**PROJECT MANAGER QUALIFICATIONS**

The proposed research will be led by Filippo Coletti, McKnight Land-Grant Assistant Professor of Aerospace Engineering and Mechanics at the University of Minnesota. Coletti obtained his bachelor’s and master’s degrees in Mechanical Engineering at the University of Perugia (Italy) in 2005, and a research master in Fluid Dynamics at the von Karman Institute (Belgium) in 2006. He performed his doctoral studies at the von Karman Institute and at the University of Stuttgart (Germany), where he obtained his Ph.D. in Aerospace Engineering in 2010. From 2011 to 2013 he was postdoctoral fellow at Stanford University, before joining the U of M in 2014. Shortly after he became a member of the St. Anthony Falls Laboratory (SAFL), where he conducts research in environmental fluid mechanics, focusing on the transport of solid particles in the environment. Coletti uses advanced imaging techniques both in the laboratory and in the field, where he is part of a team that investigates settling speed of hydrometeors. He also conducts research in health-related processes such as transport of contaminants in the human respiratory system, and he is a member of the graduate faculty in the Biomedical Engineering Department at the University of Minnesota. His research is funded by federal agencies including the National Science Foundation (NSF) and the National Institute of Health (NIH), the US Department of Defense, as well as by major companies including 3M, Boston Scientific, and Medtronic. Coletti has published 90 refereed journal articles and conference papers on transport phenomena and experimental fluid mechanics. A list of his recent honors includes the McKnight Land-Grant Professorship from the University of Minnesota (2018-2020), the CAREER Award from the National Science Foundation (2015-2019), the Non-Tenured Faculty Award from The 3M Company (2015-2018), and the Best Paper Award from the ASME Wind Energy Committee (2014).

**ORGANIZATION DESCRIPTION**

The proposed research will be conducted at the St. Anthony Falls Laboratory (SAFL), University of Minnesota. The laboratory is particularly experienced in conducting and analyzing laboratory and field measurements in environmental fluid dynamics. Permanent research staff at SAFL has vast expertise in laboratory and field measurements involving imaging, similar to what proposed in this project. Unique facilities are available for experimental research, including the large wind tunnel and turbulence chamber that will be used for this project. Large projects funded by the US National Science Foundation, Department of Energy and Department of Defense are conducted based on these unique experimental facilities. Automated data collection, sampling protocols, wireless data transfer and display over the Internet have been developed for several state and federal funding agencies at the laboratory. SAFL has also top-notch computing capabilities that allow for high performance parallel processing linked by high speed connections.