Partnerships across the Intelligence Community (IC), from the classroom to the front lines, guided our mission-responsive research portfolio in 2009. CASL’s bearing on operations has been deeply enriched by an infusion of seasoned senior language leaders. CASL’s collaborations with IC thought leaders, managers, and analysts mean even more research is making an impact on the operational environment.
Elena Bashir, CASL adjunct and senior lecturer at the University of Chicago, works in an impressive array of South Asian languages. Bashir currently teaches Urdu and has also taught Hindi and Panjabi. Her main research is in the languages of northwestern Pakistan, with her dissertation on the endangered Kalasha and major ongoing work on Khowar. She has also published on Wakhi, Burushaski, Pashto, Balochi, Balti, and Brahui.

In March 2009, President Obama announced a wide-ranging strategy for Afghanistan and Pakistan, known as AFPAK. Its goal is to “disrupt, dismantle, and prevent al-Qaeda from being able to operate in its safe havens—not only al-Qaeda, but all forms of terrorism…” CASL is aiding this effort by supporting the development of language tools (e.g., dictionaries, grammars, parsers) in the Pashto, Bengali, and Urdu languages.

In addition to AFPAK languages, CASL has invested its own resources in the languages and cultural complexities of Africa. The African continent is made up of over 2,000 distinct languages, most of which have not been comprehensively documented or described. Africa continues to be a hot spot due to democratic instability, ethnic conflict, food shortages, and an AIDS pandemic. CASL developed an interactive, map-based, proof-of-concept tool for recognizing African languages and dialects called the African Language Identification and Familiarization Aid (ALIFA).

ALIFA includes linguistic information for major and critical African languages and provides links to other language-relevant sites.

The U.S. Government has an increasing need for scientifically validated measurements for quality control, particularly in domains that measure processes dependent upon human behavior like analysis. CASL’s Summary Translation Evaluation Tool (STET) and Language Product Evaluation Tool (LPET) establish much-needed standards for summaries and other language products. STET provides quality control through six dimensions that cover the important elements of a summary’s content, structure, and style. STET can be incorporated into operational quality control to establish standards and provide detailed feedback. It can also be incorporated into training to introduce elements of a good summary. LPET, which was developed from STET, enables consistent, comprehensive feedback for skill growth and streamlines the reporting process.

LPET is currently being piloted and may serve as the basis for quality control guidelines for multiple agencies.

Since the demand for competent language professionals in less commonly taught languages (LCTLs) will always exceed the supply, CASL is investigating linguistic correlates and barriers to proficiency to improve the
teaching, learning, and testing of LCTLs at the higher levels. Linguistic correlates are language features—sounds, vocabulary, collocations, syntactical markers, and grammar—that correspond to Interagency Language Roundtable (ILR) levels 2, 2+, and 3. The research indicates which features are mastered at a specific ILR level, and which features still pose problems for learners at the lower levels. CASL has developed a model (in Russian) for detailed, empirically based checklists of linguistic features, aligned to ILR level 3, which is the minimum language standard for operational work. These checklists will underpin and shape language learning curricula and testing across the community.

**Enhancing Cognitive Performance**

The interworking of the human brain is becoming less of a mystery. We are learning more about how its functions can be trained and controlled to improve performance. CASL is pursuing several types of brain training. Divergent thinking is the cognitive ability to think of as many useful solutions as possible to open-ended problems. CASL is investigating the link between divergent thinking and the brain’s alpha waves, located in the brain’s right hemisphere and associated with creative problem solving. Researchers believe that methods for enhancing these waves—such as EEG neurofeedback—may promote divergent thinking, which will in turn improve analytic performance when interpreting texts and other source materials. In addition, CASL is examining *working memory*, the analyst’s mental workspace that holds and manipulates information for ongoing use. CASL is developing a training regimen to enhance analysts’ working memory and thereby help them process language faster, make fewer errors, and improve their analyses; this training regimen holds the promise of increasing productivity across the IC.

**On the Horizon**

CASL is testing an *analyst’s toolkit* with scenario-based exercises and assessments to assist analysts on the job. Analysts will practice their cultural analytic skills and knowledge in the following areas: identity, personality, values, beliefs, intercultural competence, self-awareness, motivations and intent, language proficiency, social engagements, relationship development, lifestyle, behavior, and attitudes. By honing cultural analytic skills and knowledge through this toolkit, analysts will boost their capacity to interpret intelligence more accurately and consistently.

In May 2009, President Obama announced a new comprehensive approach to securing America’s cyber infrastructure with an objective to “continue to invest in the cutting-edge research and development necessary for the innovation and discovery we need to meet the digital challenges of our time.” The new variant of colloquial language exhibited in text messaging, blogging, and other *cyber communications* represents a new frontier for language research.

The old method of interpreting foreign messages using traditional grammars and dictionaries is insufficient since much of the lexicon, grammar, and syntax has changed considerably over time. CASL is now initiating a “State of the Ops” examination of how analysts are dealing with these rapidly shifting and expanding cyber communications across languages and organizations. CASL hopes to lead the way in this new area of language research.

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**CASL’s African Language Expertise**

*How deep is CASL’s African language bench?*

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<tr>
<th>African</th>
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Our **VISION**

*To support all language and culture matters that impact our country’s security and defense as the premier human factors research partner to the Intelligence Community.*

While providing solutions for day-to-day problems, CASL sets its compass toward the advances that will radically change the way that the IC and DoD carry out critical missions. In the next decade, exceptional language research has the power to create an IC standard for evaluating all language and analytic products, eliminate the linguistic and cultural barriers for understanding and producing cyber communications, influence policy to cut the training time for language acquisition in half, and significantly reduce processing time by transforming the foreign language and analytic processes.

Our **STRATEGY**

- Conduct empirical research to meet the language and culture-related needs of the IC by combining agility to solve near-term problems with longer-term sustained focus on strategic areas
- Capitalize on the extraordinary talents of a permanent staff of nationally recognized, multidisciplinary research scientists and former and current IC practitioners, supported by a stronghold of language experts from academe, government, and industry in the United States and around the world
- Collaborate with IC thought leaders, managers, and analysts to successfully transition the results of rigorous research into operational environments and to assess the impact

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**CASL AT A GLANCE**

- **141** full- and part-time staff
- **112** cleared
- **74** research scientists and assistants
- **68** affiliates and adjuncts
- **from 30** institutions

Degrees held by CASL research scientists and assistants

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The **University of Maryland Center for Advanced Study of Language** (CASL) conducts unprecedented, academically rigorous research in language and cognition that supports national security. Our research is interdisciplinary and collaborative, bringing together people from the government, academia, and the private sector. Our research is both strategic and tactical, so that it not only advances areas of knowledge, but also directly serves the critical needs of the nation.