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*Training and Education Center for  
Semiconductor Manufacturing  
and Alternative and Renewable Technologies*

House Subcommittee on Higher Education, Lifelong Learning, and  
Competitiveness

Committee on Education and Labor

***“New Innovations and Best Practices Under the  
Workforce Investment Act”***

Hearing: March 23, 2009, 10:00am  
New York State Education Building  
Albany, New York

Testimony Given by:

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Semiconductor Manufacturing,  
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Mr. Chairman, Congressman Tonko, Members of the Committee, it is a pleasure to provide testimony to you regarding “*New Innovations and Best Practices Under the Workforce Investment Act.*”

The timing couldn't be better to talk about what's happening at the higher education level regarding “Green Collar” jobs and the role Community College's can play (and are playing) in support of the Workforce Investment Act.

### ***The Case for Workforce Training at Community Colleges***

As a former Journeyman Electrician who was trained through the International Brotherhood of Electrical Workers, I've devoted the last three decades of my life to workforce training at Hudson Valley Community College; first as a Professor, then as a Department Chair, and now as the Executive Director of the College's renewable energy training center. I feel strongly about the positive impact our college alone has had on the Capital Region community regarding job placement, and I've witnessed other community college's having a similar impact within their respective regions.

One of the main objectives of a community college is to be responsive to the educational needs of adult learners, displaced workers, returning veterans, and disadvantaged youths. This is achieved by providing services and vocational training that will develop independent and confident learners, as well as life skills. There's no question that community colleges are best suited to serve this mission. In fact, community colleges could be viewed as the “Swat Team” for workforce training because of their ability to provide rapid deployment of customized courses and services to address the employment needs of the community.

As our national economy continues to experience a major transformation, the need to aggressively re-tool our workforce has never been more paramount, and community colleges should be the epicenters for making this happen. Currently, there are 1,166

community colleges nationwide, and most offer workforce development type training. Moreover, numerous community colleges have a Workforce Development “Center” that often provides a one-stop system for easy access. With the ability to offer flexible training schedules, on-line courses, credit and non-credit courses, workshops, certificate programs, and degree programs, community colleges can quickly manage the challenges ahead and respond to learner needs in a rapidly changing environment. The Workforce Investment Act should ensure that local Workforce Investment Boards provide for community college representation.

As a Department Chair with oversight of numerous vocational training programs I’ve had the opportunity to work with Workforce Investment Boards for the purpose of retraining displaced workers. I’ve witnessed first-hand the value of the Workforce Investment Act (WIA) and the role it’s played in improving the lives of many. Yet, I’ve also found that the administrative complexities associated with aligning training programs and individual benefits to be challenging. Depending on individual needs, effective, high quality job training and education can take anywhere from two weeks to upwards of two years. Aligning flexibility in benefits to mirror training programs will greatly improve completion of training and a better chance of leading to a “living wage.” For example: if a displaced unskilled worker needs a two-year vocational training program to become successful, and was displaced at a time of the year where such training was offered, but the training program already started, it precluded the worker from starting. Often benefits would “run-out” before the worker could complete the training since the worker had to wait until the next training cycle. The Workforce Investment Act should focus on helping workers through the entire training process.

### ***Green Collar Jobs and the Community College***

As our nation continues to advance Clean Energy and Energy Efficiency programs with ambitious goals, the need to develop a Green Collar workforce has brought about a new sense of urgency, and community colleges have been rallying to the cause. Hudson Valley Community College, for example, has been providing photovoltaic (PV) training for three years, and is recently training students in geothermal technology as well. In fact,

it should be noted that Hudson Valley Community College's model for photovoltaic training has received national attention for its three-pronged delivery that meets the needs of all constituents. So much so that Jane M. Weissman, Executive Director, Interstate Renewable Energy Council and Vice-Chair, North America Board of Certified Energy Practitioners, has stated, "The photovoltaic course programs at Hudson Valley Community College are national models for other educational providers across the country. Combining class-room instruction based on strong electrical curriculum, coupled with an extensive laboratory plus on-site training opportunities, have positioned Hudson valley as a leader in photovoltaic training. They have clearly demonstrated their ability to produce high-end instruction for a strong renewable energy workforce." Furthermore, Jerry Ventre, Engineering Consultant and Former Director of the Photovoltaics and Distributed Generation Division of the Florida Solar Energy Center stated: "In a relatively short time, Hudson Valley Community College has established itself as a clear leader in photovoltaic training in the U.S. They have extremely well designed course offerings, highly qualified faculty, excellent relationships with industry, outstanding facilities, and strong institutional support. And, most importantly, they provide their students with the proper combination of classroom activities, hands-on training in the laboratory and on-the-job experience with actual photovoltaic system installations in the field." While Hudson Valley Community College is a forerunner in Clean Energy and Energy Efficiency training, many other community colleges have demonstrated their ability to "ratchet-up" their training programs and offer similar "green" technology skills. All across the country community colleges are beginning to re-tool their trainers who can provide the green collar workforce training that would be supported under the Workforce Investment Act.

### ***Best Practices***

The success of Hudson Valley Community College's (PV) programs lies in the multi-pronged approach to training, ensuring access to any and all who seek such skills: (1) the 40 hour introduction to photovoltaic installation non-credit course offers access to those who demonstrate some existing construction and/or manufacturing skills and want to

enter the PV installer industry. This could be a displaced worker, or someone seeking to enhance their skills in preparation for transitioning into renewable energy workforce. Upon completion of this course, students are eligible to take the Entry Level Certificate of Knowledge exam, which upon passing, awards them an entry level credential that is recognized by photovoltaic contractors, (2) the 19 credit Photovoltaic Installation Certificate program offers training to those who do not have any prior knowledge or skills, but seek to become a PV installer. This one year certificate can be completed in the evenings and weekend to provide flexibility to students, (3) Hudson Valley Community College also offers two credit courses in photovoltaic design and installation that is offered to students of the electrical Construction and Maintenance two-year degree program. Upon training completion, students will have multiple career paths thus ensuring that the size of the workforce does not out pace market demands, and visa-versa. Lastly, students of all three paths can enroll in the 40 hour non-credit “advanced PV installer training” course that prepares students to take the North American Board of Certified Energy Practitioners exam, which can lead to becoming a “Certified” PV Installer.

Hudson Valley Community College has partnered with the New York State Energy Research and Development Authority (NYSERDA) to expand such programs across New York State. In fact, I’ve had the pleasure of working with Congressman Tonko, who at the time was President of NYSERDA and understood the value of this training, which he supported 100%. With a combined vision to expand such training, Hudson Valley Community College and NYSERDA collaborated to provide a geographic “blanket” of green collar training across New York State by networking with other community colleges eager to provide similar training at their institutions. This training model is an offshoot of NYSERDA’s *New York Energy \$mart Residential Program* that, again, with Hudson Valley Community College serving as the lead institution, established a statewide network of community colleges for energy efficiency training programs as well. By 2010 the energy efficient training programs will have trained a few thousand people across New York State. Hudson Valley Community College has created a

paradigm for green collar training that, with the right resources, can be replicated across the country.

To further facilitate best practices in green collar job environment a: Renewable Energy & Energy Efficiency Workforce Education National Conference was sponsored by NYSERDA and organized by the Interstate Renewable Energy Council (IREC), Partnership for Environmental Technology Education (PETE) and Hudson Valley Community College was held in November 2006 at Hudson Valley Community College. It was the first national conference on workforce education for the renewable energy and energy efficiency trades and industries. The event was an opportunity for educational providers and faculty at Technical High Schools, Community Colleges, four-year Schools and other training programs to learn about best practices and effective approaches to teaching renewable energy and energy efficiency workforce skills. The conference attracted over 250 educators from 34 states and six countries, and was held over a three day period. The second national conference was again held at Hudson Valley Community College and attracted over 350 people from across the country and world. The audience again was community colleges, technical high schools, labor and apprenticeship programs, industry, government agencies and others who are planning to start or are providing practitioner training for the renewable energy and energy efficiency industries. Sessions focused on some of the critical workforce topics such as jobs and how to prepare for workforce needs; how to create Vocational High School Trade Program to Community College to four-year College articulation agreements; model solar energy, wind energy, energy efficiency, geothermal curricula and programs; and how to integrate energy efficiency and renewable energy into other trades on campus. Other important areas covered included industry-based task analysis certification and training standards; establishing successful business and industry advisory committees; conducting local job market assessments; and creating hands-on renewable energy laboratories. The third national conference, being held in November 2009 in Albany, New York, will offer the most current information on instructional strategies, curricula development, and best practices for training in the renewable energy and energy efficiency fields. It will address many of the jobs outlined in the green jobs initiatives being launched nationwide. Most of

the attendees are from community colleges seeking new and innovative ways to grow and improve their green collar practitioner training. The Workforce Investment Act should seek to become a partner for the National Conference to encourage stronger connections between workforce investment and green collar job training. The Workforce Investment Act should help local WIBs become more active in training programs by helping to facilitate articulation agreements that allow for seamless education from secondary and adult education to post-secondary education.

### ***Innovative Ideas***

Hudson Valley Community College is committed to training a green collar workforce and has taken a giant step towards enhancing its practitioner training initiatives. With the support of state funding, the College will be constructing a state-of-the-art training facility dedicated to green collar jobs. TEC-SMART (*Training and Education Center for Semiconductor Training, and Alternative and Renewable Technologies*) will have individual laboratories each dedicated to a specific green technology: photovoltaic, geothermal, large and small wind, alternative fuels, and semiconductor manufacturing. This facility will support many of the training initiatives mentioned earlier and serve the region, state and nation as the premiere resource for green collar training and education.

Through the TEC-SMART facility, Hudson Valley Community College will seek to work closely with local Workforce Investment Boards to offer training in myriad ways. For example, with the necessary WIA resources, the College would focus its energies by turning its attention to the returning veteran. The number of returning veterans continues to grow well past the half-million mark, and providing green collar job training to many makes sense in today's competitive economy. Through TEC-SMART, Hudson Valley Community College will also seek to provide "Train-the Trainer" programs to other community colleges to help accelerate the availability of green collar training programs whereby local WIBs across the Country can provide the necessary services returning veterans anticipate. Furthermore, by collaborating with four-year institutions such as

SUNY Stony Brook, the college could establish 2 + 2 programs that WIBs could support with a focus on higher-skilled, higher-wage green collar jobs.

Through TEC-SMART, and with the necessary WIA resources, Hudson Valley Community College will be able to provide upgraded training to low-income workers who seek to advance to a higher skilled green collar job. By working closely with local WIBs, the college can develop customized green collar training programs to meet the needs of the low-wage earner. In fact, another strength of a community college is its ability to effectively assess the academic skills of those seeking to upgrade their employment status and provide the services necessary to access training. Most community colleges have Learning Assistance Centers that help each worker's ability to succeed in training, and improve worker retention. There is nothing more daunting to a low-wage worker than to take up the practice of life-long learning, and there's no better place for them to have a feeling of accomplishment and achieve success than a community college. The Workforce Investment Act could help bridge that "disconnect."

### ***Non-Green Collar Jobs***

Many community colleges offer tremendous technology programs that have continued to provide training for "blue collar" jobs for decades. The importance of the WIA to continue to support these programs cannot be overstated. In fact, many of these "blue collar" programs provide a feeder system to green collar jobs. For example, most PV installers and wind technicians who hold the higher skilled positions within those respective "green collar" fields first received training in the electrical/electronic environment. Similarly, those seeking employment as a geothermal technician first gained valuable training in the HVAC/R environment. As the green technology job market continues to ebb and flow, those who are cross trained are most like to retain "living wage" jobs. The same could be said about alternative fuels.



## ***In Conclusion***

Community Colleges can and are providing the backbone for green collar jobs. It's critical that the reauthorization of the Workforce Investment Act recognizes the role Community Colleges play in workforce development training. The best practices I shared today can be implemented across the country with the right resources. Facilities like TEC-SMART can be instrumental in Train-the Trainer programs for other colleges and technical schools to ensure rapid deployment of training programs. Colleges like Hudson Valley Community College, who have learned to walk-the-walk regarding green collar training, can be active in helping other schools address the green collar work force needs of our nation.

Thank you Mr. Chairman, and Members of the Committee, for allowing me the opportunity to testify and share these observations and opinions with you.

## Joseph T. Sarubbi

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Joe Sarubbi, Executive Director, TEC-SMART; Hudson Valley Community College's "Training and Education Center for Semi-Conductor Manufacturing and Alternative and Renewable Technologies", has more than 35 years' experience in education and the electrical construction and maintenance industry, and has garnered a national reputation for the design and delivery of RE training programs.

In 2007, Mr. Sarubbi gave testimony at a hearing on Research, Education, and Training Programs to Facilitate Adoption of Solar Energy Techniques for the U. S. House of Representatives Subcommittee on Energy and Environment in Washington DC, and is frequently asked to present on "workforce development" and Renewable Energy "training programs" at national conferences.

Mr. Sarubbi was responsible for the design and delivery of photovoltaic installers programs at Hudson Valley Community College that is nationally recognized as the model program for other institutions to emulate. The programs include credit and non-credit courses, and a State University of New York Certificate Program.

In 2007, Mr. Sarubbi was part of a select group that went to Germany as part of a study tour to evaluate workforce development programs and policies for Solar and Wind Technologies.

Joe Sarubbi is a member of New York Governor Paterson's Green Collar Workforce Development Task Force Sub-Committee where discussions have focused on the Governor's commitment to solar and wind technology practitioner training. Mr. Sarubbi has been a vocal participant in the process and is further acquiring a reputation for a sound understanding of the design and delivery of clean energy training.

### **Professional Experience:**

#### **Executive Director, TEC-SMART,**

Hudson Valley Community College, Troy, NY (2/2008 – present)

- Manage a team of professionals for the design and delivery of credit and non-credit RE and EE courses, certificate programs, and workforce development training activities
- Forge strong relationships with business and industry
- Responsible for maintaining high quality training facilities
- Work closely with architects developing the TEC-SMART facility

#### **Department Chair, Building Systems Technology Department**

Hudson Valley Community College (8/20002– 2/2008)

- Provide leadership and guidance while managing a multi-program department including the: Electrical Construction and Maintenance Program, the Heating/Air Conditioning/Refrigeration Technical Services Program, and the Plant Utilities Technology Program
- Developed, coordinated, directed and implemented new programs that met the needs of industry and the community
- Fostered an excellent working environment that cultivated a team approach
- Initiated many new projects that advanced the department and benefited students
- Responsible for student advisement as well as mentoring faculty and staff
- Developed a strong relationship with Workforce Development and the Center for Careers and Employment which gave each educational program high visibility that lead to great job placement
- Responsible for scheduling, budgeting, planning and recruiting activities

**Department Chair**, Civil Engineering, Construction Technology, Electrical Construction and Maintenance Program, Heating/Air Conditioning/Refrigeration Technical Services, and Plant Utilities Technology Programs

Hudson Valley Community College (1/2000 – 8/2002)

- Assumed responsibility of a struggling department and increased student enrollment to capacity while improving faculty and staff morale
- Responsible for increasing course offerings and community outreach
- Initiated a faculty-student advisement program that received strong administrative recognition for its success
- Built strong Advisory Boards that provided excellent programmatic oversight
- Facilitated the reaccreditation of the Civil Engineering Program through TAC-ABET and the Construction Technology Program through ACCER
- Responsible for scheduling, budgeting, planning and recruiting activities

**Professor**, Electrical Construction and Maintenance Department

Hudson Valley Community College, Troy, NY (1/79 – present)

- Responsible for the design and construction of a world class industrial controls laboratory that has been touted as one of the best in the nation
- Redesigned the Residential and Commercial Construction Laboratories
- Proficient in curriculum and course development
- One of the main authors for the last two completed Electrical Construction and Maintenance program reviews
- Established numerous ties with business and industry, and developed customized training courses for many
- Actively involved in student advisement and job placement
- Co-developed several articulation agreements with secondary schools

**Program Coordinator**, Electrical Construction and Maintenance Department

Hudson Valley Community College, Troy, NY (8/95 – 12/98)

- Handled many of the “day to day” operations of the ECM Program
- Facilitated scheduling, budgeting, planning and recruiting activities.
- Provided quality student service and support
- Proven ability to work effectively with all administrative departments

**Chairperson**, Electrical Construction and Maintenance Program Committee (12/94 – 12/98)

- Provided leadership and guidance while working towards and achieving established goals for the year
- Arranged meetings, developed agendas, and kept meetings “on track”
- Committee activities included performing an occupational analysis, creating ECM recruitment packages, developing a student tracking system for retention purposes, establishing department goals, and completing program reviews

**Education:** **M.S. Education Administration and Policy Studies** (2004)  
SUNY at Albany

**B.S. Vocational Technical Education** (1983)  
SUNY Institute of Technology

**Journeyman’s Certificate**, International Brotherhood of Electrical Workers