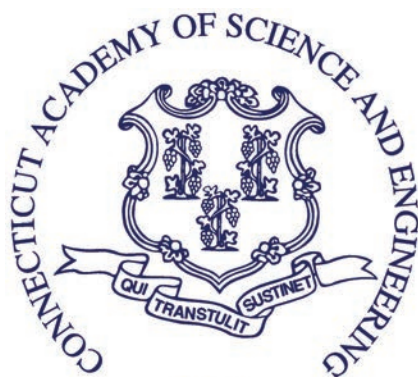


CONNECTICUT ACADEMY OF SCIENCE AND ENGINEERING



1976

ANNUAL REPORT
2010-2011

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.*

CONNECTICUT ACADEMY OF SCIENCE AND ENGINEERING
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The state of the Academy at the end of the 2011 fiscal year, June 30, 2011, continues to be excellent. The year was highlighted by projects conducted on behalf of state agencies and others. Demand for Academy services remained strong from state agencies and the General Assembly. This year the state's two-year budget (FY12/ FY13) included funding for the Academy to conduct a study each year on behalf of the General Assembly. Study topics will be selected based on discussion with the leadership of General Assembly committees.

This year the Academy's membership continued to grow with the election of 35 new members and a total membership at year end of 292 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 2012 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. 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, broadband strategic planning, energy, health, and transportation. The *Public Policy Inquires* section of the annual report highlights project details.

Dr. Steven Suib, Board of Trustees Distinguished Professor and Department Head, Chemistry Department, University of Connecticut was named the winner of the 2011 Connecticut Medal of Science award in recognition of his research efforts and accomplishments that focus on developing new approaches to solve fundamental problems, specifically in the field of catalysis and materials science and involves the synthesis of novel porous semiconductors used to make new chemicals for use in lithium batteries, oil spills, and other applications. He was selected for this honor by an Academy Committee; the medal was awarded on behalf of the state by the Board of Governors of Higher Education.

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 "*Connecticut's Laser Industry: A Proud Past, A Brilliant*

Future," "A Delicate Balance...How to Capitalize on Data Storage Capacity While Maximizing Effectiveness & Ease of Use," "The Future of Nuclear Power in Connecticut," and "Connecticut Researchers, Companies Key Players in Assessing, Managing Gulf Spill." 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 to middle school students that publishes articles about interesting science and technology topics and individuals throughout the school year.

Special recognition for his years of services as office administrator goes to Jerry Jaminet who retired just after the close of the fiscal 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 years 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.

A handwritten signature in black ink, appearing to read "Gale F. Hoffnagle". The signature is written in a cursive style with a large initial "G" and a distinct "H".

Gale F. Hoffnagle
President
July 1, 2011

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: Finance, Membership and Nominating. The members of the Council and chairs of the Standing Committees for the 2011 fiscal year were as follows:

Council of the Academy

Officers:

President: Gale F. Hoffnagle, TRC Environmental Corporation, Inc.
 Vice-President/President Elect: Louis Manzione, University of Hartford
 Treasurer: Frederick J. Leonberger, JDS Uniphase Corporation (ret.)
 Secretary: Sandra K. Weller, University of Connecticut Health Center
 Past President: Myron Genel, Yale School of Medicine

Councilors:

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

Chairmen of the Technical Boards:

(See pages 5-6 for a listing of the chairs.)

Chairmen of the Standing Committees

Executive Committee: Gale F. Hoffnagle, TRC Environmental Corporation, Inc.
Membership Committee: Kathleen Maurer, University of Connecticut
 Health Center
Nominating: Myron Genel, Yale School of Medicine

Council Advisors:

John P. Cagnetta, Northeast Utilities (ret.)
 Anthony J. DeMaria, Coherent*DEOS LLC
 Alan C. Eckbreth, Consultant & United Technologies Research Center (ret.)
 J. E. Goldman, GB Energy Systems, Inc.*
 Michael J. Werle, TEAMS, Inc.

* The Academy notes with regret the death of Jack Goldman on December 20, 2011.

Academy Staff:

Executive Director

Richard H. Strauss

Assistant Director for Programs

Ann G. Bertini

Office Administrator

Jerome F. Jaminet

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 2011 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:

Niloy Dutta, University of Connecticut

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:

Ralph Lewis, University of Connecticut

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:

Scott Rivkees, Yale School of Medicine

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.

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.

Through its Bylaws, Academy membership is limited to 400. At the close of the 2011 fiscal year the Academy had a total of 292 members, including this year's 35 newly elected members, as follows:

Ahn, Charles H.

William K. Lanman Jr. Professor of Applied Physics and Physics, Yale University

Anderson, Karen S.

Professor of Pharmacology, Yale School of Medicine

Anwar, Mehdi

Professor, Electrical and Computer Engineering Department, University of Connecticut

Bailyn, Charles D.

A. Bartlett Giamatti Professor of Astronomy and Physics, Yale University

Bowen, Nicholas S.

Vice President, Technology, IBM

Caira, Janine N.

Board of Trustees Distinguished Professor of Ecology & Evolutionary Biology, University of Connecticut

Carpenter, Thomas O.

Professor of Pediatrics (Endocrinology), Orthopaedics & Rehabilitation, Yale School of Medicine; Clinical Professor, Yale School of Nursing

Cresswell, Peter

Eugene Higgins Professor of Immunobiology, and Professor of Cell Biology and Dermatology, Yale School of Medicine; Investigator, Howard Hughes Medical Institute; Elected Member, Institute of Medicine

Dongari-Bagtzoglou, Anna I.

Professor and Chair, Division of Periodontology, School of Dental Medicine, University of Connecticut Health Center

Epstein, Howard I.

Professor, Civil & Environmental Engineering, University of Connecticut

Exley, Gerard M.

Head, Electromagnetic Systems Department, NAVSEA and Senior Scientific Technical Manager for Submarine Communications, Naval Undersea Warfare Center Division

Fischer, Debra A.

Professor of Astronomy, Yale University

Galvin, Robert S.

Executive Officer, Equity Healthcare, The Blackstone Group; Adjunct Professor, Medicine and Health Policy, Yale School of Medicine; Elected Member, Institute of Medicine

Gruen, Jeffrey R.

Professor of Pediatrics, Genetics, & Investigative Medicine, Yale School of Medicine

Hoffman, Christopher L.

Consulting Engineer, Westinghouse Electric Company

Huang, Hanchen

School of Engineering Named Professor in Sustainable Energy, University of Connecticut

Ilumoka, Abby A.

Professor of Electrical and Computer Engineering, College of Engineering, Technology, and Architecture, University of Hartford

Ivan, John N.

Professor and Associate Head of Department, Civil & Environmental Engineering, University of Connecticut

Likens, Gene E.

Distinguished Research Professor, Department of Ecology and Evolutionary Biology, University of Connecticut; Elected Member, National Academy of Sciences

Lockwood, Charles J.

Anita O’Keefe Young Professor of Women’s Health and Chair,
Department of Obstetrics, Gynecology and Reproductive Sciences,
Yale School of Medicine; Elected Member, Institute of Medicine

McManus, George B.

Professor of Marine Sciences, University of Connecticut

Medzhitov, Ruslan M.

David W. Wallace Professor of Immunobiology, Yale School of
Medicine; Investigator, Howard Hughes Medical Institute; Elected
Member, National Academy of Sciences

Michael, Maged M.

Research Staff Member, IBM T. J. Watson Research Center

Minford, William J.

Engineering Manager, JDSU

Motupally, Sathya

Head of Technology Development/Engineering Manager, UTC
Power

Rosenberg, Daniel W.

Professor of Medicine & Genetics, University of Connecticut Health
Center

Rosenthal Sr., Peter A.

Product Engineering Manager, Coherent, Inc.

Shumway, Sandra E.

Research Professor, Department of Marine Sciences, University of
Connecticut

Silander, John

Professor, Department of Ecology and Evolutionary Biology, and
Co-Chair, Center for Conservation and Biodiversity, University of
Connecticut

Sobh, Tarek M.

Vice President for Graduate Studies and Research Dean, School
of Engineering and Distinguished Professor of Engineering and
Computer Science, University of Bridgeport

Soloff, Robert S.

President, Sonics & Materials, Inc.

Sung, Chih-Jen

School of Engineering Professor in Sustainable Energy, University of
Connecticut



*Newly elected members of the Academy at the Annual Meeting, May 25, 2011.
(Photo: Al Malpa)*

Tankala, Kanishka

Vice President of Operations, Nufem

Van Tassel, Paul R.

Professor and Chair, Department of Chemical and Environmental Engineering, Yale University

Willig, Michael R.

Professor of Ecology and Evolutionary Biology; and Director, Center for Environmental Sciences and Engineering, University of Connecticut

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.



Richard C. Cole addresses the gathering after accepting Honorary Membership in the Academy. (Photo: Al Malpa)

Richard C. Cole was elected to Honorary Membership for his work as President and Chief Executive Officer of the Connecticut Academy for Education in Mathematics, Science & Technology, Inc. (CAE) that was recognized in 1992 by the General Assembly as an organization to serve as a state advocate and broker for high standards in mathematics, science, and technology for all citizens.

Before his retirement in 2011, Cole was responsible for the organizational and fiscal leadership of CAE and for maintaining cooperative

relationships with the governor, legislature, state and federal agencies, industry, local and regional education agencies, parent and community groups, and professional associations. Cole has led several past projects including the Learning Doesn't Take a Vacation Program, Connecticut Academy Science Assessment Program (CASAP), K-12 Mathematics and Science Guides, Systemic Improvement Protocol, and Mathematics and Science Technical Assistance and Professional Development Programs. He has also served as a CASE Study Manager and Study Committee Member. Earlier in his career, Cole was a teacher, school and district administrator, college instructor, and owned his own communications company prior to joining the United Technologies Corporation, where he served as Director of Public Affairs

DISTINGUISHED SERVICE AWARD

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



Dr. Michael J. Werle addresses fellow members and guests after receiving the Academy's 2011 Distinguished Service Award. (Photo: Al Malpa)

Dr. Michael J. Werle received the Distinguished Service Award in 2011. Werle was elected to the Academy in 1994 and began his involvement early on serving as chair of the Academy's Human Resources Technical Board from 1995 - 2002. He went on to serve as executive director of the Academy from 2000 - 2002. From 2002 - 2008, Werle was elected to consecutive 2-year terms as Vice President, President and Past President. In these roles, his leadership was critically important in guiding and establishing a solid financial foundation for the Academy through a challenging transition period.

An international technology development and management expert, Werle is Founder and Senior Technical Advisor of FloDesign Wind Turbine Corp., a Founder and President of FloPropulsion Systems LLC.. In 1995 he retired from 18 years service with United Technologies Corporation (UTC) as the Director for International and External Programs in the Office of Science & Technology. He previously served as the Head of the Gas Dynamics and Thermophysics Laboratory of United Technologies Research Center. Prior to that for 10 years he was a Professor of Engineering at the University of Cincinnati and Virginia Polytechnic Institute. Werle earned both his bachelor and doctorate degrees in aerospace engineering from Virginia Polytechnic and State University. He began his career as a researcher in the US Navy. Werle has over 20 patents, has published over 40 papers in referred journals.

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 (listed by project start date):

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) were required to conduct an Environmental Impact Study (EIS) for the expansion of I-95 between Old Lyme and New London, Connecticut. As part of the EIS, on behalf of ConnDOT and FHWA, the United States Geologic Survey (USGS) conducted a three-year water quality monitoring program to establish the baseline chloride levels in the proposed highway expansion zone. On behalf of ConnDOT the Academy's tasks on this project included: a study of the impacts of deicing salts on the environment; participation 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*. Work effort of this project was concluded: *October 2010*.

Source: Connecticut Department of Transportation

Environmental Mitigation Alternatives for Transportation Projects in Connecticut: 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. 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 study recommended that ConnDOT should investigate establishing an ILF program specific for the department's own use. Also, the following actions were suggested to increase the probability for successful implementation and operation of a mitigation program including: ConnDOT and DEP should develop long-range plans, including forecasting impacts, classifying watershed goals and potential service areas for the implementation of EMAs; and ConnDOT should investigate the potential for legislation allowing private impacts to participate in an ILF program.

Project Period: *August 2009 – September 2010*. *Final Report Issued*.

Source: Connecticut Department of Transportation

Energy Assurance Planning, Capabilities, and Resources: The Connecticut Office of Policy and Management (OPM) contracted with CASE to assist the department in its US Department of Energy stimulus-funded Energy Assurance Planning (EAP) project. The goal of the EAP project is to update

the state's Energy Emergency Plan (16a-9 through 16a-11 of the General Statutes) that was last updated in 1994. The EAP will provide Connecticut with an informative plan that defines the State's role in protecting energy assets and responding to energy shortages, disruptions and emergencies. The project scope included five tasks:

- 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 Connecticut's Energy Assurance Plan (*Projected Task Completion Date: September 2011*)
- TASK 4.0: Development of an Energy Supply Disruption Tracking Process (*Task Completed: August 2010*)
- TASK 5.0: Intra and Inter-State Energy Assurance Exercises (*Inter-State Exercise Completion Date: June 2011*); *Intra-State Projected Completion Date: September 2011*)

Project Start Date: *September 2009. Project Completion Date: September 2011*
(*Note: following the end of FY11, the Energy Office of the Office of Policy and Management was reorganized into the Department of Energy and Environmental Protection. Due to this reorganization it was determined that the Energy Office would make final revisions to the EAP. Additionally, the Energy Office received authorization from US DOE to use the state's response to Tropical Storm Irene (August 2011) in lieu of conducting an Intra-State Exercise.*)

Source: Connecticut Office of Policy and Management

Peer Review Proposal of Biomedical Research Proposals - 2010: 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 a Level 2 review study section was conducted which resulted in eight of the 17 proposals being recommended for funding totaling approximately \$2.4M.

Project Period: *February - July 2010. Project Completed.*

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 – August 2010. Project Completed.*
Source: DPUC

“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 – July 2010. Project Completed.*
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 United States 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 2010. Anticipated Project Completion Date: October 2011*
Source: Connecticut Energy Advisory Board

Guidelines for the Development of a Strategic Plan for Accessibility to and Adoption of Broadband Services in Connecticut: The State of Connecticut received funding from the federal government to create a Strategic Plan for Accessibility to and Adoption of Broadband Services in Connecticut. The Department of Public Utility Control (DPUC), in association with other state entities, contracted with CASE for the purposes of providing guidance – input and suggestions – for the state to use in its formulation of the its strategic plan. The goal in this study is to identify the concepts, ideas, policies and public/private partnership initiatives that the state should consider for its strategic plan to assure that Connecticut has access to the type of service today and in the future that provides for the needs of its citizens and businesses.

Project Start Date: *August 2010* Anticipated Completion Date: *January 2012*
Source: Department of Public Utility Control, Office of Consumer Counsel,
Office of the Governor, and Office of Policy and Management

Peer Review Proposal of Biomedical Research Proposals: The Connecticut Department of Public Health (DPH) contracted with CASE to conduct a peer review of 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 includes a Level 1 review with a primary and secondary reviewer for each proposal, and a Level 2 review study section to select proposals to be recommended for available funding totaling \$968,998.

Project Period: *April 1, 2011*. Anticipated Project Completion Date: *October 2011*

Source: Connecticut Department of Public Health

Alternative Methods for Safety Analysis and Intervention for Use by ConnDOT for Contracting Vehicles and Drivers for Transportation Projects and Services: ConnDOT asked CASE to study how other states assure the safety of trucks utilized on state contracts for transportation services and projects. The study will examine the current method used by Connecticut, and will identify alternative methods to accomplish state safety goals.

Project Start Date: *May 2011*. Anticipated Project Completion Date: *June 2012*
Source: Connecticut Department of Transportation

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 2011 for studies and technical assistance (also see “Public Policy Inquiries”):

- \$229,360 from the Connecticut Department of Public Utility Control (as of July 1, 2011 known as the Connecticut Public Utilities Regulatory Authority, Connecticut Department of Energy and Environmental Protection) for a study on Guidelines for the Development of a Strategic Plan for Accessibility to Broadband Services in Connecticut
- \$137,562 from the Connecticut Energy Advisory Board for a study on Advances in Nuclear Power Technology.
- \$55,158 from the Connecticut Office of Policy and Management for the project Energy Assurance Planning, Capabilities and Resources.
- \$16,700 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.
- \$16,940 from the Connecticut Department of Public Utility Control for the development of an Enhanced Real-Time Air Quality/Energy Report.
- \$13,785 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.
- \$7,888 from the Connecticut Department of Transportation for a study on Environmental Mitigation Alternatives for Transportation Projects in Connecticut.
- \$7,129 from the Connecticut Department of Transportation for a study on Alternative Methods for Safety Analysis and Intervention for Use by ConnDOT for Contracting Vehicles and Drivers for Transportation Projects and Services.
- \$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.

PATRONS

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 2011 was \$21,046 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 2011. 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 Economic Resource Center
Connecticut Technology Council
Nufern
Sonics and Materials, Inc.
TRC Environmental Corporation, Inc.
United Technologies Research Center
University of Bridgeport
University of Connecticut Health Center
University of Connecticut School of Engineering
Westinghouse Electric Company
Yale University School of Medicine
Yale University

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.

The *Bulletin*'s editorial staff includes Martha Sherman, Managing Editor, and Executive Editors: Academy Members Dr. Phillip J. Gardner, 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:

- About CASE
- The *Bulletin*
- In the Press
- Publications
- 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

CONNECTICUT MEDALS OF SCIENCE AND TECHNOLOGY

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; William C. Stwalley, Board of Trustees Distinguished Professor and Head, Physics Department, University of Connecticut, 2005; Michael P. Snyder, Lewis B. Cullman Professor of Molecular, Cellular and Developmental Biology, Professor of Molecular Biophysics and Biochemistry and Director of the Yale Center for Genomics and Proteomics, Yale University, 2007; and Robert R. Birge, Harold S. Schwenk, Sr., Distinguished Chair in Chemistry, University of Connecticut, 2009.

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; Gene Banucci, Founder and Chairman, ATMI, Inc., 2006; Tso-Ping Ma, Raymond John Wean Professor of Electrical Engineering, Yale University, 2008; and Jonathan M. Rothberg, Chairman, CEO and Founder, Ion Torrent™, 2010.

2011 Connecticut Medal of Science

Steven L. Suib, PhD

*Board of Trustees Distinguished Professor and
Department Head
Chemistry Department
University of Connecticut*

Growing up in rural northwestern New York State, Steven Suib was introduced to the natural world by his father, an entomologist, as they canoed remote areas and collected butterflies



Steven L. Suib

or waited into the darkness of night to photograph moths. His earliest introduction to chemistry took place in the family's garage, where he mixed formulas for his father's pest control business.

Suib has spent most of his career at the University of Connecticut, where he has led the chemistry department for the last ten years. His work focuses on catalysis and materials science and involves the synthesis of novel porous semiconductors used to make new chemicals for use in lithium batteries, oil spills, and other applications.

The central question Dr. Suib asks is, "Can we make materials that no one else has made using relatively simple materials?" In his quest, Suib and his team are investigating the creation of synthetic fuels using carbon dioxide—a greenhouse gas—and water, research that could contribute to both reduced greenhouse gases and the development of alternative energy sources. His research team is working closely with VeruTEK Technologies, Inc., a Connecticut company, to clean up contaminated industrial and commercial properties and landfills using microemulsion catalysis that converts hazardous and toxic compounds into harmless materials. Dr. Suib's other current research involves synthesizing high temperature ceramic fiber composites used for aircraft engine parts.

Over the years, Suib has collaborated with industrial researchers in Connecticut such as United Technologies Research Center, Pratt and Whitney, Hamilton Standard, Olin, Yardney Technical Products, Pfizer, ATM, APSI, Rogers Corporation, Uniroyal, Crompton and others. He is also the Head of the Pratt Center of Excellence in Ceramic Chemistry. Dr. Suib has supervised more than 100 PhD students, and among these, nearly 50 serve in research positions in Connecticut industries.

Suib graduated from the State University of New York at Fredonia with a double major in geology and chemistry. He earned a PhD in chemistry at the University of Illinois at Champaign Urbana, and completed coursework equivalent to a master's degree in geology. He holds nineteen US patents and his work has been honored with national awards from the American Chemical Society and the American Institute of Chemists.

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

SPECIAL ACTIVITIES

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 25, 2011. 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 2011 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.

Marina Kaneko, Greenwich High School, Greenwich, CT
2011 Connecticut Science Challenge – 1st Place

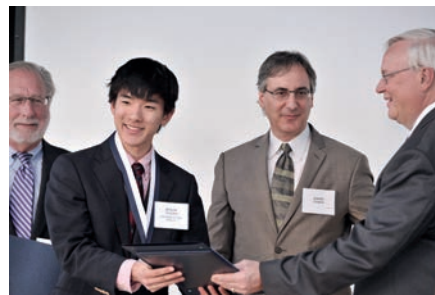
Project Title: *Spectroscopic Modeling of Ergothioneine as a UV Dermal Protectant*

Swathi Krishnan, Rye Country Day School, Rye, NY
Connecticut Science Fair – 1st Place, Life Sciences – Senior Division

Project Title: *Development and Characterization of a Novel Listeria-Caspase-3 DNA Vaccine to Eradicate Metastatic Breast Cancer*

Ryota Ishizuka, Greenwich High School, Greenwich, CT
Connecticut Science Fair – 1st Place, Physical Sciences – Senior Division

Project Title: *Optimization of a Microbial Fuel Cell Structure to Drive a Bioelectrochemically-Assisted Wastewater Treatment Reactor*



Top, Gerber Medal winner Marina Kaneko is flanked by David Gerber, son of H. Joseph Gerber at left, and CASE President Gale F. Hoffnagle, right.

Middle: From left, CCAT President Elliot Ginsberg, Gerber Medal Winner Swathi Krishnan, David Gerber, and Gale Hoffnagle.

Bottom: From left, Elliott Ginsberg, Gerber Medal Winner Ryota Ishizuka, David Gerber and Gale Hoffnagle. ((Photos: Al Malpa)

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, 1,744 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 nine students from Connecticut, eight of whom participated in the Connecticut Science Challenge. Each of Connecticut's Intel semifinalists and their respective schools received awards of \$1,000.

The 2011 Connecticut Science Challenge first place winner was **Marina Kaneko** of Greenwich High School, for her project, *Spectroscopic Modeling of Ergothioneine as a UV Dermal Protectant*. She was also a winner of the H. Joseph Gerber Medal of Excellence. (Please see the H. Joseph Gerber Medal of Excellence on page 23 for a listing of the winners of this award.)

Second place honors, which included a \$500 award from the Academy, went to national finalist **Joshua M. Greenberg** of Staples High School, Westport, CT, for his project *An Approach to Treating Sensorineural Hearing Loss through the Identification and Characterization of Mechanosensory Hair Cell Progenitors in the Zebrafish Lateral Line*

An honorable mention, which included an award of \$250 from the Academy, went to **Rachel A. Myers** of Staples High School, Westport, CT, for her project *Computational Investigation of Astrophysical Nuclear Reaction Rate Dominance*.

Connecticut Science Fair

The 2011 Connecticut Science Fair was held in March at Quinnipiac College in Hamden.

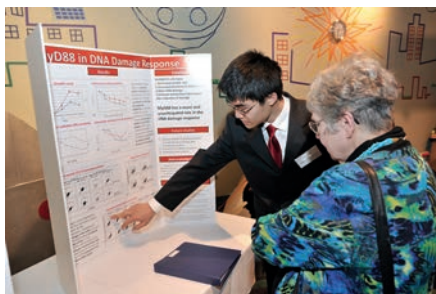
To promote interest in science and engineering, and to recognize those high school students whose science projects are judged to be the best of the senior division in each of the two major categories, Life Sciences and Physical Sciences, the Academy provides special awards each year to the top two winners 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 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.

The 2011 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:



Top, Connecticut Junior Science and Humanities Symposium 3rd Place Winner Bonnie Hawkins discusses her project with CASE member Donald Aylor.

*Bottom, Connecticut Junior Science and Humanities Symposium (JSHS) winner Yiyuan Hu discusses his project with CASE member Sara Rockwell.
(Photos: Al Malpa)*

1st Place, **Yiyuan Hu**, Hamden High School, Hamden, CT

Topic: *Role of MyD88 in DNA Damage Response*

2nd Place, **Swathi Krishnan**, Rye Country Day School, Rye, NY

Topic: *Development and Characterization of a Novel Listeria-Caspase-3 DNA Vaccine to Eradicate Metastatic Breast Cancer*

3rd Place, **Bonnie Hawkins**, Hamden High School, Hamden, CT

Topic: *Protein Engineering of NPP4 into NPP2*

4th Place, **John Solder**, Staples High School, Westport, CT

Topic: *KCNQ Channels in Prefrontal Pyramidal Neurons: A Novel Target for Cognitive Enhancement*

5th Place, **Andrew Mauboussin**, Darien High School, Darien, CT

Topic: *Differentiating Skill and Luck in Financial Markets with Streaks*

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



Connecticut Invention Convention winner Heidi Martinez explains her Handi Helper cane holder to CASE member Arthur Dubois and Robin Dubois. (Photos: Al Malpa)

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 2011, the Academy recognized the 15 middle school student winners of the Invention Convention with Certificates of Recognition and monetary awards (\$100 US Savings Bonds).

The thirty-sixth Annual Meeting and Dinner of the Academy was held May 25, 2011, at the Stepping Stones Museum for Children in Norwalk. 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 in the museum's galleries during the event's reception. During dinner, the thirty-five newly elected members of the Academy were recognized.

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 on "Advances in Nuclear Power Technology" that was delivered by Academy member Dr. Regis A. Matzie, Executive Consultant, Westinghouse Electric Company. Dr. Matzie was previously Senior Vice President and Chief Technology Officer for Westinghouse from 2001-2009. Matzie's career has been devoted primarily to the development of advanced nuclear power systems and advanced fuel cycles and he is the author of more than 120 technical papers and reports on these subjects.



CASE member Regis A. Matzie, retired Senior Vice President and Chief Technology Officer of Westinghouse Electric Company, addresses the 36th Annual Meeting of the Academy on May 25, 2011 on Advances in Nuclear Power Technology. (Photo: Al Malpa)

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 Economic Resource Center
Connecticut Technology Council
Nufern
Sonics & Materials, Inc.
TRC Environmental Corporation, Inc.
United Technologies Research Center
University of Bridgeport
University of Connecticut Health Center
University of Connecticut School of Engineering
Westinghouse Electric Company
Yale School of Medicine
Yale University



CASE President Gale Hoffnagle addresses attendees at the 36th Annual Dinner at Stepping Stones Museum for Children in Norwalk. (Photo: Al Malpa)

**CONNECTICUT ACADEMY OF SCIENCE
AND ENGINEERING, INCORPORATED**

Financial Statements

**YEAR ENDED JUNE 30, 2011
(with comparative totals for 2010)**

CONNECTICUT ACADEMY OF SCIENCE
AND ENGINEERING, INCORPORATED

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INDEPENDENT AUDITOR'S REPORT

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
Rocky Hill, Connecticut

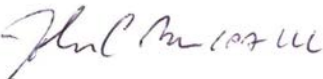
I have audited the accompanying statement of financial position of the Connecticut Academy of Science and Engineering, Incorporated (Academy) as of June 30, 2011 and the related statements of activities, cash flows, and functional expenses for the year then ended. These financial statements are the responsibility 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, 2011, 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, 2010 and for the year ended June 30, 2010, 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, 2010, was expressed.

In accordance with Government Auditing Standards, I have also issued my report dated September 28, 2011, 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
September 28, 2011

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jcburnsepa@aol.com

STATEMENT OF FINANCIAL POSITION

CONNECTICUT ACADEMY OF SCIENCE AND ENGINEERING INCORPORATED

STATEMENT OF FINANCIAL POSITION JUNE 30, 2011 (with comparative totals for 2010)

	<u>2011</u>
<u>ASSETS</u>	
Cash, Including Interest-Bearing Deposits of \$484,700 in 2011 and \$435,094 in 2010 (Note 3)	\$484,700
Accounts Receivable – Contracts (Note 2)	1,905
Unbilled Amounts Earned Under Contracts (Note 2)	135,985
Prepaid Expenses	9,153
Other Assets	380
Furniture and Equipment, Net of Accumulated Depreciation of \$8,632 in 2011 and \$33,240 in 2010 (Note 2)	<u>3,985</u>
TOTAL ASSETS	<u><u>\$636,108</u></u>
<u>LIABILITIES AND NET ASSETS</u>	
<u>LIABILITIES</u>	
Accounts Payable and Accrued Expenses	\$77,414
Contract Revenue Received in Advance (Notes 2 and 5)	<u>63,051</u>
TOTAL LIABILITIES	<u>140,465</u>
<u>NET ASSETS (Notes 2 and 6)</u>	
<u>Unrestricted:</u>	
Board Designated	39,475
Undesignated	<u>363,965</u>
TOTAL UNRESTRICTED NET ASSETS	403,440
<u>Temporarily Restricted:</u>	<u>92,203</u>
TOTAL NET ASSETS	<u>495,643</u>
TOTAL LIABILITIES AND NET ASSETS	<u><u>\$636,108</u></u>

See notes to financial statements

STATEMENT OF ACTIVITIES

CONNECTICUT ACADEMY OF SCIENCE AND ENGINEERING INCORPORATED

STATEMENT OF FINANCIAL POSITION YEAR ENDED JUNE 30, 2011 (with comparative totals for 2010)

	2011			2010 <u>Total</u>
	Unrestricted	Temporarily Restricted	Total	
<u>Revenues and Other Support</u>				
Contracts (Note 5)	\$492,842	\$0	\$492,842	\$506,955
Contributions (Note 2)	25,416	13,755	39,171	36,425
Membership Dues	25,940	0	25,940	24,020
Interest Income	3,409	908	4,317	4,187
Report Fees and Miscellaneous Income	591	0	591	20
Contributed Services (Note 2)	9,671	0	9,671	22,002
	557,869	14,663	572,532	593,609
Total				
<u>Net Assets Released from Restrictions (Notes 2 and 6):</u>				
Satisfaction of Program Restrictions	5,732	(5,732)	0	0
	563,601	8,931	572,532	593,609
Total Revenues and Other Support				
<u>Expenses (Note 2):</u>				
<u>Program Services:</u>				
Publications	31,458	0	31,458	31,243
Technical Guidance and Information	351,974	0	351,974	266,605
Awards	10,644	0	10,644	8,274
	394,076	0	394,076	306,122
Total Program Services				
<u>Support Services:</u>				
Management and General	176,232	0	176,232	180,069
Fund Raising	276	0	276	289
	176,508	0	176,508	180,358
Total Support Services				
	570,584	0	570,584	486,480
Total Expenses				
Change in Net Assets	(6,983)	8,931	1,948	107,129
Net Assets at Beginning of Year	410,423	83,272	493,695	386,566
	\$403,440	\$92,203	\$495,643	\$493,695
Net Assets at End of Year				

See notes to financial statements

STATEMENT OF FUNCTIONAL EXPENSES

CONNECTICUT ACADEMY OF SCIENCE AND ENGINEERING INCORPORATED

STATEMENT OF FUNCTIONAL EXPENSES YEAR ENDED JUNE 30, 2011 (with comparative totals for 2010)

	PROGRAM SERVICES			2011
	Publications	Technical Guidance & Information	Awards	Total Program Services
Professional Services	\$23,017	\$314,942	\$1,591	\$339,550
Professional Services – In-Kind (Note 2)	0	9,671	0	9,671
Employee Benefits	1,153	14,251	278	15,682
Rent and Parking (Note 7)	748	1,496	0	2,244
Office Expenses	655	1,593	0	2,248
Insurance	186	372	0	558
Travel and Subsistence	0	6,763	0	6,763
Council Activities	0	0	0	0
Membership Activities	0	0	0	0
Awards and Prizes	0	0	8,775	8,775
Printing	5530	2,547	0	8,077
Total Expenses before Depreciation	31,289	351,635	10,644	393,568
Depreciation (Note 2)	169	339	0	508
Total Expenses	\$31,458	\$351,974	\$10,644	\$394,076

See notes to financial statements

STATEMENT OF FUNCTIONAL EXPENSES

CONNECTICUT ACADEMY OF SCIENCE AND ENGINEERING INCORPORATED

STATEMENT OF FUNCTIONAL EXPENSES YEAR ENDED JUNE 30, 2011 (with comparative totals for 2010)

<u>SUPPORT SERVICES</u>				
<u>Management & General</u>	<u>Fund Raising</u>	<u>Total Support Services</u>	<u>2011 Total Program & Support</u>	<u>2010 Total</u>
\$107,512	\$0	\$107,512	\$447,062	\$357,694
0	0	0	9,671	22,002
14,880	0	14,880	30,562	27,523
7,972	187	8,159	10,403	11,322
14,058	0	14,058	16,306	13,469
1,721	47	1,768	2,326	2,192
3,555	0	3,555	10,318	5,828
4,042	0	4,042	4,042	3,768
19,736	0	19,736	19,736	20,865
0	0	0	8,775	6,503
<u>1,190</u>	<u>0</u>	<u>1,190</u>	<u>9,267</u>	<u>13,004</u>
174,666	234	174,900	568,468	484,170
<u>1,566</u>	<u>42</u>	<u>1,608</u>	<u>2,116</u>	<u>2,310</u>
<u>\$176,232</u>	<u>\$276</u>	<u>\$176,508</u>	<u>\$570,584</u>	<u>\$486,480</u>

See notes to financial statements

STATEMENT OF CASH FLOWS

CONNECTICUT ACADEMY OF SCIENCE AND ENGINEERING INCORPORATED

STATEMENT OF CASH FLOWS YEAR ENDED JUNE 30, 2011 (with comparative totals for 2010)

	<u>2011</u>
<u>Cash Flows from Operating Activities</u>	
Change in Net Assets	\$ 1,948
Adjustments to Reconcile Change in Net Assets to	
<u>Net Cash Provided by (Used) in Operating Activities:</u>	
Depreciation	2,116
<u>Change In:</u>	
Accounts Receivable - Contracts	90,009
Unbilled Amounts Earned Under Contracts	(90,924)
Prepaid Expenses and Other Assets	(779)
Accounts Payable and Accrued Expenses	34,465
Contract Revenue Received in Advance	<u>13,726</u>
Total Adjustments	<u>48,613</u>
Net Cash Provided by (Used in) Operating Activities	<u>50,561</u>
<u>Cash Flows from Investing Activities</u>	
Additions to Furniture and Equipment	<u>(955)</u>
Net Cash Used in Investing Activities	<u>(955)</u>
Net Increase in Cash	49,606
Cash - Beginning of Year	<u>435,094</u>
Cash - End of Year	<u>\$ 484,700</u>

See notes to financial statements

NOTES TO FINANCIAL STATEMENTS

CONNECTICUT ACADEMY OF SCIENCE AND ENGINEERING, INCORPORATED

NOTES TO FINANCIAL STATEMENTS

JUNE 30, 2011

(with comparative totals for 2010)

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 \$39,475 and \$33,725 of unrestricted net assets for the Academy's Endowment for the years ended June 30, 2011 and 2010, respectively.

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.

CONNECTICUT ACADEMY OF SCIENCE
AND ENGINEERING, INCORPORATED

NOTES TO FINANCIAL STATEMENTS

JUNE 30, 2011

(with comparative totals for 2010)

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:

	<u>2011</u>	<u>2010</u>
Professional Services	\$9,671	\$22,002

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

CONNECTICUT ACADEMY OF SCIENCE
AND ENGINEERING, INCORPORATED

NOTES TO FINANCIAL STATEMENTS
JUNE 30, 2011
(with comparative totals for 2010)

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, Unbilled Amounts Earned Under 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, 2011 and 2010 are deemed collectible.

Unbilled amounts earned under contracts consist of fees earned on contracts in progress, but not yet billed. Contract amounts considered earned are recognized as revenue when the work is performed.

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.

Functional Expenses (continued)

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.

CONNECTICUT ACADEMY OF SCIENCE
AND ENGINEERING, INCORPORATED

NOTES TO FINANCIAL STATEMENTS

JUNE 30, 2011

(with comparative totals for 2010)

NOTE 2 - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

(continued)

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 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, 2011 and 2010, cash balances at banks covered by FDIC insurance aggregate \$482,232 and \$435,094, respectively and amounts not insured aggregated approximately \$164,865 and \$123,177, 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 \$5,290 and \$5,058 for the years ended June 30, 2011 and 2010, respectively.

NOTE 5 - CONTRACT ARRANGEMENTS AND SUBSEQUENT FUNDING RISKS

During the years ended June 30, 2011 and 2010 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 \$558,089 and \$582,522 during the years ended June 30, 2011 and 2010, respectively

Future similar operations beyond June 30, 2011 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).

CONNECTICUT ACADEMY OF SCIENCE
AND ENGINEERING, INCORPORATED

NOTES TO FINANCIAL STATEMENTS
JUNE 30, 2011
(with comparative totals for 2010)

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

Contracts, accounts receivable – contracts and contract revenue as of and for the year ended June 30, 2011 consisted of the following:

<u>Agency</u>	<u>Accounts Receivable- Contracts</u>	<u>Unbilled Amounts Earned Under Contracts</u>	<u>Contract Rev. Year End June 30, 2011</u>
Connecticut Center for Advanced Technology	\$0	\$0	\$3,000
Connecticut Department of Public Health	0	0	16,700
Connecticut Department of Public Utility Control	0	9,339	246,300
Connecticut Department of Transportation	0	0	33,622
Connecticut Energy Advisory Board	0	81,600	137,562
Connecticut Office of Policy and Management	1,405	45,046	55,158
Connecticut Science Center	500	0	500
Totals	<u>\$1,905</u>	<u>\$135,985</u>	<u>\$492,842</u>

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 \$5,732 and \$3,082 for the years ended June 30, 2011 and 2010, respectively. At June 30, 2011 and 2010, net assets of \$92,203 and \$83,272, respectively, were temporarily restricted.

Net assets temporarily restricted at June 30, 2011 consisted of \$64,036 and \$28,167 for the Endowment and Student Awards, respectively. Net assets temporarily restricted at June 30, 2010 consisted of \$57,421 and \$25,851 for the Endowment and Student Awards, respectively.

CONNECTICUT ACADEMY OF SCIENCE
AND ENGINEERING, INCORPORATED

NOTES TO FINANCIAL STATEMENTS
JUNE 30, 2011
(with comparative totals for 2010)

NOTE 7 - OPERATING LEASE OBLIGATIONS

The Academy leases office space and office equipment under various noncancelable operating leases. Operating lease expense amounted to \$11,307 and \$10,531 for the years ended June 30, 2011 and 2010, respectively.

The following is a schedule by years of future minimum rentals under the leases at June 30, 2011:

Year Ending June 30:	
2012	\$5,858
2013	3,908
2014	1,958
2015	1,306

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

Independent Auditor's Report

Council of the Academy
Connecticut Academy of Science
and Engineering, Incorporated
Rocky Hill, 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, 2011, and have issued my report thereon dated September 28, 2011. 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.

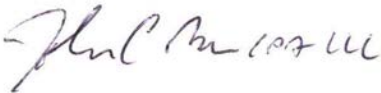
524 MIDDLE STREET • BRISTOL, CONNECTICUT 06010
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jcburnscpa@aol.com

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 deficiencies, 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, the Connecticut Department of Public Utility Control, the Connecticut Department of Public Health, 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.

A handwritten signature in dark ink, appearing to read "John C Burns CPA, LLC". The signature is written in a cursive, flowing style.

John C Burns CPA, LLC
September 28, 2011

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

Independent Auditor's Report

Council of the Academy
Connecticut Academy of Science
and Engineering, Incorporated
Rocky Hill, 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, 2011. 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 compliance 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, 2011.

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.

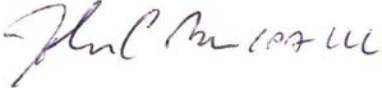
A deficiency in internal control over compliance exists when the design or operation of a control over compliance does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct, noncompliance with a type of compliance requirement 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, 2011, and have issued my report thereon dated September 28, 2011. 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 Public Utility Control, the Connecticut Department of Public Health, 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.

A handwritten signature in dark ink, appearing to read "John C Burns CPA, LLC". The signature is written in a cursive, flowing style.

John C Burns CPA, LLC
September 28, 2011

SCHEDULE OF EXPENDITURES OF STATE FINANCIAL ASSISTANCE

CONNECTICUT ACADEMY OF SCIENCE SCHEDULE 1 AND ENGINEERING, INCORPORATED

SCHEDULE OF EXPENDITURES OF STATE FINANCIAL ASSISTANCE YEAR ENDED JUNE 30, 2011

State Grantor Pass - Through Grantor <u>Program Title</u>	State Grant Program Identification <u>Number</u>	<u>Expenditures</u>
Connecticut Department of Public Utility Control Development of an Enhanced Real-Time Comprehensive Air Quality/Energy Report	None (Note A)	\$ 16,940
Strategic Plan for Accessibility to Broadband Services In Connecticut	None (Note A)	229,360
Connecticut Department of Public Health Review of grants-in-aid for biomedical research	None (Note A)	16,700
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)	13,785
Truck Safety Study	None (Note A)	7,129
Environmental Mitigation Alternatives for Transportation Projects in Connecticut	None (Note A)	7,888
General Additional Services	None (Note A)	4,820
Connecticut Energy Advisory Board A Study of Advances in Nuclear Power Technologies	None (Note A)	137,562
Connecticut Office of Policy and Management A Study of Connecticut Energy Assurance Planning, Capabilities, and Resources	None (Note A)	<u>55,158</u>
Total State Financial Assistance		<u>\$489,342</u>

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

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, 2011

NOTE A - GENERAL

State of Connecticut funding is provided from the Connecticut Department of Public Utility Control, the Connecticut Department of Public Health, 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, Personal Service Agreement and letters of agreement 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.

SCHEDULE OF FINDINGS AND QUESTIONED COSTS

CONNECTICUT ACADEMY OF SCIENCE AND ENGINEERING, INCORPORATED

SCHEDULE OF FINDINGS AND QUESTIONED COSTS YEAR ENDED JUNE 30, 2011

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:

<u>State Grantor and Program</u>	<u>State Grant and Program Identification Numbers</u>	<u>Expenditures</u>
Connecticut Department of Public Utility Control: Development of a Strategic Plan for Accessibility To Broadband Services in Connecticut	None (Note A)	\$ 229,360
Connecticut Energy Advisory Board through Office of Policy and Management A Study of Advances in Nuclear Power Technologies	None (Note A)	\$ 85,562
<ul style="list-style-type: none"> • Dollar threshold used to distinguish between type A and type B programs 		100,000

SECTION II - 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

2011

- Guidelines for Development of a Strategic Plan for Accessibility to Broadband Services in Connecticut (released 12/30/2011)
- Advances in Nuclear Power Technology (released 10/26/2011)

2010

- Environmental Mitigation Alternatives for Transportation Projects in Connecticut
- The Design-Build Contracting Methodology for Transportation Projects: A Review of Practice and Evaluation for Connecticut Applications
- Peer Review of an Evaluation of the Health and Environmental Impacts Associated with Synthetic Turf Playing Fields

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

- Study of Radiation Exposure from the Connecticut Yankee Nuclear Power Plant

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