

National Earthquake Prediction Evaluation Council

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What is NEPEC?

From its current (2010) Charter, the Scope and Purpose of the National Earthquake Prediction Evaluation Council is as follows:

“The Council will provide advice and recommendations to the Director of the U. S. Geological Survey (USGS) on earthquake predictions and related scientific research, in support of the Director’s delegated responsibility under the Stafford Act (P.L. 93-288) to issue timely warnings of potential geological disasters.”

So NEPEC itself does not issue public statements, instead advising the Director of the USGS who takes action as she/he feels is warranted

Operational earthquake forecasting, that would be done by the USGS, does not fit into this model and NEPEC needs to work with the USGS to help establish protocols for moving toward operational earthquake forecasting

NEPEC and its Membership

- Members shall be experts in the scientific disciplines that bear on earthquake prediction or other relevant disciplines
- It meets at least once per year and may need to meet on short notice in case of an urgent situation related to an earthquake prediction or other earthquake emergency
- Members serve without compensation for 3-year terms
- Members and Chair are appointed by the USGS Director
- There shall be 8 to 12 members
- Less than half of the members may be Federal employees and the Chair may not be a Federal employee
- NEPEC is subject to open meeting requirements
- NEPEC may set up workgroups as it deems necessary for compiling information or conducting research

Current NEPEC Membership

- Terry Tullis, Brown University (Chair)
- Bill Leith, USGS, Reston (Co-chair, ex officio, acting)
- Ramon Arrowsmith, Arizona State University
- Nicholas Beeler, USGS, Menlo Park
- William Ellsworth, USGS, Menlo Park
- David Jackson, UCLA
- Evelyn Roeloffs, USGS, Vancouver, WA
- Bruce Shaw, Columbia University
- John Vidale, University of Washington

- Michael Blanpied, USGS, Reston (Executive Secretary)

Recent NEPEC Actions of Interest

- NEPEC reviewed and endorsed the activities of the Collaboratory for the Study of Earthquake Predictability (CSEP)
- NEPEC reviewed the work of the Working Group for California Earthquake Probabilities (WGCEP) in their creation of the Uniform California Earthquake Rupture Forecast, version 2 (UCERF2)
- NEPEC convened an Independent Expert Panel on New Madrid Seismic Zone Earthquake Hazard to conduct a study and issue a report, on the occasion of the bicentennial of the large earthquakes of 1811-1812

Upcoming NEPEC Activities

- Consider what if anything needs to be done to set up procedures for responding to potential earthquake forecasts of a major subduction-zone earthquake in the Pacific NW
- Create a suite of prepared statements that could be released by the Director of the USGS, upon NEPEC's advice, in response to a variety of events that might increase the probability gain for significant earthquakes
- Consider, in consultation with USGS staff, what protocols might be established for implementing operational earthquake forecasting

Miscellaneous Unofficial Comments

- It is important for society that we do as much as possible to learn how to forecast earthquakes
- Claims made by many workers in this field in the past tend to not withstand the test of time, so a healthy skepticism is warranted
- However, it is important to pursue and test various proposed methods, doing so in a careful and statistically valid way
- It is counterproductive to make predictions of earthquakes or claim to be able to do so outside of accepted scientific peer-reviewed publications – although the news-media may be interested in such claims, unless they are reviewed carefully they can unduly alarm the public, lead society to believe we have greater capability than we have, and ultimately give the researchers who do this and the field a bad name, making the funding of valid research efforts more difficult for them and others
- Although knowing the physical basis for a proposed earthquake forecasting method is desirable, the ultimate test will be in whether it is effective – both physical bases without effectiveness and effectiveness without a known physical basis could occur
- We would welcome bringing a variety of space-based and electromagnetic and thermal proposed methods into a framework like CSEP for testing their reliability and skill