G-POD 2017 Announcement, Center for Global Inquiry + Innovation

Prof. Brian Owensby, Director | Center for Global Inquiry + Innovation

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The Center for Global Inquiry + Innovation (CGII) is pleased to announce that Prof. Gaurav Giri (SEAS) and Prof. Balashankar Mulloth (Batten School of Leadership and Public Policy) have been awarded a Global Program of Distinction (G-POD) grant for the project “Developing Cost Effective Air Filters for Developing Countries.” The award amount was $86,000. Prof. Giri is a Chemical Engineer in UVa’s School of Engineering and Applied Sciences. Prof. Mulloth specializes in social entrepreneurship and sustainability, with a special interest in emerging regions, including India and South-East Asia. The selection committee consisted of Brian Owensby (chair of the committee; College, History; Director, CGII), Cliff Maxwell (CGII), Esther Lorenz (Architecture), Steve Majewski (College, Astronomy), Howard Epstein (College, Environmental Sciences), Tony Lin (Institute for the Advanced Study of Culture), Andres Clarens (Engineering), Molly Lipscomb (Batten).

The project seeks to develop and implement a cost-effective means of mitigating the effects of air pollution in Kathmandu, the capital of Nepal, by employing new materials that will allow ordinary low-cost air masks to filter out harmful gases. Air pollution in Kathmandu has been described as among the worst in the world, the product of accelerated industrialization over recent decades. Ordinary face masks filter out particulates, but not toxic gases. Millions of Nepalis live exposed to unhealthy air because they cannot afford expensive masks that filter gases. The objective is to introduce a multipurpose mask that is more effective than commercially available or homemade masks.

The project combines engineering expertise and social entrepreneurship. One of the central goals is to use locally sourced materials (local fibers), and local industrial processes to create the filters. The project team consists of the PIs, Nepali partners in government agencies and non-governmental organizations, and colleagues at other universities in the US and Nepal. This group will test the materials, educate the public, produce the masks, and distribute them widely in collaboration with the Nepali government.

Once the materials and processes have been tested in Nepal, the PIs hope to apply what they have learned to other high-pollution regions in the world. These could include cities in China, India, and Brazil, as well as high-pollution cities in the Europe and the US, such as London, Los Angeles, and Philadelphia. The World Health Organization has recognized that 3.7 million deaths occur annually due to air pollution worldwide. Air pollution leads to acute lower respiratory infections in children, and chronic pulmonary disease in adults. The PIs are looking toward applying for NSF funding and other external sources to make the project self-sustaining.