Abstract
In addition to the research and case studies that are underway in the private sector, there is ongoing research and development in the field of LCA in the US. This paper will briefly mention several of these efforts and give references and websites for further investigation.

Introduction
LCA activities in North America were recently discussed in an article that appeared in the Journal of Industrial Ecology (Fava, et al, 2002). While several efforts were mentioned in that paper, here the concentration will be on the recent research and development activities in the US. These efforts are classified in this paper as Life Cycle Inventory (LCI) and Case Study Support, Life Cycle Impact Assessment (LCIA) research, and overall Life Cycle Activities.

LC Inventory and Case Study Support
LCAccess, a webpage developed by the U.S. EPA’s National Risk Management Research Laboratory, provides a variety of information related to LCA. There are sections entitled: Why LCA?, LCA 101, Data Sources, LCA Resources, Ongoing Efforts, and Upcoming Events. The primary purpose of the website is to encourage the use of LCA for better environmental decision-making and to assist users in performing LCAs by highlighting available LCI databases. LCAccess is available at: http://www.epa.gov/ORD/NRMRL/lcaccess/.

The North American Life Cycle Inventory Database Project has participation from the United States, Canada, and Mexico. The aim of this project is to “produce publicly available LCI databases for commonly used materials, products, and processes.” The first phase of the project finished the collaborative development of a research protocol which is designed to ensure that the LCI data developed during Phase 2 (just getting underway) will be comparable across material groups, and will enable LCAs which meet or exceed ISO standards. The data represented within this system are “cradle to gate” for each of the materials included. Further information about the project may be found at: http://www.nrel.gov/lci.

Determining the appropriate LCI for electricity sources is a complex question, and results can depend upon modeling approach (taking a “marginal” or “consequential” approach versus an “average” approach), the location of the electricity demand within a country as large as the US, and even the particular end-use, since different end-uses concentrate the demand for electricity into different seasons of the year or hours of the day. A project, funded by the US EPA’s National Risk Management Research Laboratory and DOE’s National Renewable Energy Laboratory, was conducted to investigate these and other issues related to constructing an LCI for electricity power generation in the US. The results of an international workshop on this topic may be found at www.sylvatica.com/electricityworkshop.htm.

USCAR (US Council for Automotive Research) includes DaimlerChrysler, Ford and General Motors, and had participation from the Aluminum Association, the American Iron and Steel Institute and the American Plastics Council. Using the typical midsize family sedan as the
standard vehicle, each of these collaborators joined forces to develop an LCI to allow analysis of the emissions and resources used to make, operate and dispose of an automobile. More details may be found at [http://www.uscar.org/](http://www.uscar.org/).

The BEES (Building for Environmental and Economic Sustainability) software was developed by the National Institute of Standards and Technology (NIST) Building and Fire Research Lab with support from the U.S. EPA Environmentally Preferable Purchasing Program and the White House-sponsored Partnership for Advancing Technology in Housing (PATH). BEES allows analysis of the environmental and economic performance of building products. BEES was built for designers, builders, and product manufacturers. Inventory, impact assessment, normalization, and weighting are all included. In the latest version of BEES, inventory data is a combination of industry submittals and secondary data from the open literature; impact assessment is accomplished by relying primarily on TRACI (the Tool for the Reduction and Assessment of Chemical and other environmental Impacts); normalization data comes from the U.S. EPA, and weighting is user defined. The software can be downloaded from: [http://www.bfrl.nist.gov/oae/software/bees.html](http://www.bfrl.nist.gov/oae/software/bees.html).

One of the first LCA applications within the U.S. EPA’s Design for the Environment Program is an analysis of various computer displays. This project developed from a voluntary partnership with the electronics industry comparing the cost, performance, and LCA impacts of CRT and FPD technologies for desktop computers. Further information may be found at: [http://www.epa.gov/opptintr/dfe/tools/lca.htm](http://www.epa.gov/opptintr/dfe/tools/lca.htm).

The US EPA’s National Risk Management Research Laboratory is compiling a LCI database to allow various analyses of solid waste management strategies. Included within the database will be the following basic materials: plastic, metals, glass, and paper, and the following possible management actions: landfilling, combustion, recycling, composting, and transportation. For further information see [http://www.epa.gov/appcdwww/apb/lcp.htm](http://www.epa.gov/appcdwww/apb/lcp.htm).

**LC Impact Assessment Research**

The U.S. EPA has just released TRACI, the Tool for the Reduction and Assessment of Chemical and other environmental Impacts, which allows the characterization of potential effects, including ozone depletion, global warming, acidification, eutrophication, tropospheric ozone (smog) formation, ecotoxicity, human particulate effects, human carcinogenic effects, human non-carcinogenic effects, fossil fuel depletion, and land use effects. The impact assessment methodologies within TRACI are a result of eight years of research. Consistency with previous modeling assumptions was important for every category. When there was no EPA precedent, assumptions and value choices were minimized in some cases by the use of midpoints (Bare, et al, 2000). Probabilistic analyses allowed the determination of an appropriate level of sophistication and spatial resolution necessary for impact modeling for several categories, yet the tool was designed to accommodate data availability limitations inherent in current LCI practice. TRACI is currently downloadable at the following website: [http://epa.gov/ORD/NRMRL/std/sab/iam_traci.htm](http://epa.gov/ORD/NRMRL/std/sab/iam_traci.htm).

**Life Cycle Activities**

The mission of the American Center for Life Cycle Assessment (ACLCA) is to promote the use of LCA in America. ACLCA has provided various LCA-related conferences and electronic conferences and supports the incorporation of LCA in various educational endeavors. Also within their mission is the promotion of networking among LCA practitioners and researchers. More information can be found at [http://www.lcacenter.org/](http://www.lcacenter.org/).
Conclusions
LCA activities currently underway or recently completed within the US include research on LCIA, LCI, and promotion of LCA use. Please see the cited websites for further information.

References