

## **Presentation Abstract**

### **Hydrologic Impacts and Climate Change – Proposed Future Direction for PCIC**

The purpose of the hydrologic impacts program at the Pacific Climate Impacts Consortium (PCIC) is to quantify the effects of climate change and climate variability on the hydrologic cycle in Pacific North America. This challenging mandate requires knowledge, experience and the requisite technology to project climate change effects on a landscape of considerable topographic, climatic and physiographic complexity with strong cryospheric influences. The need for this information is clear: sustainable management of the region's water resources to address a wide spectrum of issues, including commercial and domestic water supply, irrigation, power generation, fisheries, recreation, transportation and public safety. Although PCIC has made substantial progress to date in understanding the impacts of climate change on water resources, particularly from a power generation perspective, several challenging goals remain. These include: 1) an expanded geographic scope of hydrologic projections to include all of British Columbia (BC) and neighboring regions; 2) increased accuracy in representing the hydrologic cycle in mountainous topography (which is mainly hindered by lack of an explicit representation of glacier mass balance and dynamics and the inaccurate specification of system boundary conditions, particularly precipitation); 3) improved representation of extreme event behavior (floods and droughts); and 4) improved quantification and diagnosis of all sources of projection uncertainty (Global Climate Model, natural variability, emission scenario, downscaling, land surface model, parameter uncertainty and observational uncertainty). There is also a need to assume a greater role in understanding and providing more meaningful interpretation of how to use climate change projections.