Research in the language sciences has been transformed in recent years by new technologies in neuroscience, advances in computational methods, and by the advent of digital communication. These developments bring new and complex challenges, which need to be addressed by multi-disciplinary teams. The University of Cambridge is at the forefront of research in language sciences, and combines centres of excellence in linguistics, language education and assessment, psychology, neuroscience, and speech and language technologies. Our multi-disciplinary research community includes over 150 Principal Investigators, many considered world experts in their field.

As one of the University’s Strategic Research Initiatives, our mission is to promote dialogue between language scientists of all disciplines, to develop partnerships for shared teaching and research, to foster an interdisciplinary approach to research in our doctoral and early-careers researchers, and to build on our research base to enable us to tackle the major research challenges.

Graduate students

The Language Sciences Interdisciplinary Programme for MPhil students is a framework offering shared teaching and supervision of research between departments. The first phase of the programme will be available from 2014-15.

The PhD Clinic is a collaborative platform for students in the language, cognitive and social sciences offering practical workshops and peer-to-peer support in dealing with research problems. Cambridge DOCking Station runs workshops to encourage doctoral students to develop their ideas for interdisciplinary projects.
## Cross-cutting research challenges and themes

### Human Language Technologies

**Can machines acquire the same linguistic competence as humans?**

In spite of recent technological developments, no natural language processing system can fully replicate human communication. This is a research challenge requiring the collaboration of engineers, linguists, computer scientists and psychologists. The Human Language Technologies theme concerns the development of computational models both for theoretical understanding of speech and language and for the development of real applications.

### Language Communication and Comprehension

**Why did language evolve? What is happening in the brain when we produce and process language? How is language used in human interaction? What is meaning?**

This is a time of significant progress in our understanding of human language and communication, thanks to the technological advances in brain-imaging, and in computational methods. Evidence from behavioural studies, and from increasingly sophisticated brain-imaging techniques is increasing researchers’ understanding of the neural processes which support spoken and written language, enabling them to track the activity of the brain during language comprehension and production with millimetre and millisecond precision. Research in Language Communication and Comprehension, carried out by researchers in neuroscience, psychology, linguistics, and evolutionary anthropology has already provided unique insights into the anatomical and functional organisation of the brain systems for language comprehension.

### Language Change and Diversity

**Is there a Universal Grammar? How diverse are the world’s languages? Can we preserve some of the 50% of languages under threat of extinction?**

The diversity of languages and dialects spoken around the world is clear. Since diversity arises from change, the study of language diversity and language change have always gone together. This cross-cutting theme involves collaboration between linguists, cognitive scientists, psychologists, anthropologists and computer scientists, and includes historical and comparative linguistics, philology, the study of cross-linguistic patterns, and the documentation of endangered languages and cultures.

### Language Learning across the Lifespan

**How do children acquire their mother tongue, and how does this differ from learning another language? What are the cognitive benefits of bilingualism and multilingualism?**

The question of how we acquire languages is one of vital importance, particularly in an age when so many of us are required to learn at least one or two languages in addition to our mother tongue. Research on language acquisition involves many different methodological approaches and many disciplines, including linguistics, psychology, sociology, neuroscience, education, computer science and engineering.

### Cambridge English

**How do we set and maintain standards for proficiency in the English language? How should we measure progress in language learning?**

The number of speakers of English as an Additional Language now exceeds the number of native English-speakers worldwide. Cambridge English Language Assessment and Cambridge University Press both play a key role in representing the University of Cambridge around the world and in promoting its educational values in relation to English Language Teaching and English Language Assessment. Both conduct research in partnership with other researchers across the University, including the Department for Theoretical and Applied Linguistics, the Faculty of Education, the Computer Laboratory and the Department of Engineering, some of this through the recently-established ALTA Institute (Automated Language Teaching and Assessment).

You can find more information about Cambridge Language Sciences at [www.languagesciences.cam.ac.uk](http://www.languagesciences.cam.ac.uk)