Dr James (Jim) A. Bednar

Jim Bednar has held a tenured position in the School of Informatics, University of Edinburgh since 2004, following undergraduate, PhD and postdoctoral studies at the University of Texas at Austin. His research focus is on unravelling the information-processing capabilities of the mammalian system through applying computational modelling techniques in collaboration with experimentalists. He argues that the apparently diverse and complex properties of the visual cortex are explicable in terms of relatively simple rules governing neural connectivity and synaptic modification. The modelling work that he has carried out has earned for him an international reputation.

He came to Edinburgh with his model of visual processing developed and instantiated in the open-source simulator, Topographica, widely used in the international community. During his time in Edinburgh he has worked with undergraduate, Masters and PhD students to develop his ideas to demonstrate that the properties of his model are compatible with the primary functional features of V1, the main processing area of visual cortex. Jim has an ability to inspire students to take up challenges within the overall framework that he has developed. It is noteworthy that since coming to Edinburgh he has graduated seven PhD students with three more on the way. This is an impressive number for someone in his first faculty job and it shows his qualities as a research director. Most of his graduating PhD students have gone on to post-doctoral positions at prestigious institutions, many joining experimental teams. His publication record is very good, with significant recent publications arising out of his work with PhD students.

Jim has an ability to teach not only in core courses in computer science and electrical engineering but also, at both undergraduate and graduate level, in more specialised areas relating to his own research area of interest. He has an excellent track record in teaching, being nominated twice by the Edinburgh Students Association for an award. He is renowned for his ability to advise students.

Dr Bednar's principal administrative task has been in connection with the Edinburgh Doctoral Training Centre in Neuroinformatics and Computational Neuroscience, a unique and relatively large program which is dedicated to training PhD students with backgrounds in the physical/computing/mathematical/engineering sciences who wish to apply their knowledge to neuroscience. As Deputy Director, Jim was involved in the development in the program and he played a leading role in the successful first renewal of the Centre in 2007. He was appointed Director in 2010 and he spearheaded the midterm review in 2011. This succeeded in the face of the very difficult financial circumstances that the UK funding councils now encounter. The Edinburgh centre was one of the pioneers of this type of training scheme which is now adopted widely by the UK Engineering and Physical Sciences Research Council.

As director of a program with 50 PhD students, all with different topics and supervisors, there are always difficult management decisions to face and the way that Dr Bednar makes these decisions displays great ability and sensitivity. He has been commended for his strengths in administration not only by the faculty but also by the senior administrators with whom he works.

In summary, Dr Bednar has first class qualifications in research, teaching and administration to merit a promoted academic post. Were he to take a position elsewhere, it goes without saying that he would be a loss to the Edinburgh community.