With the advent of modern computational aerodynamic and aeroacoustic tools, methodologies for high-fidelity prediction of fan tone noise have become fairly well established. In contrast, high-fidelity prediction of fan broadband noise has remained a significant challenge. Most existing methods are analytic in nature and rely on simplified descriptions of the flow, turbulence, and the blade row geometry to predict sound power level spectra. In these approaches, the incident flow turbulence is usually described using isotropic turbulence models such as Liepmann or von Karman with the intensity and length scale parameters in these models obtained from CFD. Numerical methods, such as Large Eddy Simulation, do offer a means for direct prediction of the fan turbulence and resulting broadband noise, but demand substantial computational resources for the complex fan stage geometry and flow.

To identify the shortcomings of existing analytic and simulation approaches, and chart the course of the future research in this important area, the Fan Broadband Noise Prediction Panel Session will serve as a forum for assessing the current state of the art, using a portfolio of benchmark problems for which information on the mean flow, turbulence characteristics, and the sound field exists. The portfolio includes two fundamental test cases

- FC1: Interaction of turbulence with an isolated airfoil in an open jet wind tunnel
- FC2: Interaction of turbulence with an annular cascade of vanes

and one test case from a representative fan rig

- RC1: Interaction of rotor wake turbulence with an outlet guide vane

The panel session is planned for Friday, June 20, 2014, at the 20th AIAA/CEAS Aeroacoustics Conference, during the AIAA Aviation and Aeronautics Forum and Exposition (AVIATION 2014), in Atlanta, USA. The information about the panel session, which will be regularly updated, is available at [http://www.aiaa.org/aeroacoustics/FBNWorkshop](http://www.aiaa.org/aeroacoustics/FBNWorkshop). Those who are interested in participating in the session should register their interest at this website by submitting their contact information. The descriptions of the benchmark problems are posted to the website. While solution submission for any problem is welcome, the participants are encouraged to tackle more than one problem, especially the fan rig problem. Individuals who may be interested in attending the session, but are not prepared to submit solutions are also welcome.

Inquiries should be addressed to

- John Coupland at the Institute of Sound and Vibration Research, University of Southampton, Southampton, UK (J.Coupland@soton.ac.uk)
- Ed Envia at NASA Glenn Research Center, Cleveland, USA (Edmane.Envia-1@nasa.gov)