Aggregative Contingent Estimation (ACE)
Improving Forecasting through the Wisdom of Crowds
Program Manager: Dr. Steven Rieber; E-mail: steven.riebert@arpa.gov

**Goal**
Generate accurate and timely probabilistic forecasts for geopolitical events by aggregating the judgments of many widely-dispersed analysts.

**Country X nuclear test by 1/1/15?**

- Conditional probabilities assigned to an event in each period
- Number of analysts providing judgments in each period
- Real-world timeline (months)

**Sample Forecasting Problems**
- Will North Korea launch a new multistage missile before May 10, 2014?
- Will Russian armed forces enter Kharkiv, Ukraine, by May 10, 2014?
- Will there be a significant attack on Israeli territory before May 10, 2014?
- Will Robert Mugabe cease to be President of Zimbabwe by September 30, 2011?
- Will Greece remain a member of the EU through June 1, 2012?

**Potential Impact**
Improve intelligence estimates to support decision-makers, identify the most accurate analysts, measure the effects of analytic training and tradecraft, and provide a snapshot of analytic judgments.

**Notable media attention:**
- NPR – “So You Think You’re Smarter Than a CIA Agent,” by Alix Spiegel
- The Economist – “Who’s Good at Forecasts?”
- The New Yorker – “When Less Confidence Leads to Better Results”
- The Washington Post – “Good Judgment in Forecasting International Affairs (and an Invitation for Season 3),” by Michael Horowitz

**Notable journal articles:**
- Proceedings of the National Academy of Science of the USA – “Judging Political Judgment,” by Philip Tetlock and Barbara Mellers, 8/12/2014

goodjudgmentproject.com

**Approach**
Elicit, weight, and combine independent forecasts from over 15,000 research participants, using information about the participants and their patterns of judgment. The top ACE team (Team Good Judgment) has applied its methods to over 400 forecasting problems.

Program schedule: June 2011 – June 2015

**Country X n-test by 1/1/15, given embargo**

**Evaluation**
Continuously evaluate methods for accuracy on real-world events. To date, over one million judgments have been scored. Results are compared to the best known approaches, including surveys and prediction markets.

ACE has achieved a 50+% reduction in error compared to the current state-of-the-art.

**Research Teams**