

## **Translating Research Into Public Policy for Population Health (TRIPP). A proposal for Roadmap 2.0**

It is clear that numerous biological, social, and behavioral factors influence the course of population health. While contemporary science has enabled the development of health-related data from numerous sectors, challenges remain to integrate these various sources of information into optimal decision-making tools for public policy, clinical trial-based policy guidelines, interventions designed to reduce health disparities, and integration of new molecular and genomic technologies into routine health care delivery. This unique initiative seeks to provide resources for developing data-driven mathematical models and modeling tools to address these issues. Moreover, the resource is intended to be widely available to the outside research and health care community. NCI, OBSSR, FIC, NIBIB, NIAAA, and NIA, along with other IC partners and the investigator community, recognize the need for a trans-NIH initiative in integrative population health modeling, particularly focusing on the development of tools for evidence based decision making which can be used for public health planning and policy. Simulation modeling is a tool that has proven instructive for guiding policy decisions and without such tools, policy makers have difficulty making sense of a complex, multi-faceted problems and as a result often make intuitive decisions that are not evidence based and often ineffective. Our portfolio analysis and environmental scan (see details below) revealed that most NIH modeling programs have heavily focused on the biological/biomedical levels of analysis with limited investment in models that integrate across biological, behavioral, social, and population levels suited to informing public health policy. According to this analysis, clear gaps exist: 1) there are few models that integrate family history/genetic and biological levels with population levels of health; 2) there are a limited number of comparative modeling efforts, and 3) there is a paucity of modeling efforts addressing health disparities in the US and around the globe. A large trans-NIH investment in integrative modeling is needed to create an infrastructure of modeling networks, shared resources, training for investigators and policy makers, and to jump start policy relevant applied simulation modeling "experiments" and "action labs". The return on this investment will be that investigators and policy makers will be far better equipped to translate their findings into policies and programs that can impact public health in a cost effective manner.

The specific goals of TRIPP are to:

- integrate biological, behavioral, social, and population levels within models (multi-scale models) to better understand broad based health and disease in populations, including risk factors and the more distal socio-environmental factors that confer health risk;
- conduct comparative modeling to strengthen the understanding of problems; and where different models agree, highlight uncertainty, where they disagree, articulate reasons for the discrepancies;
- create a shared model infrastructure that can be used to link models across the disease life-cycle spectrum and study the effect of risk factor modification across the full range of diseases being impacted;
- make modeling infrastructure available to the wider research and public health community by soliciting "implementation" grants to facilitate collaboration between content experts and modelers to address applied public health policy problems including health disparities and global health problems;
- provide training opportunities and curriculum development, increasing the number of investigators that can create policy relevant models and/or effectively work with modelers to produce results which can be used to influence public health planning, public health guidelines, or policy decisions.

If the budget is cut, training/curriculum development would be reduced along with the number and variety of implementation grants.

### **INITIATIVES**

1. Create a core generic health vulnerability models to be shared by modelers – contract mechanism
2. Cooperative agreements to develop models for risk factors (upstream) and disease outcome (downstream) also for comparative modeling. U01 mechanism
3. Implementation grants, for investigators/policy makers to utilize and tailor the models in #2 (and others) to inform public health policy decisions.
4. Training grants (D43) to train investigators and policy makers in the development or utilization of models
5. Curriculum development grants (R25) for modeling/utilization of models
6. Coordinating center to coordinate all initiatives – task order contract

Questions/comments? Contact

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