

## **Women's Career Investment and the Returns: Career Benefits and Barriers in the 21st Century Green Economy**

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### **Abstract**

The key to building successful strategies as a higher education practitioner promoting 21st century green economy career awareness for women attending urban universities, demands advocating for benefits, and subverting potential barriers, to positively influence career choices. Women's career investment and returns increase when proper strategies are employed to address benefits and barriers embedded within urban university systems. There are five primary strategies involved. Develop internal constituents to : 1) partner with career services centers, science, engineering and urban colleges, faculty, staff and student organizations; 2) recruit external constituents from memberships in professional clubs and organizations, civic venues, forums, networking, seminars, workshops, conferences, business, and governmental organizations. Establish a network to engage students pursuing green careers with professionals; 3) provide opportunities for career development through cooperative, internship and experiential learning programs, mentoring, informational interviews, career fairs, job shadowing and placement activities; 4) design effective recruitment and marketing campaigns to attract students by incorporating savvy communication techniques to diminish barriers; 5) focus on advisement and counseling meetings, review concept and ideas to reach diverse women by establishing relationships with public relations and marketing departments, student newspapers and radio stations. Hold classroom presentations and investigate social networking sites.

### **Introduction**

Women issues and challenges have been at the forefront of history throughout the United States but has affected women living in every country, continent, nation and territory known and unknown to man. How do women then benefit from the career investment and returns of the 21<sup>st</sup> Century Green Economy if there are constant barriers imposed to annihilate and separate them to the point of exclusion? According to (Cato 2009) in identifying limitations placed on women she discusses how this points to a system characterized by a patriarchy possessing the majority of the resources which are controlled by men. Most of the world's women are poor, existing in a male dominated economy which has resulted in a situation where women form 70 percent of the world's poor and own only 1 percent of the world's assets (Amnesty International). Image what women owned during the 1800's given that obstacles were more prevalent with women based on them not having education and voting rights. During the 1800's it was "medical men who spread wrong beliefs about women and learning and that learning would adversely affect women's mentally, physically, and emotionally" and then (Breton 1998) on the other hand has done some rather remarkable and exciting research on women pioneers in the environmental movement and captures "aha moments" of women who persisted against the odds to achieve breakthroughs in

education, business, government and non- governmental organizations and movements. Much praise to be given her for such an impeccable work and the passion she exudes. One woman that she mentions in her book is Ellen Swallow who was coined the “first lady of environmental science.” She is the first lady of environmental science who was also denied teaching positions and worked in laboratories with no pay and had exemplary analytical and research skills and was later honored by a professor who did not believe she needed an education at Massachusetts Institute of Technology after completing studies at Vassar. She was eventually accepted and her research work involved working on water and sewage projects for the Massachusetts Board of Health. She later was deemed worthy to receive an honorary doctorate.

The key to building successful strategies as a higher education practitioner promoting 21<sup>st</sup> Century green economy career awareness for women attending urban universities, demands advocating for the benefits and subverting potential barriers to positively influence career choices. Five key strategies have been identified and played a major role in administering programming and planning for a “GoGreen Careers Roundtable” for students seeking environmental jobs in science, engineering and as policy managers and was used to provide illustrations for understanding how women’s career investment and returns increase when proper strategies are employed to address benefits and barriers that are embedded within urban university systems.

### **Develop internal constituents to partner with career services centers, science, engineering and urban colleges, faculty, staff and student organizations**

Cleveland State University developed a concept which helps to drive the mission of the university and that is student engagement. Student engagement must be foremost throughout the university to not only engage the students but internal constituents to partner with career services, science, engineering and urban colleges, faculty, staff and student organizations. It encompasses all levels of the university and student environment to facilitate a meaningful campus experience. As career professionals integrate this message into practice it becomes easier to develop programming for events such as the GoGreen Careers Roundtable: Environmental Jobs for Scientist, Engineers and Policy Managers. The event was held on Tuesday, October 20, 2009, 12:00 to 2:00 P.M. in the Fenn College of Engineering. It was planned during this time because it has been frequently been referred to as the common hour for students and faculty. The students and faculty typically have open time for participation in engaged activities.

Career Coordinators representing the Fenn College of Engineering, College of Science and Levin College of Urban Affairs in the Career Services Center initially set-up meetings with the Director of the Career Services Center to plan the roundtable. The Director and Managers had identified early on who would be the players in getting the required support. Some of the benefits of laying the foundation by building successful relationships and partnerships through collaboration resulted in attracting over 200 participants within a two month time period.

This was done by targeting departments who had a strong commitment to sustainability or green research, curriculum development, mentoring students, affiliations with professional organizations and memberships, providers of summer research experiences for undergraduate students, community and university involvement. “Diverse Issues in Education, published a Special Report Green Edition” with an article entitled “Converging Interests,” (Nance 2009) which validates institutions responding and especially those in academia to the promotion of converging related sustainable themes among departments.

Another rather similar statement was produced in the American College and University President’s Climate Commitment (ACUPCC) Annual 2008 Report. The (ACUPCC) seeks to obtain commitment from college and universities to incorporate sustainable curriculums, be role models and leaders in their communities for global warming emissions and conduct activities on the campus, and graduate students who will be pivotal in generations to come. It also emphasized the social, ethical and economic opportunities and benefits that will arise for students if they received the knowledge, skills and instruction necessary to meet the new demands of the century.

When proper communication channels were devised to attract not only the departments but the administrators, deans, faculty, staff and students who were women this resulted in massive response. First, the Deans of the Fenn College of Engineering, College of Science and Levin College of Urban Affairs were contacted by the respective Career Coordinators representing the departments. Normally, solid relationships can be developed through networking and attending events hosted by the colleges where they may be guest speakers including research days, seminars, engineering, science and urban roundtables.

This can make involvement in future events more likely to occur that are planned. Preferred faculty was selected for the “GoGreen Roundtable” by reviewing their research interest via websites especially those related to environmental sciences and engineering. According to research conducted by economist in the Occupational Outlook Quarterly, Summer 2009 issue of the U.S. Department of Labor “scientist and engineers have been involved in the environmental movement for a long time.” There are opportunities available especially for students who obtain bachelors and masters degree with an interest in areas focused on increasing air and water quality, improving energy efficiency, and sustaining natural resources. In May, 2008, environmental scientists held 80, 100 jobs and 45 percent worked in federal, state and local governments and made approximately \$65, 280.00.

To capture the interest of Administrators, Professors and Faculty it has been proven to be a good practice to use practical figures and quotes regarding careers to enhance enthusiasm considering if there is a passion for the topic. Professors with environmental interest similar to careers areas mentioned were invited via email with accompanying letters from the departments with the Dean of the College of Science Biological, Geological and Environmental Science, and Director of the Environmental Institute, Executive in Residence for Initiatives on Energy Policy and Social Change, Chemistry, Engineering, Mathematics and Physics Librarian. Additionally, Professors from the departments of the Levin College of Urban Affairs, Associate Dean of Urban

Planning and Environmental Studies and Director of Environmental Studies. Most of them were women which is a benefit.

Deitsche (2010) rectifies the importance of the government, urban planners and engineers in his perspective on the green economy in “Green Collar Jobs” and Environmental Careers in the 21<sup>st</sup> Century. “Many local governments are looking at low-impact ordinances and green building as ways to spur local economic development and to revive older urban cores. For planners, environmental engineers, and green building professionals, there are job opportunities.” (p.19). Potential Barriers were encountered but did not appear to have a bearing at the time. For instance, commitment does not always equate to interest in student career related activities, nor does student engagement, obtaining resources, materials, articles, journals and books focusing on green careers, securing departmental support for green initiatives if they are not viewed favorably, Professors and Faculty normally value monetary rewards associated with grants for research, sponsorships and fellowships.

Student organizations also played a significant role in “GoGreen Roundtable” and will be instrumental in the green economy. Two environmental students served as Co-Founders of the Student Environmental Movement and the Rooftop Garden Project. The Rooftop Garden Project was also featured on a local news station which was built on top of the recreation center. There were also participants from the Campus Sustainability Coalition, and the President of Cleveland State University’s Women in Engineering Society who talked about the benefits of joining professional organizations.

Some barriers for students as have been documented in research (Lopez and Yi 2006) states “career indecision is generally viewed as a serious problem characterized by the experience of high levels of uncertainty and anxiety regarding one’s career choices and by motivational difficulties with career goal-directed activity.”(p.29). Perhaps, this was case in terms of some students experiencing uncertainty and anxiety with coming to the roundtable if they were undecided about career choices in science, engineering and urban affairs or policy.

The scheduling of the roundtable; allotment of time between classes, attracting more women of color, getting more disciples involved across the university, funding and budgets, aligning the Career Services Center with other student organizations and groups, and coordinating meaningful classroom presentations will require further investigation.

**Recruit external constituents from memberships in professional clubs and organizations, civic venues, forums, networking, seminars, workshops, conferences, business, and governmental organizations.**

The idea of hosting the first ever “GoGreen Careers Roundtable became alive by attending similar events hosted by the Northern Ohio Council on Higher Education “Green Collar” Jobs Roundtable at Cuyahoga Community College’s Metropolitan campus and subsequently at the City of Club of Cleveland, Encouraging Women’s Participation in Green Jobs and Training: an Ohio Roundtable with Nancy Chen, Midwest Regional Administrator,

Women's Bureau of the U.S. Department of Labor. Both roundtables included professional from universities and colleges, business and industry, federal, state and local government representatives and entrepreneurs. Women who are pursuing careers in any science, engineering or urban field would find great contacts attending events like these to meet other women. And, those who may be experiencing difficulty understanding the new green economy. Several of the women decided to exchange business cards and were also included on distribution list for participants. However, there are women out there who could benefit from knowing about the money President Obama has made available for green jobs training in 2009 as a part of the American Recovery and Reinvestment Act and economic stimulus package totaling \$787 billion, \$40 billion has been directed toward environmental projects and green job training. And, over \$1 billion is for the green training activities and other amounts are in the form of huge tax incentives and rebates ( Deitsche 2010).

Job placement issues have become a grave barrier due to the nature of training included requiring specific skills sets in retrofitting, deconstruction, plumbing, Leadership in Energy and Environmental Design (LEED) certifications, renewable energy, clean air and water quality, solid waste disposal, recycling, fossil fuel, and understanding of carbon emission. There are some women who have been at the forefront of the green economy with training and who have understood the benefits of investing in their communities and business as entrepreneurs. Apprenticeship training is a needed in many of the areas and can be located at most community colleges. According to (Jones 2008) Majora Carter is the famed organizer and founder of the Sustainable South Bronx (SSBx), MacArthur Genius Award Winner who has discovered a solution for pollution with urban vegetation and the Sustainable South Bronx training and placement program called "Bronx Environmental Stewardship Training" better known as (B.E.S.T.). Another brilliant business minded entrepreneur is China's richest woman Zhang Yin, owner of Nine Dragons Paper in south China's Guangdong Province, who has made her estimated \$3 billion fortune recycling scrap paper imported from the United States (Makower 2009) and this can be attributed to the growing number of entrepreneurs in the green-economy who can be found in China, India and other developing markets.

Developing external partnerships are thus important to women gaining exposure to the green economy and seeking out opportunities which are aligned with their goals and expectations. The following partnerships were developed and continue to be based on the extent to which these employers desire to provide viable cooperative education, internships, mentoring experiences and job placement opportunities for students and are located throughout Northeast Ohio and who were featured employers on the panel as presenters for the "GoGreen Careers Roundtable:"

- Director of Social Responsibility and Public Affairs, Lubrizol; President of the Lubrizol Foundation
- Director of Ohio Solid Waste Association of North America
- Executive Director of Hard Hatted Women
- President of Energy Optimizers USA

- Vice President, Research and Educational Programs, Ohio Aerospace Institute
- President, Bold Alternatives
- Founder of Sustainable Rhythm
- President Green Energy Systems
- Principal, Great Lakes Design Collaborative
- Chief, Structural Systems Dynamic Branch, NASA Glenn Research Center
- Energy Manager, City of Cleveland Office of Sustainability
- Director of Energy Markets, Hull and Associates

Two Cleveland area schools were selected to participate based on previously established partnerships. The first one was MC2 STEM HUB, Cleveland Metropolitan School District and their Program Coordinator and the other was the award winning “blue ribbon” Horizon Science Academy and teachers. Both institutions were extended invitations because of the barriers perceived by students in general pursuing careers in STEM which ultimately is the result of lack of preparation and career awareness especially in urban communities.

This all could have not been possible without the support of talented professionals in the Career Services Center at Cleveland State University. Career Coordinators assisted with designing brochures, and bags with gifts made out of recycling paper purchased at Pat Catan’s. Certificates of achievements and awards were given to all featured guest speakers on the panel. Students and employers all enjoyed a great pizza luncheon along with dessert and refreshments.

**Establish a network to engage students pursuing green careers with professionals to provide opportunities for career development through cooperative, internship and experiential learning programs, mentoring, informational interviews, career fairs, job shadowing and placement activities**

The buzz word in industry, academia, business, government and non-governmental organizations is to network. Networking is vital for everyone in all walks of life. It is normally referred to as the “exchange” of information between two people who have a common interest and is seeking to learn something about the other individual in terms of profession, extra-curricular activities, social or personal activities. According to (Sharbek 2001) “Part of the process of surrounding yourself with good people includes networking. This can take place through friends, associates, organizations, and acquaintances.” “Networking can also yield new friends, contacts, information and resources.” (p. 197).

Most networking can take place in cooperative, internship and experiential learning programs for students. A rather usual internship was arranged by Holly Harland, who is the founder of E4S a networking group of Entrepreneurs for Sustainability in the Greater Cleveland area when she decided to tap into an opportunity to explore natural capitalism at the Rocky Mountain Institute in Colorado for part of the summer and decided to keep her job at Wire-Net (Tucker 2007). Many non-traditional students who are women have taken this path in addition to their studies due to financial and family reasons.

(Moss 2009) author of “Learn to Intern CEO Style” makes references to benefits and barriers he has faced while interning with FBI, NASA and working at the White House. He chronologically his experiences and includes some very awe inspiring lessons learned and is a student in the Levin College of Urban Affairs pursuing a career in Public Administration.

Mentoring relationships can be developed informally or formally. A study was conducted to investigate the importance of mentoring of African American women and explored how “mentoring has been identified as a factor leading to upward mobility in employment, success in education, and personal development” (Crawford and Smith 2005). Information interviews are recommended just so students can find out more about a given profession with a person who may be in the career you are seeking to pursue. Career Fairs are held at colleges and universities, community centers, and with business and other governmental related organizations. According to a study that was done conducted by (Perrone, Alexander and Sedlacek, 2001) where gender and ethnic differences in career goal attainment were examined agreed and explained “in addition to traditional academic and career counseling, other types of assistance should be made available (e.g. career fairs, workshops, computer-related computer programs).” Job shadowing can be set through career services centers, contacting key organizations directly and arranging the time. Job placement activities are offered to undergraduates, graduates and alumni at most career planning or service centers. Scheduling a meeting with a Career Coordinator, Counselor or Advisor to find out about resources and services should be planned well in advance of a student’s senior year.

### **Design effective recruitment and marketing campaigns to attract students to incorporate savvy communication techniques to diminish barriers**

Adapting to the new generation for the 21<sup>st</sup> Century requires incorporating savvy communication techniques to diminish barriers associated with students not being able to identify with careers in science, technology, engineering and science. Students have more of a propensity to use lap-top computers, blackberrys, listen to music on ipods with ear plugs, and come to class without a notebook than understand the technology behind the use. This does not mean they are not learning but have a different style of learning. They are also are more inclined to like lessons that have been prepared using PowerPoint.

The challenges and implications for most university and college marketing departments will be to make sure they reach diverse audiences including women through channels most likely to be identified for the green economy. Displaying diverse audiences especially in advertisements allows the students to perceive a sense of belonging at an institution. Substantiating this evidence was revealed in the literature reviews of (Ericksen and Schultheiss, 2009) when they made recommendations regarding attracting and recruiting, women and minorities pursuing careers in the trades and construction, the importance of using role models, taking high school students on field trips to become familiar with the construction field and opportunities, providing outreach initiatives to introduce them to mentors, and come up with

ways to use in recruitment materials and create gender neutral terminology because this can be rewarding.

Accessing career databases to locate science, engineering and urban students was essential in sending out mass email announcements for the “GoGreen Roundtable.” Today’s generation of students do not always look at flyers on the wall, or brochures but get information through other mediums discussed. Participating in extensive outreach activities, and going to places on campus where they are can proved to be invaluable. (Cato 2009) offers a solution if we are to reach people in general regardless of background in the green economy and exclaims “Green economics calls for richer and deeper understanding of people, their relationships, and how they behave and are motivated. The needs we are concerned about are not merely physical needs but also psychological and spiritual needs.” (p.3)

**Focus on advisement and counseling meetings, review concept and ideas to reach diverse women by establishing relationships with public relations and marketing departments, student newspapers and radio stations. Hold classroom presentations and investigate social networking sites.**

The evidence of perceived barriers in advisement and counseling holds some ramifications for career development and planning professionals, personal career coaches and life coaches, career counselors and advisors. Inherent perceived barriers are prevalent among women and students when decisions have to be made regarding selecting an academic major and other courses of study. (Albert 1999) augments a primary goal for counseling is perhaps getting students to identify all the barriers the client perceives as obstacles to successfully pursuing a particular career goal or exploring a general career direction. It is advantageous for any counselor or advisor to review a student’s academic history prior to meeting with them. Coordinating an evaluation of their academic background and scheduling meetings one on one will give you some important information. Often, students are not inclined to tell you about their academic unless you open up the door. If a student is pursuing a career in science or engineering fields it is wise to let them know they will need to have decent grades.

Women desiring careers in the green collar economy must take into consider what is needed by employers in terms of education, skills and training. Although, the vast majority of green jobs do require short or long term training, a high school diploma or college degrees women must be prepared to meet the obstacles. (Jones 2008) a previous white house advisor and activist concludes by offering his definition on the green economy by stressing inclusivity meaning “green for all” and includes being able to support your family, obtain a career track position that frankly benefits preserving and enhancing environmental quality, they are the opposite of blue-collar jobs but similar, range from low to high skill entry-level paid positions leading to advancement. He also mentions imaging or thinking about blue collar jobs as the 2.0 version as computers have been upgraded and which invoke the earth and herald the environmental challenges plagued by society.



Among other tools counselors, advisor and other career development professionals can use are facilitating dialogue with women by providing resources like Myers Briggs Type Indicator (MBTI) and Choices Planner, explaining the purpose of journal writing, recommending career building courses such as Career Orientation, Employment Strategies and Career Exploration. The Employment Strategies course is offered on line and many students have registered for this course which makes it also convenient for women who have families, jobs and other demands. In these courses students learn about how to conduct successful job searches, interviews, network, and demystify pressures associated with writing good resumes and cover letters for specific positions or cooperative education or internships.

Extraordinary measures are necessary if women and diverse populations are to be reach for counseling and advisement. Recruitment and marketing was discussed previously but some contributing factors play a role in getting them to become more involved with feeling comfortable with utilizing services on campus. Student newspapers may not be the answer nor radio stations but hosting blogs on twitter, LinkedIn for professionals and familiarizing students with facebook available through departments can be beneficial and useful for announcements and to advertise events.

## **Conclusion**

Women must continue to strive for justice based on societal barriers and stigmas which have been placed on them stemming from unequal access to the economy based on ownership and limitations with respect to distribution of wealth globally. Women who prepare to participate in the 21<sup>st</sup> Century “Green Economy” will have the upper hand in making the right career choices not based on salary alone but because on passion and freedom to follow their dreams. We live in a free country but so many people are in poverty and lack proper food, clothing and shelter. Many families struggle to make ends meet and often are forced to provide alternative means of support to have bread on the table.

The recommendations foreseen from assessing the “GoGreen Career Roundtable” could be instrumental in providing women with some recommendations on how attending urban universities and colleges can assist them with obtaining professional degree programs such as in science, engineering and urban affairs. There are so may program of study available nationwide and at Cleveland State University for students with an interest in environment and sustainability. The Administrators, Faculty, Staff and Students of the 21<sup>st</sup> Century “Green Economy will have to play key roles in making themselves accessible to learning and adapting to new ways of conserving and saving the planet. (Kennet 2009) perspective on the “Green Economy” is that “rebalancing our economic activities within what the plant can sustain, sharing the provisioning of needs, of people everywhere, species, nature, the planet and its systems and above all environmental and social justice.

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