

Dissemination Plan

The results of this research will be publicly disseminated and shared with the scientific community. We will adhere to an “**open-source**” **philosophy**, and will publicize all outcomes, to the extent that this is possible (i.e., without violating proprietary data/nondisclosure agreements). This will be achieved in the following ways:

- By **presentations** in national/international conferences and **publications** in peer-reviewed scientific journals.
- By the creation of a **public website**, which will be continually updated as the project evolves, and act as our project’s gateway. This website will present the grand challenge and project vision, will highlight important results, and will contain links to related publications, including useful links to the work of other researchers or online data sources; it will provide information on the principal investigators and their students; it will facilitate access to the large volume of gathered data (which will thus have to be appropriately organized and stored in some form of database); finally, it will include the software programs (and source code) developed to solve the proposed network flow problems, along with documentation on how the programs can be used. The website will be maintained by the students (PhD and/or undergraduate) that will be supported from this effort.
- **Monthly teleseminars** will be organized to present the results of the project. The presentation slides (with possibly audio/video content) will be posted on the project’s website.
- **Quarterly teleconferences** will be held to communicate the project’s status and results to our Project Advisory Board (which will include faculty members from ISU and other universities spanning a wide range of disciplines, as well as representatives from our industrial affiliates—typically high-ranking engineers or executives with invaluable practical experience and know-how).
- We will organize two **energy and transportation infrastructure workshops** to communicate research results and provide a forum for ISU faculty and students to interact with industry and other researchers. These workshops will showcase new methodologies, technologies and insights gained. In addition, these workshops will facilitate the exchange of ideas and perspectives among members of the energy and transportation communities, which might not have been initiated otherwise.
- As a land-grant university, ISU is committed to community extension and outreach service. We will interact with two high-school teachers as well as **instructors** from the Iowa Lakes Community College, in an effort to attract more students into science and engineering or into supporting technical fields. In particular, this project will create a wealth of information about “futuristic” energy sources and nontraditional transportation modes; this information will be integrated in high-school educational material, in collaboration with the teachers.
- Iowa State University has an ongoing **high-school internship** program to employ high-school students in research programs during the summer. A parallel program for involving women and underrepresented minority high school students is also in place. We will recruit summer interns that will work with graduate students and faculty members in a highly nurturing and non-intimidating environment.
- We realize the need to upgrade our current curriculum to reflect the most recent advances. Hence, we plan to develop a **new program in energy and transportation infrastructure systems**. This will include a series of specialized courses and continuing education modules, which will also be available as online distance education courses, or in the form of electronic books, and will lead to a certificate or degree. This proposal will help us develop (with help from our industrial advisors) educational material related, for instance, to power system market operations and economics, freight operations and data analysis techniques, optimization methods and decomposition algorithms, alternate energy sources, plug-in hybrids and smart-grid integration, transportation biofuels, and other.