker, Pia de Souza, Denise Decaires Narain and all the groups and individuals who helped organise the events. For more information on the week, contact Jo on ext 3398.

■ One World Week runs this week (2 - 6 March) to promote ethical and environmental issues. For details of events, contact the Students Union Reception on ext 8555 or 8152

STAFF DEVELOPMENT
Easter vacation on-site courses for non-teaching staff

TIME MANAGEMENT Thursday 19 March (half-day pm)
SUPERVISORY MANAGEMENT Tuesday 24 March AND Tuesday, 31 March (two-day course – all day)
CUSTOMER CARE Friday 27 March (all day)
TEAM BUILDING Thursday, 2 April (all day)
REPORT WRITING Friday, 3 April (half-day am)
STRESS MANAGEMENT Tuesday, 7 April (all day)

Nominations for the above Courses (via Section Heads please) to Alison Lyner, 3868 (mornings) or email: A.M.Lyner@sussex.ac.uk as soon as possible. Courses will only run if sufficient places are booked.

In brief

Research Opportunities

More details of these and other research opportunities are available from Mylene Powell in the Research Grants and Contracts Office, ext 3812 or email: M.Powell@sussex.ac.uk.

For an extensive listing of funding opportunities see REFUND linked to the Research web site: http://www.sussex.ac.uk/Units/research or SUS Home Page, select ‘Teaching & Research’; ‘Research Funding at Sussex’.

ESRC NEW OPPORTUNITIES PROGRAMME ON THE PUBLIC UNDERSTANDING OF SCIENCE: applications invited. The aim is to review existing knowledge of the area, to consider a future research agenda. The Fellowships are intended to provide an opportunity for developing new approaches and to new definitions of the field. Deadline: 24 March.

LLOYDS OF LONDON TERCENTENARY FOUNDATION AWARDS 1998: Postdoctoral research fellowships will be awarded in engineering, medicine and health care, safety or environmental studies, science and technology. PhD scholarships are awarded for business-related education and research. Deadline: 27 March.

LOCKYER ASTRONOMY FELLOWSHIP: The Royal Astronomical Society invites applications for the Lockyer Astronomical research fellowship to be held at a UK university. Deadline: 30 March.


UK/SWEDEN: The British Council and the Association for Swedish Higher Education have set up a joint fund to encourage the development of links between Swedish and British academics. All subject areas covered by the programme. Deadline: 1 April.

DEVELOPMENT ECOLOGY OF MARINE ANIMALS (DEMA): NERC call for proposals to address the following overall objectives: to determine how environmental factors influence the ontogeny of molecular, cellular and physiological processes underlying the growth and differentiation of marine animals; to determine the longer term consequences of early environmental influences on individual organisms and populations; to focus on taxa that are of economic importance in UK coastal and shelf seas. Deadline: 1 April.
What’s on...
Monday 2 March – Sunday 8 March

Lectures, Seminars, Colloquia

- Monday 2 March
  12.30 pm Sussex Continuing Education Research Forum: Veronica McGivney, Reaching the on-participants - a case study. Room D310
  1.00 pm Experimental Psychology Seminar: Pascal Dissard, The linguistic system's sensitivity to non-linguistic information. Biology Lecture Room (EP 3.9)
  2.00 pm Centre in Global Political Economy Seminar: Robert O'Brien, The WTO, IMF, World Bank and social movements. Room A71
  3.00 pm Centre for Mathematical Analysis and its Applications Seminar: Y Lisievich (Bristol University). Dominated semigroups with singular complex potentials. Room Pevensey 2A2
  4.00 pm CULCOM Lecture: Anthony Shelton, Rituals of satisfaction and the redemption of space in the mesoamerican world. CCS Common Room
  4.30 pm Neuroscience Seminar: David Warburton (University of Reading). Neurochemistry of memory. Biology Lecture Room (EP 3.9)
  5.00 pm Sociology and Social Psychology Seminar: Jenny Shaw, Family, time. Room D310

- Tuesday 3 March
  2.15 pm Sussex European Institute Research in Progress Seminar: Neven Andjelic, Politics and society in Bosnia-Herzegovina during the end of Yugoslavia. Room A71
  4.15 pm Biochemistry, Genetics and Development Seminar: James Castelli-Gair (University of Cambridge). A paradigm for body-builders: how Hox genes control body shape in Drosophilia. Biology Lecture Theatre
  5.00 pm American Studies Seminar: John Gibbs (Reading University). Hollywood cinema, Movie magazine and mise-en-scene criticism. Room D730
  5.00 pm Social Anthropology Seminar: Sophie Day (Brunel University). "English individualism" achieved through prostitution in London. Room D722
  5.00 pm New Metaphysical Art Seminar: Roger Poole, Theology after Christianity. Room EDB 302
  5.00 pm International Relations and Politics Seminar: Lucy Ford, The globalisation of environmental management. Room D640
  5.15 pm German Research Colloquium: Anne Fuchs (University College Dublin). Ritual, abjection and identity in Joseph Roth's 'Wir'. some unworthy deliberations. Room A155

- Wednesday 4 March
  11.30 am Plant Science Seminar: Marc Knight (Oxford University). Lighting up calcium signalling in plants responding to abiotic stress. Room Pevensey 2A2
  1.30 pm Sussex Centre for Optical and Atomic Physics Seminar: Trevor Hall (Kings College London). Phase conjugation and photorefractive nonlinear optics. Room Pevensey 2A2
  2.00 pm Queuey Seminar: Clare Whitting (University of Manchester). Femme to femme: a love story. Room D610
  4.00 pm Centre for Southern African Studies Seminar: Catherine Campbell (LSE). Selling sex in the time of AIDS: gender, HIV and commercial sex work in Southern Africa. Room C337
  4.00 pm Centre for Mathematical Analysis and its Applications Colloquium: D Higham (Strathclyde University). Gradient systems, timestepping and optimisation. Room Pevensey 1A1

Lectures, Seminars, Colloquia

- 4.30 pm Centre for Legal Studies Seminar: Geraldine van Buren (Queen Mary and Westfield). Children's rights: comparative perspectives. Room D610
- 5.00 pm English Graduate Colloquium: Tyrus Miller (Yale University). Modernist allegory as an art of being ruined: Wyndham Lewis, Carl Schmitt and the liquidation of cultural autonomy. Room D640
- 6.00 pm University Chaplaincy Lecture: Tim Lawson-Crutenden, Harassment - infringement of the interpersonal. Meeting House, Pevensey 3B.

- Thursday 5 March
  11.30 am Economics Seminar: Brian Nolan (ESRD). Earnings, inequality and returns to education in Ireland. Room D310
  4.00 pm Geography Research Seminar: Derek Mottershead (Manchester Metropolitan University). Spatial variations in the intensity of rock weathering. Room D610
  4.00 pm Experimental Psychology Colloquium: Nick Chater (Warwick University). Explaining Weber's, Stevens' and Fits' laws. Biology Lecture Room (EP 3.9)
  5.00 pm Sussex Development Lecture: Adrian Wood, Skills and trade. Room A1
  5.00 pm History Work in Progress Seminar: Jennifer Morawiecki, The peculiar mission of Christian womanhood: English women missionaries to India, 1890-1920. Room A155
  5.00 pm Centre for Modern French Thought Seminar: Jonathan Dronsfield (Warwick University). The limits of responsibility in Heidegger. Room A71
  5.00 pm Centre for Statistics and Stochastic Modelling Seminar: Jon Denne (De Montfort University). A group sequential t-test meeting a natural power condition. Room Pevensey 2A2.

- Friday 6 March
  2.00 pm SPRU Seminar: John Boyd (Churchill College, Cambridge). Science in Japan. Room EDB 121
  4.00 pm Astronomy Centre Seminar: Pranesh Saha (Oxford University). Can leased QSOs really tell us H O? Room Arundel 401
  4.00 pm Chemical Physics Seminar: Ruth Wilson, Title t.b.a. Room Chichester 3R241
  4.30 pm Philosophy Society Seminar: Andrew Chitty, Subject, object and private property. Room A155

Miscellaneous

- Lunchtime recital in the Meeting House - 3 March, Charles Macdonald (organ) 1.20 pm in the chapel
- Chorus and Philharmonica concert - PouLENc: Gloria - BILUAs: symphony no. 2 and Ravel: Bolero, 5 March, Lewes Town Hall, 8 pm. Tickets £5 (E5).
- Sixteenth Bible and Literature Seminar - 4 March, Law and grace: readings in Leviticus and Romans, 10 am to 5 pm in the Meeting House. Contact Barbara Barber on ext 8217 for details.
- Sussex Beacon Jubilee Sale - scheduled for 2 March, unfortunately postponed due to illness. A revised date will be posted in the Bulletin shortly.
- Easter A-level courses at the Language Centre - Spanish, German and French speaking and listening skills. Three-day courses available from 6 to 8 April, E05. Contact Michael on ext 9900.
- One-week intensive TELF course at the Language Centre, 16 - 20 March, £120. For details contact Linda Gunn on ext 2175, or Reception on ext 8006.
- ‘Curry Experience’ in the Laines restaurant (Refector- building level 2, 3 March 12 to 2.15 pm. Come and give your taste buds a treat. With a prize to be won!
- Students planning to move into rented accommodation - the Students Union and University Housing Office are running workshops providing valuable information about the renting process. Last three workshops on: 3 March 6 pm, Lanss House Common Room; 4 March 1 pm, Room 126 Falmer House; 5 March 6 pm, Holland House, all welcome.
- ROKPA lucky-dip lunch - 5 March in the Meeting House from 12.30 to 2 pm, raising poverty awareness as part of One World Week.

Small Ads

FOR SALE: first-floor spacious flat in central Hove, GF/CH, newly carpeted, close to amenities, 112 years on lease, £64,000. Contact Ross on ext 8238, e-mail: R.L.Dowsett@sussex.ac.uk

FOR SALE: Hoover ‘Junior’ cleaner, under a year old, hardly used, £55 o.n.o. Contact ext 7280

ACCOMMODATION WANTED: are you away for up to four months and require someone to stay in your room? Swiss exchange student needs nice place to stay - responsible and not messy, contact Marco on 381164, e-mail: hoal5@cfUDENT.sussex.ac.uk

TO LET: holiday chalet in Croyde Bay, N Devon adjacent to beach, sleeps 4/5, from £95/week. Contact 01271 890907 or e-mail: ambh@bsdos.sussex.ac.uk

PIANIST REQUIRED: to practise once or twice a week over three/four weeks to prepare for a violin exam, wage negotiable. Contact Jason on ext 601346 or e-mail: Bluay6@central.sussex.ac.uk

PRIVATE TUITION REQUIRED: for A-level chemistry, res/experience preferred, contact Andy on ext 8077 or e-mail: A.K.Hide@sussex.ac.uk

REFLEXOLOGY: £17.50 per session, contact Ella on 700452 for more details

FOR SALE: StyleWriter 1, black, complete with disks and manual, compatible with Classics, SEs and LCs, £55 o.n.o. Contact Alec Gilmore on 01903 767661

FOR SALE: Grundig 21" colour TV, remote control, teletext, ten months old, still under guarantee, £160. Contact 773161 (eves/weekends only)

FOR SALE: Radius 20" black and white Macintosh two page monitor, £75 o.n.o. Contact ext 3495 or 3386

FOR SALE: Toshiba microwave, £40; Electrolux fridge-freezer, £65; Hoover washing machine, £65; Alba stereo, £8; sofa, £10. Contact 327918

Bulletin

The Bulletin appears every Friday of term, with copy deadline the preceding Friday lunchtime. We welcome any suggestions for news, events, letters and small ads. Please contact the Information Office, Sussex House on ext. 8209 or e-mail: bulletin@sussex.ac.uk