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Monday August 29, 2005

## GOVERNMENT/NONPROFIT

### Case to launch undergrad major in study of human mind

By

6:01 am, August 29, 2005

Type in the search phrase 'cognitive science' on the employment web site Monster.com, and discover opportunities with NATO, eBay Inc., Xerox Corp. and Lockheed Martin Corp.

Candidates who've studied cognitive science shouldn't be difficult to find, but if you're in the market for one, have patience locating a qualified, cognitive science graduate.

Cognitive science, the science of the human mind, is a young discipline, with academic origins dating back to the '50s. Formal course offerings began cropping up in the late '70s. Although there are cognitive science centers and institutes, only a handful of universities, less than 10 in the United States, offer standalone degree programs.

That number grew by one last year when Case Western Reserve University founded its department. Plans are to admit students to the undergraduate major in the fall semester 2006, said Mark Turner, Ph.D., dean of the college of arts and sciences.

In short, cognitive science studies how the mind works and how it could work better.

'It means: `What is the mind? What are the components of the mind? How do the components work together and how can



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you get it to work better?' That's the application,' said neurology professor Dr. Peter Whitehouse, of the Case Western Reserve University School of Medicine and director of integrative studies. Dr. Whitehouse has a

secondary faculty appointment with Case's cognitive science department.



## Laying the groundwork

Dr. Turner on July 1 stepped down as interim chair of Case's cognitive science department, and welcomed Merlin Donald, Ph.D., as founding chair. Dr. Donald, 65, since 1972 was a professor with the psychology department at Queen's University in Ontario.

He brings more than four decades of administrative, research and publishing accomplishment in cognitive science, cognitive neuroscience and neuropsychology, plus the classics, philosophy and literature.

'Merlin Donald will bring some more immediate visibility to the program.' said Arthur Markman, Ph.D., past executive officer of the Cognitive Science Society, a 1,200-member, international organization. 'Making a high profile hire gives the university a real opportunity to make a splash within the cognitive science community.'

Case's department, like other cognitive science counterparts, is interdisciplinary and will draw from the mind and brain sciences such as neurology, neurobiology and clinical psychology, to name a few, and across departments and schools such as anthropology, art history, law and nursing. University Circle institutions including museums and hospitals also will participate.

'Eighty-five percent of what it means to have a world class influence on cognitive science is already in place (at Case),' said Dr. Turner, who is a cognitive scientist. 'If you add to it some visibility, programming, more organization, this can leverage what's there. You want to make a routine place where the neurobiologists can talk to the people in psychology who work in memory and can talk to the people who work on visual representation in art.'

## Brain science at work

The Monster.com search identified cognitive science requirements among the following positions: user interface designer, work practice specialist, user experience researcher and information architect. However, many graduates and students of cognitive science are moving from employment dedicated to computer interaction toward that involving consumer behavior, market research and marketing, said Dr. Markman, who is a psychology professor at the University of Texas at Austin.

Not surprising for both endeavors, considering that cognitive science can impact how we routinely use the Internet, first by understanding the interaction between a web site's visual information and the user's cognition and ability to coordinate that information and structure. They learn why some sites are easily and frequently accessed and others quickly abandoned in confusion.

The practical applications continue with whether car drivers prefer a needle or digital readout speedometer. Cognitive science's answer: Human beings are better at tracking an object's gradual or continuous movement. The needle has

it. The same applies to an airplane cockpit's instrumentation layout, which is designed, in part, to recognize the navigators' cognitive processing mechanisms.

'Despite the fact that these things seem intuitively obvious, what is it that makes it possible for human beings to do them?' Dr. Turner said. 'If we know more about how it is done we can arrange things better. We can build better systems.'

Case's program will emphasize higher order cognitive patterns and mechanisms concerned with creativity and invention.

Studies can examine why an artist's canvas evokes complicated responses, or why humans identify the same color blue despite changing light conditions. Or, propose that the human mind is a 'hybrid' product of biology and culture,' and learn about this evolution to provide 'the key to understanding the human intellect,' which Dr. Donald wrote about in the 2001 book 'A Mind So Rare: The Evolution of Human Consciousness.'

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