

## **Development of a multi-faceted, interactive, web-based Chicago ULTRA-Hub**

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The Chicago ULTRA-Ex project addresses questions fundamental to understand the dynamic interactions between biodiversity conservation, ecosystem processes, and human well being in urban landscapes. One of the main goals of the project is to develop an interactive web platform for managing data and communicating research findings to planners and the public, and collaborating with scientists and practitioners. Having a virtual center to collaborate with researchers, planners, land managers and citizenry involved in all facets of research, planning, management and development of the greater Chicago socio-ecological system without geographical limitations is very attractive. In order to address these issues, we explored the viable options for developing a multi-faceted, interactive, web-based Chicago ULTRA-Hub. The proposed ULTRA-Hub includes an interactive platform for managing data, communicating research findings to planners and the public, and collaborating and interacting with scientist and practitioners. It also serves as an umbrella and focal point for urban ecosystem research and policy, and will partner with regional education and outreach programs. The Hub technologies were developed at Purdue University to create dynamic web sites for scientific research and educational activities in which hub users can interact with other users and easily publish not only their research findings but also research tools and presentations. The Hub technologies were open sourced recently under the name of “HubZero” project so that other research groups can easily develop their own hub sites. The HubZero will be a natural starting point for developing the ULTRA-Ex hub site since it provides all the basic features required for the hub. Although the Hub technologies have become popular in many research areas and lots of hub sites have been created such as nanoHub, phamaHub, to name a few, the tools developed in the hub have had limited abilities to work with geospatial data. Working with geospatial data and performing geospatial analysis are critical in the ULTRA-Ex hub since geospatial data play critical roles in answering the questions we want to address in the project. Lacking geospatial capabilities in the current hub technologies, this study focuses on potential alternatives to incorporate geospatial capabilities in the current Hub technologies using various tools available currently, and highlights some of other key features that would be desirable to be added in the ULTRA hub.