Connecticut Academy of Science and Engineering

Annual Report

2009-2010

Connecticut Academy of Science and Engineering

The Connecticut Academy is a non-profit institution patterned after the National Academy of Sciences to identify and study issues and technological advancements that are or should be of concern to the state of Connecticut. It was founded in 1976 by a Special Act of the Connecticut General Assembly.

Vision

The Connecticut Academy will foster an environment in Connecticut where scientific and technological creativity can thrive and contribute to Connecticut becoming a leading place in the country to live, work and produce for all its citizens, who will continue to enjoy economic well being and a high quality of life.

Mission Statement

The Connecticut Academy will provide expert guidance on science and technology to the people and to the state of Connecticut, and promote the application of science and technology to human welfare and economic well being.

Goals

- *To provide information and advice on science and technology to the government, industry and people of Connecticut.*
- *To initiate activities that foster science and engineering education of the highest quality, and promote interest in science and engineering on the part of the public, especially young people.*
- *To provide opportunities for both specialized and inter-disciplinary discourse among its own members, members of the broader technical community, and the community at large.*

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The state of the Academy at the end of the 2010 fiscal year on June 30, 2010, continues to be excellent. The year was highlighted by projects conducted on behalf of state agencies and others. While the state faced continuing budgetary pressures due to a projected budget deficit, demand for Academy services remained strong from state agencies.

This year the Academy's membership continued to grow with the election of 28 new members and a total membership at year end of 266 of Connecticut's leading scientists, physicians and engineers. Financially the Academy ended the year in excellent condition and is well positioned to maintain financial stability through the 2011 fiscal year.

The Academy's efforts in advising the state on issues of science and technology were highlighted this year through its efforts on several projects that were completed, neared completion this year or were just getting underway as the fiscal year came to a close. These projects showcase the broad nature of the Academy's services on a wide range of issues of importance to the State of Connecticut including, among others, energy, health and transportation. The Public Policy Inquires section of this report highlights the details of these projects.

Academy Member Dr. Jonathan Rothberg, Founder, CEO and Chairman, Ion Torrent, was named the winner of the 2010 Connecticut Medal of Technology award in recognition of his accomplishments that include developing sequencing technology that will help improve the health of people around the world. By focusing his efforts in Connecticut, he has brought jobs, opportunity and innovation to the state. He was selected for this honor, which was awarded on behalf of the state by the Board of Governors of Higher Education, by an Academy Committee.

The Academy's quarterly *Bulletin* continues to inform the public and provide the state's government and business leadership and the general public with timely notice of developments of interest at both the state and national levels. This year the *Bulletin*'s feature articles discussed a wide range of topics, including "Yale Lab Develops 'Deceptively Simple' Device: Silicon Nanowires Key to Revolutionary New Hand-Held Diagnostic Biosensors," "New Research Suggests Poor Dental health Linked to More Serious Health Issues," "Yale's Thomas Steitz Awarded Nobel Prize in Chemistry for Ribosome Research," and "MacArthur Fellow Mary Tinetti's Research Challenges

Assumptions about Elderly Falls." Also, the Academy continued its efforts to support science and technology initiatives in the state by assisting the *Hartford Courant* in its Newspapers in Education – Science Matters series, a program targeted at middle school students that publishes articles about interesting science and technology topics and individuals throughout the school year.

This year Dr. Myron Genel completed his two-year term as president of the Academy. Mike has been an invaluable asset to the Academy by successfully guiding it through a period of state financial instability; as his term comes to a close, the Academy's financial position is excellent, our membership is growing and our services provide great value to the state. On behalf of the membership of the Academy, I would like to thank Mike for his service and commitment to the Academy and its mission. Mike will continue his service to the Academy in his new role as past president for the next two years.

Also, special recognition goes to Dr. Alan Eckbreth, who is completing his six years of service to the Academy as its vice president, president, and finally, as past president this year.

The General Assembly, state agencies and other organizations continue to call upon the Academy to address key issues involving science, engineering and technology. The Academy is pleased to have had an opportunity to participate in developing innovative ideas and solutions to various issues for consideration of the state's leadership and looks forward to meeting new challenges in the year ahead.

On behalf of the Academy's membership and its Governing Council, I would like to thank the individuals and organizations that have assisted us in the past year—our members, patrons, clients and colleagues.

Gale F. Hoffnagle
President
July 1, 2010

The property, affairs and activities of the Academy are managed by a Council of 11 Members, which serves also as the Board of Directors of the Corporation. In addition, the chairs of the ten Technical Boards serve as *ex officio*, non-voting members of the Council. The Council meets quarterly. There are three Standing Committees of the Academy: Executive, Membership and Nominating.

The members of the Council and chairs of the Standing Committees for the 2010 fiscal year were as follows:

Council of the Academy

Officers:

President – Myron Genel, Yale School of Medicine
Vice-President/President Elect – Gale F. Hoffnagle, TRC Environmental Corporation, Inc.
Treasurer – Frederick J. Leonberger, JDS Uniphase Corporation (ret.)
Secretary – Sandra K. Weller, University of Connecticut Health Center
Past President – Alan C. Eckbreth, Consultant & United Technologies Research Center (ret.)

Councilors:

Margaret Grey, Yale University
Herbert S. Levinson, Transportation Consultant & University of Connecticut (ret.)
Louis A. Magnarelli, Connecticut Agricultural Experiment Station
Louis Manzione, University of Hartford
Harris Marcus, University of Connecticut
Richard D. Pinder, Connecticut Department of Public Safety (ret.)

Chairmen of the Technical Boards:
(See pages 5–6 for a listing of the chairs.)

Council Advisors:

John P. Cagnetta, Northeast Utilities (ret.)
Anthony J. DeMaria, Coherent*DEOS LLC
J. E. Goldman, GB Energy Systems, Inc.
Harvey S. Sadow, Boehringer Ingelheim Corporation (ret.)
Michael J. Werle, TEaMS, Inc.

Academy Staff:

Executive Director
Richard H. Strauss

Assistant Director for Programs
Ann G. Bertini

Office Administrator
Jerome F. Jaminet

Chairmen of the Standing Committees:

Executive
Myron Genel, Yale School of Medicine

Membership
Kathleen Maurer, University of Connecticut Health Center

Nominating
Alan C. Eckbreth, Consultant & United Technologies Research Center (ret.)

Technical Boards

The Members of the Academy are divided into ten Technical Boards (TBs) that represent both their technical and public policy interests.

The TB responsibilities in their designated policy areas include: serving as a forum for examining science-based issues; providing the resources for assembling and overseeing ad hoc committees to respond to inquiries placed with the Academy; and generating guidance in instances where science and technology are expected to offer new opportunities or challenges for the development of sound state policy. In each of the above, the TBs may encourage the participation of expert non-members.

The Chairs and mission statements of the TBs for the 2010 fiscal year were:

AGRICULTURE, FOOD AND NUTRITION:
Louis A. Magnarelli, The Connecticut Agricultural Experiment Station
The production, distribution, safety, and nutrition of food, including development of biotechnology to improve the quality of food and the environment.

BIOMEDICAL RESEARCH AND HEALTH CARE:
Gualberto Ruano, GENOMAS, Inc.
The delivery, quality and cost of medical care and related problems, including preventative health care and the development of biotechnology for improving human health.

COMMUNICATION AND INFORMATION SYSTEMS:
Louis Manzione, University of Hartford
All means of communicating: voice, data, and other combinations of business and personal information, including the development of new hardware and software technologies, with special attention to complementarity and interchangeability with transportation systems.

ECONOMIC DEVELOPMENT:
Karl M. Prewo, Innovatech, LLC
Economic opportunities afforded by Connecticut's technological base and its human and natural resources, with a special role in assessing the potential economic impact of new technologies.

ENERGY PRODUCTION, USE AND CONSERVATION:
Lee S. Langston, University of Connecticut
The production, use, conservation and distribution of energy with special attention to meeting future demand and environmental quality standards.

ENVIRONMENT:
Barry Chernoff, Wesleyan University
The physics, chemistry, geology, biology, ecology and engineering of the environment as these relate to issues of economic development, energy use, transportation, public health and the quality and utilization of Connecticut's atmosphere, land, water and sea natural resources.

HUMAN RESOURCES:
Kathleen F. Maurer, University of Connecticut Health Center
The effective utilization of people in ways that will contribute to human development and economic growth, including applications of technology to improve both basic and advanced skills to make people more employable, and with attention to the impact of urban growth and development.

PUBLIC HEALTH:
James C. Hogan, Jr., Connecticut Department of Public Health (ret.)
The impacts on the public health of communicable diseases and of materials and energy of man-made and natural origin in the environment.

TECHNOLOGY:
Francis R. Preli, Pratt & Whitney
The development and utilization of knowledge for the purpose of providing material goods and services, including the utilization of research results to design and manufacture materials and products, with particular attention to developing effective means for transferring technology from the academic to the industrial community and within the industrial community, and for the improvement of manufacturing technology.

TRANSPORTATION SYSTEMS:
Mitchell Smooke, Yale University
The movement of people and material within and across Connecticut, including vehicles and infrastructure, with special attention to complementarity and interchangeability with communication systems.

NEW MEMBERS

The Bylaws of the Academy provide that members must live or work in Connecticut and are to be elected by the current members on the basis of their accomplishments in science, engineering and/or technology. In particular, scientists and engineers may be considered for membership on the basis of fulfillment of either or both of the following criteria:

- Scientific distinction achieved through significant original contribution in theory or application;
- Unusual accomplishments in the pioneering of new and developing fields of applied science and technology.

In addition, members of the national academies are automatically considered for membership by resolution of Council.

The Academy's enabling legislation as amended by the Connecticut General Assembly in 2009 provided for the Academy, through its Bylaws, to establish its membership limit. In fiscal year 2010, Academy membership adopted a Bylaw amendment to increase the Academy's membership limit from 250 to 400.

At the close of the 2010 fiscal year the Academy had a total of 266 members, including this year's 28 newly elected Academy members, as follows:

Anagnostou, Emmanouil N.
Northeast Utilities Foundation Chair in Environmental Engineering and Professor of Civil & Environmental Engineering, School of Engineering, University of Connecticut

Caplan, Michael J.
C.N.H. Long Professor, Department of Cellular and Molecular Physiology, Yale School of Medicine

Cappello, Michael
Professor of Pediatrics, Microbial Pathogenesis, and Public Health; Director, Yale World Fellows Program, Yale School of Medicine

Carson, Richard E.
Professor of Diagnostic Radiology and Biomedical Engineering, Yale School of Medicine

Carter, C. Barry
Professor and Head, Chemical, Materials and Biomolecular Engineering, School of Engineering, University of Connecticut

Crane, Sir Peter
Carl W. Knobloch Jr. Dean, School of Forestry & Environmental Studies; Professor of Botany, Yale University

Eipper, Elizabeth A.
Janice and Rodney Reynolds Professor of Neurobiology, University of Connecticut Health Center

Fish, Durland
Professor, Division of Epidemiology of Microbial Diseases, School of Public Health, with Joint Appointment in the School of Forestry & Environmental Studies, Yale University

Gao, Robert X.
Pratt & Whitney Chair Professor, Department of Mechanical Engineering, School of Engineering, University of Connecticut

Hafler, David A.
Gilbert H. Glaser Professor; Chairman, Department of Neurology, Yale School of Medicine

Hesselbrock, Victor M.
Professor and Vice Chair, Department of Psychiatry, University of Connecticut Health Center

Holsinger, Kent E.
Professor, Department of Ecology and Evolutionary Biology, University of Connecticut

Insogna, Karl L.
Professor of Internal Medicine; Director, Yale Bone Center, Yale School of Medicine

LaBarre, Robert E.
Principal Mathematician & Group Leader, United Technologies Research Center

Lin, Senjie
Professor of Marine Sciences, University of Connecticut

Liu, David D.
Advisory Engineer, Northrop Grumman Corporation

Mains, Richard E.
Professor and Chair, Neuroscience Department, University of Connecticut Health Center

Mayne, Susan T.
Professor and Head, Division of Chronic Disease Epidemiology, School of Public Health, Yale University

Mazure, Carolyn M.
Professor of Psychiatry and Psychology; Associate Dean for Scientific Affairs; Director, Women's Health Research at Yale, Yale School of Medicine

O'Donnell, James
Professor of Marine Sciences and Joint Professor of Physics, University of Connecticut

Parekh, David E.
Vice President of Research, United Technologies Corporation; Director, United Technologies Research Center

Pfefferle, Lisa D.
C. Baldwin Sawyer Professor, Department of Chemical Engineering, School of Engineering and Applied Science, Yale University

Piech, Zbigniew "Jerry"
Otis Fellow, Engineering Center, Otis Elevator Company

Roeder, G. Shirleen
Eugene Higgins Professor of Molecular, Cellular & Developmental Biology and Genetics, Yale School of Medicine; and Investigator Howard Hughes Medical Institute

Sangiovanni, Joseph J.
Senior Fellow, United Technologies Research Center

Schoelkopf, Robert J.
William A. Norton Professor of Applied Physics and Physics, Yale University

Setlow, Peter
Professor of Molecular, Microbial and Structural Biology, University of Connecticut Health Center

Zhou, Shengli
United Technologies Corporation Professor in Engineering Innovation, Department of Electrical and Computer Engineering, School of Engineering, University of Connecticut

Newly elected members of the Academy at the Annual Meeting, May 20, 2010 (Photo: Al Malpa)

HONORARY MEMBERSHIP

The Academy created the category of Honorary Membership in 2009 to recognize individuals not otherwise eligible for membership. Honorary members are nominated and designated after a 2/3rds vote of the Academy's Council. Selection of Honorary Members is limited to no more than two individuals per year. Honorary Members shall be entitled to all privileges of membership except voting and holding elective office.

Theodore 'Ted' Sergi addresses the gathering after accepting Honorary Membership in the Academy. (Photo: Al Malpa)

Theodore S. Sergi, PhD, was elected to Honorary Membership by the Academy's Governing Council for his assistance and support in restarting the awarding of the state's Connecticut Medals of Science and Technology; for providing visible and ongoing recognition of medal winners at the Science Center; and for his overall support of projects that complement the Academy's own mission and goals, including his leadership as president and CEO of the Connecticut Science Center from its nascent stages in 2003 until its opening in 2009. Dr. Sergi is a former Connecticut Commissioner of Education. During a 27-year career with the State Department of Education, he participated in the development of many important state initiatives, including the first efforts to equalize school

funding, the initiation of the state's testing program, and the beginning of comprehensive planning and public reporting of all education information.

DISTINGUISHED SERVICE AWARD

The Distinguished Service Award, created by the Academy's Governing Council in 2009, honors members that have provided outstanding service to the Academy. The Council nominates, and selects by vote, recipients of this award.

Founding member David Wetstone, right, who served as the Academy's chief operating officer for two-and-a-half decades, receives his Distinguished Service Award from President Myron Genel. (Photo: Al Malpa)

Founding member **David M. Wetstone, PhD**, received the first Distinguished Service Award in recognition of his many years of dedicated service to the Academy. Wetstone served as the first secretary of the Academy and functioned as chief operating officer from the Academy's founding in 1976 until 2001. In his 25 years overseeing Academy operations, Wetstone edited, published and contributed to over 150 reports on science policy to the Connecticut legislative and executive branches and others. From 1959 to 1975, Wetstone worked for United Aircraft Research Laboratories (now United Technologies Research Center), as a senior research scientist in plasma physics and later as a liaison with the US academic research community. In 1975, he began consulting in management information systems and data modeling and, later, in science-based public policy in other states.

One of the principal purposes of the Academy is to provide science and technology information and advice on public policy issues, upon request of a government agency or private organization. Information regarding inquiries received, continued, or completed during the fiscal year is listed below:

A Study of the Feasibility of Utilizing Waste Heat from Central Electric Power Generating Stations: A significant by-product of power generation plants is rejected (or "waste") heat — a result of inefficiencies of the power generating process that are then rejected into the atmosphere or into bodies of water. Large quantities of heat are rejected in Connecticut—enough energy to heat every building in the state. The Connecticut Energy Advisory Board (CEAB) requested that the CASE investigate the feasibility of using the rejected heat rather than wasting it. Connecticut's power plants transform energy stored in nuclear and chemical fuels, with roughly one-third being converted into useful energy and two-thirds being rejected as heat. The total heat currently being rejected from Connecticut's power plants is an untapped resource that is roughly equal in value to all of the fossil fuels used for the state's residential, commercial, and industrial sectors for process and space heating. The study concluded that there are several beneficial uses for this rejected heat, and recommended the following: Rejected heat should be used to develop district energy (heating and cooling) systems in high population/employment areas; Waste heat enterprise zones should be created to encourage economic development; and to complement this effort, Connecticut should also explore the potential of growing algae for generating biofuel from fossil fuel stack gases, or cooling water reject heat. Proven combined heat and power technologies can be utilized to capture rejected heat for useful purposes and will pave the path towards energy independence and security by reducing dependence on fossil fuels, while creating jobs and providing economic benefits, as well as improving the environment and energy efficiency. The challenge is to develop the policies and infrastructure necessary to utilize this valuable resource that is currently wasted.
Study Period: *September 2008 – July 2009. Final Report Issued.*
Source: Connecticut Energy Advisory Board

Design-Build: A Transportation Project Contracting Methodology for Connecticut's Consideration: The Connecticut Department of Transportation (ConnDOT) contracted with CASE to conduct a study to identify how ConnDOT's using the design-build (DB)contracting methodology might benefit the State of Connecticut. There are well documented advantages and disadvantages to both DB and design-bid-build (DBB) that are discussed in this report with respect to transportation projects in Connecticut. The report focused on the challenges that must be overcome to make DB viable in Connecticut. The report concludes that ConnDOT should be able to utilize DB contracting for design and construction of transportation-related projects, noting that DB

is not entirely new to ConnDOT, as the commissioner has the authority to modify or eliminate the bidding process for emergency declaration projects. The General Assembly should adopt legislation permitting use of DB as an option for transportation projects with a requirement that ConnDOT periodically report on its experience in utilizing DB to the Transportation Committee and other relevant committees of the General Assembly for the purposes of determining the value and benefits of this method of contracting to the state and the public.
Study Period: *May 2009 – June 2010. Final Report Issued.*
Source: Connecticut Department of Transportation

Water Quality Monitoring and Assessment Due to Addition of a Lane on a Divided Highway in Southeastern Connecticut: The Connecticut Department of Transportation (ConnDOT) and the Federal Highway Administration (FHWA) are conducting an Environmental Impact Study for the expansion of I-95 between Old Lyme and New London, Connecticut. The United States Geologic Survey (USGS) is conducting a three-year water quality monitoring program to establish the baseline chloride levels in the proposed highway expansion zone, as required by FHWA's Environmental Impact Statement. On behalf of ConnDOT the Academy's tasks on this project are as follows: Task A provides for CASE to study and provide input to ConnDOT regarding the impact of deicing salts on the environment; and Task B calls for the CASE Study Committee to participate on ConnDOT's USGS Project Technical Advisory Committee to monitor and provide technical support and input regarding the USGS Water Quality Monitoring Project.
Project Start Date: *May 2009. Anticipated Completion Date: October 2010.*
Source: Connecticut Department of Transportation

Environmental Mitigation Alternatives for Transportation Projects in Connecticut: The Connecticut Department of Transportation (ConnDOT) contracted with CASE for a study to determine whether consolidated mitigation alternatives such as In-lieu Fee (ILF) and Wetland Banking (WB) programs are viable options to be implemented in Connecticut. ConnDOT is interested in the potential for alternative mitigation strategies to decrease costs and improve construction timing while potentially increasing wetland environmental benefits. To address this objective, published literature was reviewed concerning mitigation practices and surveys of other states and potential third parties were conducted to identify possible solutions. The preliminary findings of this study suggest that ConnDOT should more thoroughly evaluate the cost-benefits of implementing an ILF environmental mitigation alternatives program. At the close of the fiscal year the study's findings and recommendations were pending final review of the CASE Study Committee.
Project Start Date: *August 2009.* Anticipated Completion Date: *September 2010.*
Source: Connecticut Department of Transportation

Energy Assurance Planning, Capabilities, and Resources: The Connecticut Office of Policy and Management (OPM) contracted with CASE for its U.S. Department of Energy stimulus-funded Energy Assurance Planning (EAP) project. The goal of the EAP project is to update the state's current Energy Emergency Plan (16a-9 through 16a-11 of the General Statutes), last updated in 1994. The expected impact of this project will be to provide Connecticut with an informative, actionable, energy response plan that defines the State's role in protecting energy assets and responding to energy shortages, disruptions and emergencies. Other impacts include improved data gathering capacity and upgraded vulnerability assessment. There are five tasks encompassed within the scope of this project:

- TASK 1.0: Development of a Project Management Plan (Task Completed: October 2009)
- TASK 2.0: Development of a Workforce Development Plan (Task Completed: November 2009)
- TASK 3.0: Revision of the State of Connecticut's Energy Assurance Plan
- TASK 4.0: Development of an Energy Supply Disruption Tracking Process
- TASK 5.0: Intra and Inter-State Energy Assurance Exercises

Project Start Date: *September 2009.* Anticipated Project Completion Date: *February 2012.*
Source: Connecticut Office of Policy and Management

Peer Review of an "Evaluation of the Health and Environmental Impacts Associated with Synthetic Turf Playing Fields": On behalf of the Connecticut Department of Environmental Protection, the Connecticut Department of Public Health, the University of Connecticut Health Center, and The Connecticut Agricultural Experiment Station, CASE performed a peer review of their final report on the Evaluation of the Health and Environmental Impacts Associated with Synthetic Turf Playing Fields. The scope of the Technical Review included an examination of the appropriateness of the methods used to sample contaminants, conduct laboratory analysis, and perform human and ecological risk assessment. The Peer Review Committee (PRC) also evaluated the appropriateness of conclusions reached in the environmental and human health risk assessments. In addition, the PRC provided suggestions for future studies that were not part of the state agencies' scope of work. The CASE Peer Review Committee concluded, based on a review of the state's reports, that there is a limited human health risk, and an environmental risk as shown by the high zinc levels detected. Furthermore, it is believed that some of the results can be easily misinterpreted by the public.
Study Period: *January – June 2010. Final Report Issued.*
Source: Connecticut Department of Environmental Protection, the Connecticut Department of Public Health, the University of Connecticut Health Center, and The Connecticut Agricultural Experiment Station

Peer Review of Biomedical Research Proposals: The Connecticut Department of Public Health (DPH) contracted with CASE to conduct a peer review of 17 biomedical proposals in the fields of heart disease, cancer and tobacco-related diseases. A panel of 24 reviewers comprised of CASE members and other experts from Connecticut and various out-of-state institutions served as reviewers for the project. The process included a Level 1 review with a primary and secondary reviewer for each proposal, in addition to a Level 2 review study section which resulted in eight of the 17 proposals being recommended for funding totaling approximately $2.4M.
Project Period: *February 2010.* Anticipated Project Completion Date: *July 2010.*
Source: Connecticut Department of Public Health

Development of an Enhanced Real-Time Air Quality/Energy Report: As a result of legislation adopted in 2007 that was based on the 2006 CASE study "Energy Alternatives and Conservation," the Academy oversaw the development of a Real-Time Energy Report on behalf of the Office of Policy and Management. In 2010, The Department of Public Utility Control (DPUC) contracted with the Academy to enhance the Real-Time Energy Report with real-time air quality information. Sonalysts, Inc., of Waterford, designed and supported implementation of the enhanced comprehensive real-time air quality/energy report on behalf of CASE, with guidance from DPUC, the Connecticut Department of Environmental Protection and a CASE Technical Committee. The report, called CT Power Update, is designed for use on the web and TV to increase public awareness and affect public behavior to conserve energy, especially during peak energy demand and poor air quality periods. CT Power Update is available online at www.ctenergyinfo.com.
Project Start Date: *March 2010.* Anticipated Project Completion Date: *August 2010.*
Source: Connecticut Department of Public Utility Control

"The Lab" Exhibit Technical Review: A CASE Technical Advisory Committee provided expertise to the Stepping Stones Museum for Children, Norwalk in the development of the museum's new permanent energy exhibit called, "The Lab." Working throughout the conceptual and interpretive phases of the exhibit planning process, the committee provided guidance regarding content development and accuracy, as well as helping to identify key messages and outcomes of the exhibit experience.
Project Start Date: *May 2010.* Anticipated Project Completion Date: *July 2010.*
Source: The Stepping Stones Museum for Children

Advances in Nuclear Power Technology: The Connecticut Energy Advisory Board (CEAB) contracted with CASE to conduct a study on entitled Advances in Nuclear Power Technology. The scope of the study encompasses a literature review to identify advances in nuclear power technology, an overview of nuclear power in the U.S. and other countries, fuel reprocessing and disposal issues, as well as issues surrounding nuclear safety and security, environmental impacts, import of nuclear power and nuclear

power plant siting, among other topics. In addition, the study also calls for an economic impact analysis and a public survey regarding use of nuclear power.
Project Start Date: *June 10, 2010.* Anticipated Project Completion Date: *June 2011.*

Most inquiries are referred to the Technical Boards for a response, or to the Academy Executive Director. One, or more, of the ten Technical Boards is selected to assemble appropriate experts to conduct a study and prepare the response to the inquirer. The Academy provides technical support, prepares reports, and otherwise conducts the pertinent business of the Academy in these efforts.

The Academy also receives requests from state agencies, private organizations, and private inquirers for sources of technical information and technical experts on a variety of topics. While not a referral service, the Academy will provide or suggest resource persons in this state or elsewhere as appropriate.

The Academy continues to be funded by a plan under which the State of Connecticut and the private sector share a substantial portion of the general support of the Academy.

The following major sources of funding were recognized in fiscal year 2010 for a variety of studies and technical assistance (also see Public Policy Inquiries):

- $8,004 from the Connecticut Energy Advisory Board for *A Study of the Feasibility of Utilizing Waste Heat from Central Electric Power Generating Stations.*
- $68,897 from the Connecticut Department of Transportation for a study of *Design-Build: A Transportation Project Contracting Methodology for Connecticut's Consideration.*
- $88,789 from the Connecticut Department of Transportation for a study on *Water Quality Monitoring and Assessment Due to Addition of a Lane on a Divided Highway in Southeastern Connecticut.*
- $70,994 from the Connecticut Department of Transportation for a study of *Environmental Mitigation Alternatives for Transportation Projects in Connecticut.*
- $104,173 from the Connecticut Office of Policy and Management for the project *Energy Assurance Planning, Capabilities and Resources.*
- $25,000 from the Connecticut Department of Environmental Protection for peer review of an *Evaluation of the Health and Environmental Impacts Associated with Synthetic Turf Playing Fields.*
- $60,300 from the Connecticut Department of Public Health for peer review and rating of biomedical research proposals in the fields of heart disease, cancer, or tobacco-related diseases with funding through the state's Tobacco Settlement Fund.
- $67,760 from the Connecticut Department of Public Utility Control for the development of an *Enhanced Real-Time Air Quality/ Energy Report.*
- $ 7,538 from the Connecticut Energy Advisory Board for a study on *Advances in Nuclear Power Technology*.
- $3,000 from the Connecticut Center for Advanced Technology to support the awarding of the H. Joseph Gerber Medal of Excellence to winners of Connecticut science and technology competitions.

In addition to support from the State of Connecticut (see the section on Contracts and Grants), the Academy seeks support and financial contributions from leading industrial and commercial institutions headquartered or having major operations in Connecticut. The total received in fiscal year 2010 was $16,000, for which the Academy is most appreciative.

The following Patrons of the Academy are recognized below for their support and financial contributions in fiscal year 2010. The Academy's Patrons receive all general literature and major reports of the Academy and are invited to its Annual Meeting.

Leading Patron

The Connecticut Light and Power Company

Annual Meeting Sponsors

Connecticut Center for Advanced Technology
Connecticut Development Authority
Connecticut Economic Resource Center
Connecticut Technology Council
TRC Environmental Corporation, Inc.
United Technologies Research Center
University of Connecticut Health Center
University of Connecticut School of Engineering
Yale University School of Medicine
Yale University

Publications

In response to the provision of the Academy charter to *"… encourage both specialized and interdisciplinary discourse among its members and with other members of the technical community by means of … publications …"* the Academy undertakes the following activities:

The Bulletin

This quarterly publication of the Academy promotes the exchange of technical and research information among the various technical communities in Connecticut. The *Bulletin* generally includes a feature article, news from the National Academies, and information regarding science and technology developments of interest in the state of Connecticut.

Additionally an Executive Newsletter, a summary of the *Bulletin*, is published quarterly. This newsletter provides busy industry, academic and government leaders with highlights of the most important issues presented in the Bulletin.

The Bulletin's editorial staff includes Martha Sherman, Managing Editor, and Executive Editors: Academy Members Dr. Phillip J. Garner, Coherent Inc. (ret.) and Dr. Edward C. Monahan, Professor emeritus, Marine Sciences and Resource Economics, University of Connecticut (ret.).

Copies of the *Bulletin* are sent to Academy members, other academic and industrial scientists, state legislators, Connecticut's congressional delegation, commissioners of the state's executive departments, patrons of the Academy, as well as a variety of interested people.

Academy Website

The Academy's website can be found at www.ctcase.org. Information available on the website includes the following:

- Home Page
- About CASE
- The *Bulletin*
- In the Press
- Publications
- *News in Science and Technology* (an executive summary of the *Bulletin*)
- Technical Boards
- Student Science and Technology Competitions and Special Events
- Connecticut Medals of Science and Technology
- H. Joseph Gerber Medal of Excellence
- Honorary Membership
- CASE Member Distinguished Service Award
- Membership Directory
- Links
- Patrons
- Annual Report
- Contact Us

The Connecticut Medals of Science and Technology are awarded in alternate years by the State of Connecticut through the Board of Governors of Higher Education. The Connecticut Medals are modeled after the National Medals of Science and Technology, which are awarded annually by the president of the United States.

The Connecticut Medal of Science is awarded in recognition of extraordinary achievements in scientific fields crucial to Connecticut's economic competitiveness. The Connecticut Medal of Technology is awarded in recognition of extraordinary achievements by an individual in fields of technology that are demonstrated to have made a difference in Connecticut's industrial competitiveness.

Previous recipients of the Connecticut Medal of Science include Frederick M. Richards, Sterling Professor Emeritus of Molecular Biophysics and Biochemistry, Yale University, 1995; Ronald R. Coifman, Professor of Mathematics, Yale University, 1996; and William C. Stwalley, Board of Trustees Distinguished Professor and Head, Physics Department, University of Connecticut, 2005.

Previous recipients of the Connecticut Medal of Technology include H. Joseph Gerber, founder of Gerber Scientific, Inc., 1995; Charles H. Kaman, founder and CEO of Kaman Corporation, 1996; Anthony J. DeMaria, Chief Scientist, Coherent-DEOS, LLC, 2004; and Gene Banucci, Founder and Chairman, ATMI, Inc., 2006.

2010 Connecticut Medal of Technology

Jonathan M. Rothberg, PhD

Jonathan M. Rothberg, PhD
Founder, CEO and Chairman
Ion Torrent

As a second grader, Jonathan Rothberg struggled with reading and, too often, found himself in trouble with his music teacher. However, his mother's belief that he would one day "do good science," coupled with his father's engineer's emphasis on solving problems, formed the foundation for his later accomplishments. By his junior year of college, Rothberg was sequencing DNA, and envisioning ways to do it better—much better.

Rothberg is the founder of four genomics companies in his home state of Connecticut and has dedicated his life to developing sequencing technology that will help improve the health of people around the world. By focusing his efforts in Connecticut, he has brought jobs, opportunity and innovation to the state.

The idea for massively parallel DNA sequencing/next gen sequencing came to him after his infant son was rushed to intensive care and he realized how critical individual genome sequencing was to human health. He subsequently founded 454 Life Sciences in 2004, bringing to market the first new method for sequencing genomes since Sanger and Gilbert won the Nobel Prize in 1980.

In 2007, Rothberg founded Guilford-based Ion Torrent ™, which has pioneered an entirely new approach to genetic sequencing that enables a direct connection between chemical and digital information on a semiconductor chip. The result is a sequencing system that is simpler, faster, more cost effective and scalable than any other technology available. The company's goal is to make this critical technology available to every lab.

Rothberg is also founder of the Rothberg Center for Childhood diseases and RainDance Technologies, a provider of innovative microdroplet-based solutions that accelerate human health and disease research. A New Haven native, Rothberg earned a BS in chemical engineering with an option in biomedical engineering from Carnegie Mellon University and a PhD in biology from Yale University. He was twice named The World Economic Forum's Technology Pioneer and received *The Wall Street Journal's* First Gold Medal for Innovation. He is a member of the National Academy of Engineering, the Connecticut Academy of Science and Engineering, and serves on the board of trustees of Carnegie Mellon University.

This summary was adapted from Dr. Rothberg's narrative for the Connecticut Science Center Medal Project, written by Wendy Millstein, and other materials.

The Academy sponsors, supports, or participates in a number of special activities in response to the mandate of its Charter to: "... promote interest in science and engineering on the part of the public, especially young people." This year the Academy recognized students of the Connecticut Science Challenge, Connecticut Science Fair, Connecticut Junior Science and Humanities Symposium, and the Connecticut Invention Convention at the Academy's Annual Meeting and Awards Dinner on May 20, 2010. Funding for all student and school awards is provided from contributions to the Academy's Student Awards Fund by the Members of the Academy and by the Connecticut Center for Advanced Technology, for its sponsorship of the H. Joseph Gerber Medal of Excellence.

The H. Joseph Gerber Medal of Excellence – An Award of the Connecticut Academy of Science and Engineering in Partnership with the Connecticut Center for Advanced Technology

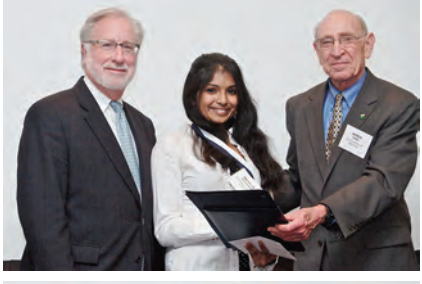
This award is in recognition of H. Joseph Gerber's (1924-1996) technical leadership in inventing, developing and commercializing manufacturing automation systems for a wide variety of industries worldwide. An elected member of the National Academy of Engineering and the Connecticut Academy of Science and Engineering, Mr. Gerber received the National Medal of Technology in 1994 followed by the Connecticut Medal of Technology in 1995.

Joe Gerber's contributions to the technological capabilities of manufacturing were the result of a life grounded in genius, and shaped by vision and determination. As an inventor and as founder, Chief Executive Officer, Chairman of the Board and President of Gerber Scientific, Inc., Mr. Gerber was a leader for nearly half a century in inventing and producing factory automation equipment designed to solve global manufacturing problems. Mr. Gerber shaped his companies and the industries they served with a vision—of increasing human potential through technology; of eliminating tedious, time-consuming manual tasks through automation that increases productivity; and of creating technology that directly and immediately revolutionized manufacturing for companies both large and small. Today, Joe Gerber's genius continues to dominate in the manufacture of apparel and flexible materials, signs and commercial graphics, and lenses for eyeglasses.

Mr. Gerber made the following comments upon his receipt of the National Medal of Technology in 1994: "This award is more than a symbol of personal

achievement as it is the highlight of a long and productive career for me. It is an affirmation that manufacturing automation has enhanced every aspect of human life and profoundly impacted the standard of living of every person and nation in the world. I am only one of the many who have contributed to our nation's rich technological heritage and one of the fortunate few to be recognized for his achievements."

The 2010 H. Joseph Gerber Medal of Excellence was awarded to the winners of the Connecticut Science Challenge and the Connecticut Science Fair's Life Sciences and Physical Sciences Senior Divisions. Each of the winners received a solid silver medal and a $1,000 honorarium.



CASE President Myron Genel, right, and CCAT President Elliott Ginsberg, left, congratulate H. Joseph Gerber Medal of Excellence winners, Jason A. Gandelman (top photo), Amoolya Narayanan (center photo), and William C. Newberry (bottom photo). (Photos: Al Malpa)

Jason A. Gandelman, Staples High School, Westport, CT
2010 Connecticut Science Challenge – 1st Place

Project: *Bioinformatic and Synthetic Approaches to Studying Advanced Glycation End-products in Eukaryotes*

Amoolya Narayanan, Glastonbury High School, Glastonbury, CT
2010 Connecticut Science Fair – 1st Place, Life Sciences - Senior Division

Project: *Effect of Trans-cinnamaldehyde on Reducing Attachment and Invasion of Uropathogenic Escherichia coli in Urinary Epithelial Cells*

William C. Newberry, Greenwich High School, Greenwich, CT
2010 Connecticut Science Fair – 1st Place, Physical Sciences - Senior Division

Project: *Diatom-CdS Nanostructures as a Method to Enhance the Efficiency of a Dye-Sensitized Solar Cell*

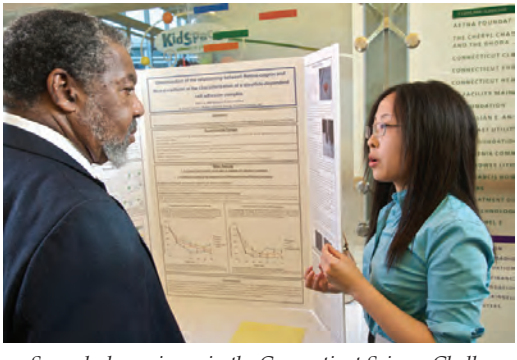
National Intel Science Talent Search and the Connecticut Science Challenge

The national Intel Science Talent Search, administered by Science Service, is sponsored by the world's largest chipmaker, Intel Corporation.

Formerly known as the Westinghouse Science Talent Search, the national contest is America's oldest and most highly regarded science competition for high school seniors that is intended to stimulate student interest in science, math and technology. High school students from around the United States participate in this prestigious annual science project competition. Additionally, the projects of the state's finalists and semifinalists are subsequently judged for state honors in the Connecticut Science Challenge.

This year, more than 1,700 entrants from around the United States competed in the Intel Science Talent Search. A total of 40 students won honors as finalists and 300 students were selected as semi-finalist winners, including five students from Connecticut. Each of Connecticut's semifinalist winners and their respective schools received awards of $1,000.

The 2010 Connecticut Science Challenge first place winner was **Jason A. Gandelman**, a national finalist for his project, *Bioinformatic and Synthetic Approaches to Studying Advanced Glycation End-products in Eukaryotes.* He was also a winner of the H. Joseph Gerber Medal of Excellence. *(Please see the H. Joseph Gerber Medal of Excellence for a listing of the winners of this award.)*



Second-place winner in the Connecticut Science Challenge Jenny Lu discusses her project with CASE member James C. Hogan, Jr. (Photo: Al Malpa)

Second place honors, which included a $500 award from the Academy, went to national semi-finalist **Jenny Lu** of Pomperaug High School, Southbury, CT, for her project, *Determination of the Relationship between Retinacognin and N-cadherin in the Characterization of a Disulfide-dependent Cell Adhesion Complex*. An honorable mention, which included an award of $250 from the Academy, went to **William C. Newberry** of Greenwich High School, Greenwich, CT, for his project, *Laser Induced Microfluidic Motion of a Liquid-Liquid Interface.* In addition, these winners also received a Certificate of Recognition from the Academy and an Official Statement of Recognition from Governor M. Jodi Rell.

Connecticut Science Fair

The 2010 Connecticut Science Fair was held in March at Quinnipiac College in Hamden.

To promote interest in science and engineering, and to recognize those high school students whose science projects are judged to be the best of the senior

division in each of the two major categories, Life Sciences and Physical Sciences, the Academy provides special awards each year to the top two winners of the Connecticut Science Fair.

The winners received the H. Joseph Gerber Medal of Excellence, including a solid silver medal and a $1,000 honorarium. In addition, they received a Certificate of Recognition from the Academy and an Official Statement of Recognition from Governor M. Jodi Rell. *(Please see the H. Joseph Gerber Medal of Excellence for a listing of the winners of this award.)*

Connecticut Junior Science and Humanities Symposium

The Connecticut Junior Science and Humanities Symposium is sponsored by the University of Connecticut and is part of the national U. S. Army Junior Science and Humanities Symposia Program. The Academy joined with other corporations and institutions in support of this event.

Connecticut Junior Science and Humanities Symposium (JSHS) winner Jenny Liu discusses her project with CASE member Donald Aylor. (Photo: Al Malpa)

The 2010 symposium was held in March at the University of Connecticut. The symposium has been effective in enhancing student motivation, stimulating original research and promoting the setting for exciting scientific meetings. It is intended to recognize students who have demonstrated intellectual achievement and promise. This event provides a forum for selected high school students to present a variety of technical papers and posters, meet in small discussion groups with leading scientists from Connecticut industries, and utilize special facilities at the university to explore technical and ethical challenges of current science. The Academy recognizes the top five oral presenters and their respective schools. The winners are as follows:

1st Place, Jenny Liu, Amity Regional High School, Woodbridge, CT
Topic: *Emotional Models Promote Human-Robot Interaction*

2nd Place, Neeharika Krothapalli, Farmington High School, Farmington, CT
Topic: *Characterization of Jatropha curcas Oil and Glycerol for Biofuel Production*

3rd Place, Amoolya Narayanan, Glastonbury High School, Glastonbury, CT
Topic: *Effect of Trans-cinnamaldehyde on Reducing Attachment and Invasion of Uropathogenic Escherichia coli in Urinary Epithelial Cells*

4th Place, Kousanee Chheda, Edwin O. Smith High School, Storrs, CT
Topic: *Hyperbaric Oxygen Treatment (HBOT) Induces Cytoprotection and Angiogenesis in Human Microvascular Endothelial Cells (HMEC-1)*

5th Place, Caroline W. Bazinet, Choate Rosemary Hall, Wallingford, CT
Topic: *Effects of PMCA2 Overexpression on Induction of Apoptosis by Docetaxel and Methotrexate in T47D Cells*

These students and their schools were recognized by the Academy at the JSHS awards ceremony. The students received Certificates of Recognition, and books containing bookplates with the seal of the Academy were presented to both the students and their school libraries in the name of the Academy. Each high school was also recognized with a Letter of Commendation and a $300 donation to its science department to further science and mathematics education from the Academy. Additionally, Governor M. Jodi Rell issued an Official Statement to each high school in recognition of this outstanding achievement.

Connecticut Invention Convention (CIC) winner Cole Reavill discusses his project with CASE dinner attendees. (Photo: Al Malpa)

Connecticut Invention Convention

The Connecticut Invention Convention is a program that seeks to provide students in grades K-8 with a meaningful opportunity to develop and encourage creative thinking and invention. The Invention Convention program is designed to integrate all aspects of a student's educational experience in an effort to solve real-life problems by understanding and using creative skills. The convention provides an opportunity for student inventors to participate in a friendly competition and to share their ideas with each other as well as adult inventors, engineers, patent attorneys and other professionals.

For 2010, the Academy recognized the 15 middle school student winners of the Invention Convention with Certificates of Recognition and monetary awards ($50 US Savings Bonds).

The thirty-fifth Annual Meeting and Dinner of the Academy was held May 20, 2010, at the Hartford Marriott Downtown Hotel, preceded by a reception at the Connecticut Science Center. The event included a business meeting for members that provided a review of the activities and affairs of the Academy. Approximately 300 Academy members and guests had an opportunity to meet with student science competition award winners, who displayed their projects during the event's reception. During dinner, the twenty-eight newly elected members of the Academy were recognized.

CASE member Thomas A. Steitz, Sterling Professor of Molecular Biophysics and Biochemistry and a Howard Hughes Medical Institute investigator at Yale University, addresses the 35th Annual Meeting of the Academy on May 20, 2010. (Photo: Al Malpa)

High school and middle school students of science and technology competitions were presented with awards during the Academy's celebratory Student Science Competition Awards Ceremony. The students and schools recognized by the Academy are listed under the "Special Activities" section of this report. Approximately $6,000 was awarded to this year's winning students and their schools.

The event concluded with a keynote address that was delivered by Academy member Dr. Thomas A. Steitz, Sterling Professor of Molecular Biophysics, Biochemistry and Professor of Chemistry at Yale University, where he has been on the faculty since 1970. He has been a Howard Hughes Medical Institute investigator since 1986. Steitz was a 2009 co-winner of the Nobel Prize in Chemistry for his work describing the structure and function of the ribosome, the protein making factory key to the function of all life.

The Academy recognizes and thanks the following companies and organizations for their generous donations in support of the Annual Meeting: Connecticut Center for Advanced Technology; Connecticut Development Authority; Connecticut Economic Resource Center; Connecticut Technology Council; TRC Environmental Corporation, Inc.; United Technologies Research Center; University of Connecticut Health Center; University of Connecticut School of Engineering; Yale University School of Medicine; and Yale University

Student winners are honored at the Academy's annual dinner May 21, 2010. (Photo: Al Malpa)

CONNECTICUT ACADEMY OF SCIENCE AND ENGINEERING, INCORPORATED

Financial Statements

YEAR ENDED JUNE 30, 2010
(with comparative totals for 2009)

CONNECTICUT ACADEMY OF SCIENCE
AND ENGINEERING INCORPORATED

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JOHN C. BURNS, CPA, LLC
CERTIFIED PUBLIC ACCOUNTANT AND CONSULTANT

Independent Auditor's Report

Council of the Academy
Connecticut Academy of Science
and Engineering, Incorporated
Hartford, Connecticut

I have audited the accompanying statement of financial position of the Connecticut Academy of Science and Engineering, Incorporated (Academy) as of June 30, 2010 and the related statements of activities, cash flows, and functional expenses for the year then ended. These financial statements are the responsibility of the Academy's management. My responsibility is to express an opinion on these financial statements based on my audit.

I conducted my audit in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in Government Auditing Standards, issued by the Comptroller General of the United States. Those standards require that I plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. I believe that my audit provides a reasonable basis for my opinion.

In my opinion, the financial statements referred to above present fairly, in all material respects, the financial position of the Connecticut Academy of Science and Engineering, Incorporated as of June 30, 2010, and the changes in its net assets and its cash flows for the year then ended in conformity with accounting principles generally accepted in the United States of America.

Information at June 30, 2009 and for the year ended June 30, 2009, is presented for comparative purposes only and was extracted from the financial statements prepared by net asset class for that year, on which an unqualified opinion dated December 2, 2009, was expressed.

In accordance with Government Auditing Standards, I have also issued my report dated December 2, 2010, on my consideration of the Academy's internal control over financial reporting and on my tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements and other matters. The purpose of that report is to describe the scope of my testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on the internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with Government Auditing Standards and should be considered in assessing the results of my audit.

John C Burns, CPA, LLC
December 2, 2010

1730 NEW BRITAIN AVENUE • FARMINGTON, CONNECTICUT 06032
PHONE (860) 404-2930 • FAX (860) 255-7349
jcburnscpa@aol.com

Statement of Financial Position

CONNECTICUT ACADEMY OF SCIENCE
AND ENGINEERING INCORPORATED

STATEMENT OF FINANCIAL POSITION
JUNE 30, 2010
(with comparative totals for 2009)

	2010	2009
ASSETS		
Cash, Including Interest-Bearing Deposits of $435,094 in 2010 and $335,892 in 2009 (Note 3)	$435,094	$337,519
Accounts Receivable – Contracts (Note 2)	136,975	63,573
Prepaid Expenses	8,050	7,082
Other Assets	704	704
Furniture and Equipment, Net of Accumulated Depreciation of $33,240 in 2010 and $30,930 in 2009 (Note 2)	5,146	7,456
TOTAL ASSETS	$585,969	$416,334
LIABILITIES AND NET ASSETS		
LIABILITIES		
Accounts Payable and Accrued Expenses	$42,949	$23,768
Contract Revenue Received in Advance (Notes 2 and 5)	49,325	6,000
TOTAL LIABILITIES	92,274	29,768
NET ASSETS (Notes 2 and 6)		
Unrestricted:		
Board Designated	33,725	26,855
Undesignated	376,698	288,450
TOTAL UNRESTRICTED NET ASSETS	410,423	315,305
Temporarily Restricted:	83,272	71,261
TOTAL NET ASSETS	493,695	386,566
TOTAL LIABILITIES AND NET ASSETS	$585,969	$416,334

See notes to financial statements

CONNECTICUT ACADEMY OF SCIENCE
AND ENGINEERING INCORPORATED

STATEMENT OF ACTIVITIES
YEAR ENDED JUNE 30, 2010
(with comparative totals for 2009)

	2010			
	Unrestricted	Temporarily Restricted	Total	2009 Total
Revenues and Other Support				
Contracts (Note 5)	$506,955	$0	$506,955	$390,409
Contributions (Note 2)	22,140	14,285	36,425	32,240
Membership Dues	24,020	0	24,020	23,800
Interest Income	3,379	808	4,187	9,715
Report Fees and Miscellaneous Income	20	0	20	-
Contributed Services (Note 2)	22,002	0	22,002	88,352
Total	578,516	15,093	593,609	544,516
Net Assets Released from Restrictions (Notes 2 and Satisfaction of Program Restrictions	3,082	(3,082)	0	0
Total Revenues and Other Support	581,598	12,011	593,609	544,516
Expenses (Note 2):				
Program Services:				
Publications	31,243	0	31,243	29,182
Technical Guidance and Information	266,605	0	266,605	298,720
Awards	8,274	0	8,274	13,578
Total Program Services	306,122	0	306,122	341,480
Support Services:				
Management and General	180,069	0	180,069	170,054
Fund Raising	289	0	289	304
Total Support Services	180,358	0	180,358	170,358
Total Expenses	486,480	0	486,480	511,838
Change in Net Assets	95,118	12,011	107,129	32,678
Net Assets at Beginning of Year	315,305	71,261	386,566	353,888
Net Assets at End of Year	$410,423	$83,272	$493,695	$386,566

See notes to financial statements

CONNECTICUT ACADEMY OF SCIENCE
AND ENGINEERING INCORPORATED

STATEMENT OF FUNCTIONAL EXPENSES
YEAR ENDED JUNE 30, 2010
(with comparative totals for 2009)

				2010
	PROGRAM SERVICES			
	Publications	Technical Guidance & Information	Awards	Total Program Services
Professional Services	$22,841	$218,131	$1,532	$242,504
Professional Services – In-Kind (Note 2)	0	22,002	0	22,002
Employee Benefits	1,081	11,628	192	12,901
Rent and Parking (Note 7)	797	1,594	0	2,391
Office Expenses	529	802	47	1,378
Insurance	175	351	0	526
Travel and Subsistence	57	5,208	0	5,265
Council Activities	0	0	0	0
Membership Activities	0	0	0	0
Awards and Prizes	0	0	6,503	6,503
Printing	5,578	6,520	0	12,098
Miscellaneous	0	0	0	0
Total Expenses before Depreciation	31,058	266,236	8,274	305,568
Depreciation (Note 2)	185	369	0	554
Total Expenses	$31,243	$266,605	$8,274	$306,122

See notes to financial statements

CONNECTICUT ACADEMY OF SCIENCE
AND ENGINEERING INCORPORATED

STATEMENT OF FUNCTIONAL EXPENSES
YEAR ENDED JUNE 30, 2010
(with comparative totals for 2009)

SUPPORT SERVICES				
Management & General	Fund Raising	Total Support Services	2010 Total Program & Support	2009 Total
$115,190	$0	$115,190	$357,694	$318,833
0	0	0	22,002	88,352
14,622	0	14,622	27,523	25,043
8,732	199	8,931	11,322	11,326
12,091	0	12,091	13,469	11,764
1,622	44	1,666	2,192	2,393
563	0	563	5,828	3,229
3,768	0	3,768	3,768	3,551
20,865	0	20,865	20,865	13,406
0	0	0	6,503	11,902
906	0	906	13,004	16,176
0	0	0	0	3,000
178,359	243	178,602	484,170	508,975
1,710	46	1,756	2,310	2,863
$180,069	$289	$180,358	$486,480	$511,838

See notes to financial statements

Statement of Cash Flows

CONNECTICUT ACADEMY OF SCIENCE
AND ENGINEERING INCORPORATED

STATEMENT OF CASH FLOWS
YEAR ENDED JUNE 30, 2010
(with comparative totals for 2009)

	2010	2009
Cash Flows from Operating Activities		
Change in Net Assets	$ 107,129	$ 32,678
Adjustments to Reconcile Change in Net Assets to		
Net Cash Provided by (Used) in Operating Activities:		
Depreciation	2,310	2,863
Change In:		
Accounts Receivable - Contracts	(73,402)	(38,219)
Prepaid Expenses and Other Assets	(968)	(3,805)
Accounts Payable and Accrued Expenses	19,181	(183)
Contract Revenue Received in Advance	43,325	(8,774)
Total Adjustments	(9,554)	(48,118)
Net Cash Provided by (Used in) Operating Activities	97,575	(15,440)
Cash Flows from Investing Activities		
Additions to Furniture and Equipment	0	0
Net Cash Used in Investing Activities	0	0
Net Increase(Decrease) in Cash	97,575	(15,440)
Cash - Beginning of Year	337,519	352,959
Cash - End of Year	$ 435,094	$ 337,519

See notes to financial statements

CONNECTICUT ACADEMY OF SCIENCE
AND ENGINEERING, INCORPORATED

NOTES TO FINANCIAL STATEMENTS
JUNE 30, 2010
(with comparative totals for 2009)

NOTE 1 – NATURE OF OPERATIONS

The Connecticut Academy of Science and Engineering, Incorporated (Academy) was established to foster science and engineering, to promote the application of science and engineering to human health and welfare, and to study and report upon any subject within its competence when appropriate.

The Academy is a not-for-profit organization established under Special Act No. 76-53 of the State of Connecticut and incorporated under the Non-stock Corporation Act of the State of Connecticut. The Academy is exempt from federal income tax under Section 501(c) (3) of the Internal Revenue Code and is also exempt from state income tax.

NOTE 2 - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Net Asset Classes

The net asset classes of the Academy consist of the following:

Unrestricted Net Assets

Unrestricted net assets consist of net assets over which the governing board has control to use in carrying out the operations of the Academy in accordance with its charter and bylaws and are neither permanently restricted nor temporarily restricted by donor-imposed restrictions. The governing board has designated $33,725 of unrestricted net assets for the Academy's Endowment.

Temporarily Restricted Net Assets

Temporarily restricted net assets consist of net assets whose use is limited by donor-imposed restrictions, which either expire with the passage of time (time restriction) or can be fulfilled and removed by actions of the Academy pursuant to the restrictions (purpose restriction). The Academy reflects contributions as temporarily restricted support based on the purpose of the restrictions stipulated by the donor. The Academy reflects contract revenue as unrestricted support if the restrictions are met in the reporting period. The Academy's temporarily restricted net assets consist of monies restricted for Endowment and Student Award purposes.

NOTE 2 - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (continued)

When donor-imposed restrictions expire, that is when a stipulated time restriction ends or the purpose of the restriction is accomplished, temporarily restricted net assets are reclassified to unrestricted net assets and reported in the accompanying statement of activities as net assets released from restrictions.

Contributions

Contributions received or promises to give without donor-imposed restrictions are reflected as unrestricted support. Contributions received or promises to give with donor-imposed restrictions are reflected as either temporarily or permanently restricted support in the accompanying financial statements. Contributions or promises to give with donor-imposed conditions are not recognized as contributions or promises to give in the accompanying financial statements until the period when the conditions are met.

Contributed Services

Contributed services have been provided by a number of unpaid volunteers who have contributed their time. The members of the Academy and their peers have donated significant amounts of time to the Academy's program services. Contributed services are recognized if the services received create or enhance nonfinancial assets or require specialized skills, are provided by individuals possessing those skills, and would typically need to be purchased if not provided by donation. Contributed services that do not meet the above criteria are not recognized (Note 4).

For the years ended June 30, contributed services and related expenses provided for the Technical Guidance and Information Program reflected in the accompanying financial statements are as follows:

	2010	2009
Professional Services	$22,002	$88,352

Furniture and Equipment

All acquisitions or donations of furniture and equipment are reflected at cost or their fair value at the date of gift. Depreciation is provided for over the

NOTE 2 - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (continued)

estimated useful lives of the assets, which range from five to seven years, on a straight-line basis.

Accounts Receivable - Contracts and Contract Revenue Received in Advance

Accounts receivable - contracts consist of fees earned on contracts in progress, but not yet received. In the opinion of management, all accounts receivable at June 30, 2010 and 2009 are deemed collectible.

Contract revenue received in advance consists of contract fees received, but not yet earned.

Functional Expenses

The costs of providing the various programs and other activities have been summarized on a functional basis on the accompanying Statement of Activities. Accordingly, certain costs have been allocated among the programs and supporting services benefited.

The Academy's Program Services are as follows: "Publications" represents the production and distribution of quarterly bulletins; "Technical Guidance and Information" represents the providing of information and advice on science and technology to government, industry and citizens of Connecticut; and "Awards" represents a student awards program to recognize achievements related to science and technology.

The Academy's Support Services are as follows: "Management and General" represents expenses incurred in support of the general operation and management of the Academy; and "Fund Raising" represents expenses related to fund raising activities in support of the Science and Technology Collaborative and the operation and general affairs of the Academy.

Use of Estimates

The preparation of financial statements in conformity with generally accepted accounting principles requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial

NOTE 2 - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (continued)

statements, and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

NOTE 3 - CONCENTRATION OF CASH CREDIT RISK

The Academy maintains cash accounts at various local banks. Accounts at the banks are insured by the Federal Deposit Insurance Corporation (FDIC) up to $250,000. At June 30, 2010 and 2009, cash balances at banks covered by FDIC insurance aggregate $435,094 and $337,519, respectively and amounts not insured aggregated approximately $123,177 and $0, respectively.

NOTE 4 – DEFINED CONTRIBUTION PLAN

The Academy maintains a simple defined contribution plan for its employees. The Academy matches 100% of the first 3% of each employee's contributions. The amount contributed by the Academy was $5,058 and $4,845 for the years ended June 30, 2010 and 2009, respectively.

NOTE 5 – CONTRACT ARRANGEMENTS AND SUBSEQUENT FUNDING RISKS

During the years ended June 30, 2010 and 2009 the Academy applied to the Connecticut General Assembly, other State Agencies and public companies for funding in the form of Personal Service Agreements. The Academy has obtained various contracts aggregating $582,522 and $590,794 during the years ended June 30, 2010 and 2009, respectively

Future similar operations beyond June 30, 2010 are dependent on continued funding from the State or other similar organizations.

Certain services are provided by the members of the Academy on a volunteer basis, but do not meet the criteria to be recognized in the accompanying financial statements (Note 2).

Contracts, accounts receivable – contracts and contract revenue as of and for the year ended June 30, 2010 consisted of the following:

NOTE 5 – CONTRACT ARRANGEMENTS AND SUBSEQUENT FUNDING RISKS (continued)

Agency	Total Contract Amounts	Accounts Receivable - Contracts	Contract Rev. Year End June 30, 2010
Connecticut Center for Advanced Technologies	$9,000	$0	$3,000
Connecticut Department of Environmental Protection	25,000	0	25,000
Connecticut Department of Public Health	67,000	10,050	60,300
Connecticut Department Public Utility Control	84,700	25,410	67,760
Connecticut Department of Transportation	353,961	15,601	228,680
Connecticut Energy Advisory Board	194,880	25,000	15,542
Connecticut Office of Policy and Management	201,940	60,414	104,173
Connecticut Science Center	500	500	500
Stepping Stone Museum	2,000	0	2,000
Totals	$ 938,981	$136,975	$ 506,955

NOTE 6 - NET ASSETS

Net assets released from donor-restriction by incurring expenses satisfying the purposes of contributions restricted to various Academy programs or restricted as to time periods, amounted to $3,082 and $3,049 for the years ended June 30, 2010 and 2009, respectively. At June 30, 2010 and 2009, net assets of $83,272 and $71,261, respectively, were temporarily restricted.

Net assets temporarily restricted at June 30, 2010 consisted of $57,421 and $25,851 for the Endowment and Student Awards, respectively. Net assets temporarily restricted at June 30, 2009 consisted of $49,743 and $21,518 for the Endowment and Student Awards, respectively.

NOTE 7 – LEASE OBLIGATION

The Academy signed a five year lease for its office space on July 22, 2008. The monthly rental is $830 for the first two years and increases to $855 for years three and four and $880 for year five. The monthly rental includes one parking space. Rent expense amounted to $9,960 and $9,958 for the years ended June 30, 2010 and 2009, respectively.

JOHN C. BURNS, CPA, LLC
CERTIFIED PUBLIC ACCOUNTANT AND CONSULTANT

Independent Auditor's Report on Internal Control over Financial Reporting and on Compliance and Other Matters Based on an Audit of Financial Statements Performed in Accordance With Government Auditing Standards

Council of the Academy
Connecticut Academy of Science
and Engineering, Incorporated
Hartford, Connecticut

I have audited the financial statements of the Connecticut Academy of Science and Engineering, Incorporated (Academy), as of and for the year ended June 30, 2010, and have issued my report thereon dated December 2, 2010. I conducted my audit in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in Government Auditing Standards, issued by the Comptroller General of the United States.

Internal Control Over Financial Reporting

In planning and performing my audit, I considered the Academy's internal control over financial reporting as a basis for designing my auditing procedures for the purpose of expressing my opinion on the financial statements, but not for the purpose of expressing an opinion on the effectiveness of the Academy's internal control over financial reporting. Accordingly, I do not express an opinion on the effectiveness of the Academy's internal control over financial reporting.

A deficiency in internal control exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent or detect and correct misstatements on a timely basis. A material weakness is a deficiency, or combination of deficiencies in internal control, such that there is a reasonable possibility that a material misstatement of the entity's financial statements will not be prevented or detected and corrected on a timely basis.

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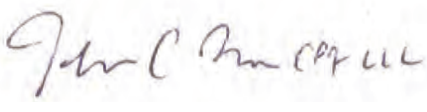
My consideration of the internal control over financial reporting was for the limited purpose described in the first paragraph of this section and would not necessarily identify all deficiencies in internal control that might be significant deficiencies or material weaknesses. I did not identify any deficiencies in internal control over financial reporting that I consider to be material weaknesses, as defined above.

Compliance and other Matters

As part of obtaining reasonable assurance about whether the Academy's financial statements are free of material misstatement, I performed tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements, noncompliance with which could have a direct and material effect on the determination of financial statement amounts. However, providing an opinion on compliance with those provisions was not an objective of my audit, and accordingly, I do not express such an opinion. The results of my tests disclosed no instances of noncompliance or other matters that are required to be reported under Government Auditing Standards.

This report is intended solely for the information and use of the Council of the Academy, management, Connecticut Department of Environmental Protection, the Connecticut Department of Public Health, the Connecticut Department of Public Utility Control, the Connecticut Department of Transportation, the Connecticut Energy Advisory Board and the Connecticut Office of Policy and Management and state awarding agencies and pass-through entities and is not intended to be and should not be used by anyone other than these specified parties.



John C Burns CPA, LLC
December 2, 2010

JOHN C. BURNS, CPA, LLC
CERTIFIED PUBLIC ACCOUNTANT AND CONSULTANT

Independent Auditor's Report on Compliance with Requirements
That Could Have a Direct and Material Effect on Each Major
Program and On Internal Control Over Compliance in Accordance
With the State Single Audit Act and on the Schedule
of Expenditures of State Financial Assistance

Council of the Academy
Connecticut Academy of Science
and Engineering, Incorporated
Hartford, Connecticut

Compliance

I have audited the Connecticut Academy of Science and Engineering, Incorporated's (Academy) compliance with the types of compliance requirements described in the Office of Policy and Management Compliance Supplement/Contract that could have a direct and material effect on each of the Academy's major state programs for the year ended June 30, 2010. The major state programs are identified in the summary of auditors' results section of the accompanying schedule of findings and questioned costs. Compliance with the requirements of laws, regulations, contracts and grants applicable to each of its major state programs is the responsibility of the Academy's management. My responsibility is to express an opinion on the Academy's compliance based on my audit.

I conducted my audit of compliance in accordance with auditing standards generally accepted in the United States of America; the standards applicable to financial audits contained in Government Auditing Standards, issued by the Comptroller General of the United States; and the State Single Audit Act (C.G.S. Section 4-230 to 4-236). Those standards and the State Single Audit Act require that I plan and perform the audit to obtain reasonable assurance about whether noncompliance with the types of compliance requirements referred to above that could have a direct and material effect on a major state program occurred. An audit includes examining, on a test basis, evidence about the Academy's compliance with those requirements and performing such other procedures, as I considered necessary in the circumstances. I believe that my audit provides a reasonable basis for our opinion. My audit does not provide a legal determination on the Academy's compliance with those requirements.

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In my opinion, the Academy complied, in all material respects, with the requirements referred to above that could have a direct and material effect on each of its major state programs for the year ended June 30, 2010.

Internal Control Over Compliance

The management of the Academy is responsible for establishing and maintaining effective internal control over compliance with requirements of laws, regulations, contracts and grants applicable to state programs. In planning and performing my audit, I considered the internal control over compliance with requirements that could have a direct and material effect on a major state program in order to determine my auditing procedures for the purpose of expressing my opinion on compliance and to test and report on internal control over compliance in accordance with the State Single Audit Act, but not for the purpose of expressing an opinion on the effectiveness of internal control over compliance. Accordingly, I do not express an opinion on the effectiveness of the Academy's internal control over compliance.

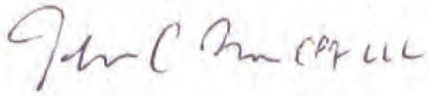
A deficiency in internal control over compliance exists when the design or operation of a control over compliance does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct, noncompliance with a type of compliance requirement of a state program on a timely basis. A material weakness in internal control over compliance is a deficiency, or combination of deficiencies, in internal control over compliance, such that there is a reasonable possibility that material noncompliance with a type of compliance requirement of a state program will not be prevented, or detected and corrected, on a timely basis.

My consideration of the internal control over compliance was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control over compliance that might be deficiencies, significant deficiencies or material weaknesses. I did not identify any deficiencies in internal control over compliance that I consider to be material weaknesses, as defined above.

Schedule of Expenditures of State Financial Assistance

I have audited the financial statements of the Connecticut Academy of Science and Engineering, Incorporated as of and for the year ended June 30, 2010, and have issued my report thereon dated December 2, 2010. My audit was performed for the purpose of forming an opinion on the financial statements taken as a whole. The accompanying schedule of expenditures of state financial assistance is presented for purposes of additional analysis as required by the State Single Audit Act and is not a required part of the basic financial statements. Such information has been subjected to the auditing procedures applied in the audit of the basic financial statements and, in my opinion, is fairly stated, in all material respects, in relation to the basic financial statements taken as a whole.

This report is intended solely for the information and use of the Council of the Academy, management, the Connecticut Department of Environmental Protection, the Connecticut Department of Public Health, the Connecticut Department of Public Utility Control, the Connecticut Department of Transportation, the Connecticut Energy Advisory Board and the Connecticut Office of Policy and Management and state awarding agencies and pass-through entities and is not intended to be and should not be used by anyone other than these specified parties.



John C Burns CPA, LLC
December 2, 2010

CONNECTICUT ACADEMY OF SCIENCE
SCHEDULE 1
AND ENGINEERING, INCORPORATED

SCHEDULE OF
EXPENDITURES OF STATE FINANCIAL ASSISTANCE
YEAR ENDED JUNE 30, 2010

State Grantor Pass – Through Grantor Program Title	State Grant Program Identification Number	Expenditures
Connecticut Department of Environmental Protection		
Peer Review of an Evaluation of the Health and Environmental Impacts Associated with Synthetic Turf Playing Fields	None (Note A)	$25,000
Connecticut Department of Public Health		
Review of grants-in-aid for biomedical research	None (Note A)	60,300
Connecticut Department of Public Utility Control		
Development of an Enhanced Real-Time Comprehensive Air Quality/Energy Report	None (Note A)	67,760
Connecticut Department of Transportation		
Water Quality Monitoring and Assessment due to Addition of a Lane on a Divided Highway in Southeastern Connecticut	None (Note A)	88,789
The Design-Build Contracting Methodology for Transportation Projects: A Review of Practice And Evaluation for Connecticut Applications	None (Note A)	68,897
Environmental Mitigation Alternatives for Transportation Projects in Connecticut	None (Note A)	70,994
Connecticut Energy Advisory Board		
A Study of the Feasibility of Utilizing Waste Heat from Central Electric Power Generating Stations and Potential Applications	None (Note A)	8,004
A Study of Advances in Nuclear Power Technologies	None (Note A)	7,538
Connecticut Office of Policy and Management		
A Study of Connecticut Energy Assurance Planning, Capabilities, and Resources	None (Note A)	104,173
Total State Financial Assistance		$ 501,455

See independent auditors' report and notes to schedule of expenditures of state financial assistance.

CONNECTICUT ACADEMY OF SCIENCE
AND ENGINEERING, INCORPORATED

NOTES TO SCHEDULE OF EXPENDITURES OF STATE FINANCIAL ASSISTANCE
JUNE 30, 2010

NOTE A - GENERAL

State of Connecticut funding is provided from the Connecticut Department of Environmental Protection, the Connecticut Department of Public Health, the Connecticut Department of Public Utility Control, the Connecticut Department of Transportation, the Connecticut Energy Advisory Board and the Connecticut Office of Policy and Management operating budgets through Personal Service Agreements and letters of agreement. Accordingly, the funds are not attributed to a specific State Department and do not have State Grant Program Identification Numbers.

NOTE B - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

The accounting policies of the Academy conform to generally accepted accounting principles as applicable to not-for-profit agencies. The following is a summary of the more significant policies relating to the aforementioned programs:

Basis of Accounting

The financial statements contained in the Academy's annual audit report are prepared on the accrual basis of accounting. Contract revenues and other revenues are recognized upon notification of unconditional contributions of donors or when services are performed. Expenditures are recorded when the obligations are incurred.

Expenditures of State Financial Assistance

The Schedule of Expenditures of State Financial Assistance, contained in this report, is prepared based on regulations established by the State of Connecticut Office of Policy and Management. In accordance with these regulations (Section 4-236-22), certain grants are not dependent on expenditure activity, and accordingly, are considered to be expended in the fiscal year of receipt. These grant program receipts are reflected in the expenditures column of the Schedule of Expenditures of State Financial Assistance.

CONNECTICUT ACADEMY OF SCIENCE
AND ENGINEERING, INCORPORATED

SCHEDULE OF FINDINGS AND QUESTIONED COSTS
YEAR ENDED JUNE 30, 2010

SECTION I- SUMMARY OF AUDIT RESULTS

Financial Statements

The type of auditor's report issued was unqualified.
Internal control over financial reporting:
- Material weakness(es) identified - none
- Significant deficiency(ies) identified – none

Noncompliance material to financial statements noted - none

State Financial Assistance

Internal control over its major programs:
- Material weakness(es) identified - none
- Significant deficiency(ies) identified – none

The type of auditor's report issued on compliance for its major programs was unqualified.

Audit findings disclosed that are required to be reported in accordance with Section 4-236-24 of the Regulations to the State Single Audit Act - none

- The following schedule reflects the major programs included in the audit:

State Grantor and Program	State Grant and Program Identification Numbers	Expenditures
Connecticut Department of Transportation:		
Water Quality Monitoring and Assessment due to Addition of a Lane on a Divided Highway in Southeastern Connecticut	None (Note A)	88,789
The Design-Build Contracting Methodology for Transportation Projects: A Review of Practice And Evaluation for Connecticut Applications	None (Note A)	68,897
Connecticut Office of Policy and Management: A Study of Connecticut Energy Assurance Planning, Capabilities, and Resources	None (Note A)	104,173

- Dollar threshold used to distinguish between type A and type B programs 100,000

CONNECTICUT ACADEMY OF SCIENCE
AND ENGINEERING, INCORPORATED

SCHEDULE OF FINDINGS AND QUESTIONED COSTS
YEAR ENDED JUNE 30, 2010

SECTION II – FINANCIAL STATEMENT FINDINGS

- I issued reports, dated December 2, 2010, on internal control over financial reporting and on compliance and other matters based on an audit of financial statements performed in accordance with Government Auditing Standards.

- My report on compliance indicated no reportable instances on noncompliance.

- My report on internal control over financial reporting indicated no significant deficiencies.

SECTION III – STATE FINANCIAL ASSISTANCE FINDINGS AND QUESTIONED COSTS

- No findings or questioned costs are reported relating to the Academy's State financial assistance programs.

MAJOR STUDIES OF THE ACADEMY

2010

- Peer Review of an "Evaluation of the Health and Environmental Impacts Associated with Synthetic Turf Playing Fields"
- Design-Build: A Transportation Project Contracting Methodology for Connecticut's Consideration

2009

- A Study of the Feasibility of Utilizing Waste Heat From Central Electric Power Generating Stations and Potential Applications
- Independent Monitor Report: Implementation of the UCHC Study Recommendations

2008

- Preparing for Connecticut's Energy Future
- Applying Transportation Asset Management in Connecticut
- A Study of Weigh and Inspection Station Technologies
- A Needs-Based Analysis of the University of Connecticut Health Center Facilities Plan

2007

- A Study of the Feasibility of Utilizing Fuel Cells to Generate Power for the New Haven Rail Line
- Guidelines for Developing a Strategic Plan for Connecticut's Stem Cell Research Program

2006

- Energy Alternatives and Conservation
- Evaluating the Impact of Supplementary Science, Technology, Engineering and Mathematics Educational Programs
- Advanced Communications Technologies
- Preparing for the Hydrogen Economy: Transportation
- Information Technology Systems for Use in Incident Management and Work Zones
- Improving Winter Highway Maintenance: Case Studies for Connecticut Consideration
- An Evaluation of the Geotechnical Engineering and Limited Environmental Assessment of the Beverly Hills Development, New Haven, CT

2005

- Assessment of a Connecticut Technology Seed Capital Fund/ Program
- Demonstration and Evaluation of Hybrid Diesel-Electric Transit Buses
- An Evaluation of Asbestos Exposures in Occupied Spaces

2004

- A Study of Railcar Lavatories and Waste Management Systems

2003

- An Analysis of Energy Available from Agricultural Byproducts, Phase II: Assessing the Energy Production Processes
- Study Update: Bus Propulsion Technologies Available in Connecticut

2002

- A Study of Fuel Cell Systems
- Transportation Investment Evaluation Methods and Tools
- An Analysis of Energy Available from Agricultural Byproducts, Phase 1: Defining the Latent Energy Available

2001

- A Study of Bus Propulsion Technologies in Connecticut

2000

- Efficacy of the Connecticut Motor Vehicle Emissions Testing Program
- Indoor Air Quality in Connecticut Schools

CONNECTICUT ACADEMY OF SCIENCE AND ENGINEERING
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