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Seismological Observatory

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Dear Committee Member,

My field of research is seismology. In particular, I am interested in earthquake activity in plate interiors. I have studied the seismicity of the Appalachian region for many years. The area surrounding the Kimballton site has been monitored since 1977 by the Virginia Tech Seismic Network, currently part of the Advanced National Seismic System supported by the U.S. Geological Survey (I am Director of the Virginia Tech component of this program). On the basis of a long history of seismographic monitoring in the site area, I believe that Kimballton offers a unique opportunity for an investigation of the role of transient stress perturbations and fluids on the physical process of seismogenesis in intra-plate regions.

In addition to contributing to a better understanding of natural seismicity in intra-plate North America, the Kimballton site offers an ideal location for study of mining-induced seismicity and seismic wave propagation in the mining environment. On the basis of several years of collaboration with colleagues at the NIOSH research center in Pittsburg, PA, I believe that controlled, underground seismic monitoring experiments at Kimballton can lead to significant advances in this area of seismological research, as it pertains to mining operations in the economically important Appalachian sedimentary basin.

My background and research experience will allow the Kimballton research team to interact effectively with the community of seismologists studying intra-plate North American seismicity as well as the community of engineering seismologists who specialize in the operation of underground seismic arrays for research focused on mining-associated seismicity.

Sincerely,

Martin Chapman
Research Assistant Professor