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Connecticut Conference of Independent Colleges... Educators, Employers, Community Partners

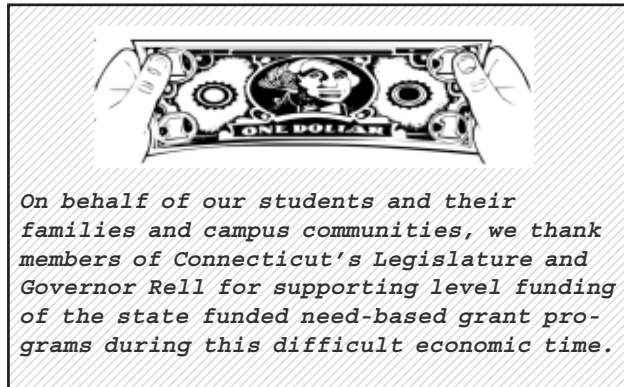
Demographics, Income and Future Workforce Needs

By Judith B. Greiman, President

In making sure that students are able to join Connecticut's workforce, they need to leave high school prepared for college level work, have access to financial aid and be offered relevant academic programs along with experiential learning in and advising about various fields.

This is of particular importance in Connecticut where:

- The shrinking of the 18 to 34-year-old cohort presents a serious challenge to Connecticut's long-term competitiveness and growth. This challenge is compounded by the growing proportion of low-skilled workers from the urban centers and the fact that if high school dropout rates by race and ethnicity remain constant, the number of high school dropouts in the state will increase almost 50 percent between 2005 and 2020. *Connecticut 2020: Fiscal Implications of Economic and Demographic Change, Report from Connecticut Economic Resource Center's 4th annual Research and Policy Conference*
- The cities are marked by flat population growth and a steady decline in jobs, wages and businesses. A large educational achievement gap exists between Connecticut as a whole and urban centers, where only 6 percent of high school sophomores pass all four sections of Connecticut Academic Performance Tests (CAPT). *Connecticut 2020: Fiscal Implications of Economic and Demographic Change, Report from Connecticut Economic Resource Center's 4th annual Research and Policy Conference*
- The median net worth of white-headed households is 65 times the median net worth of minority-headed households. Racial and ethnic minorities in Connecticut aren't just worse off than whites in their net worth; they are worse off than minorities in most other states. *Connecticut Family Asset and Opportunity Scorecard, Connecticut Voices for Children*



On behalf of our students and their families and campus communities, we thank members of Connecticut's Legislature and Governor Rell for supporting level funding of the state funded need-based grant programs during this difficult economic time.

- Urban minorities will make up increasingly larger proportions of Connecticut's high school population during the next decade. The high school graduation and college attendance rates of Blacks and Hispanics, however, are considerably lower than those of white and Asian-American high school students.

"Demographics and the Future Pool of Connecticut Students Available to Attend the State's Public Colleges and Universities"-Connecticut Department of Higher Education

As noted in *Education Pays: The Benefits of Higher Education for Individuals and Society* (2007) by Sandy Baum and Jennifer Ma, research has shown that:

- There is a positive correlation between higher levels of education and higher earnings for all racial/ethnic groups and for both men and women.
- In addition to earning higher wages, college graduates are more likely than others to enjoy employer-provided health insurance and pension benefits.
- The income gap between high school graduates and college graduates has increased significantly over time. The earnings benefit is large enough for the average college graduate to recoup both earnings forgone during the college years and the cost of full tuition and fees in a relatively short period of time.
- Any college experience produces a measurable return when compared with none, but the benefits of completing a bachelor's degree or higher are particularly large.
- Gaps between individuals who participate and succeed in higher education and those who do not have a major impact on the next generation. The young children of college graduates display higher levels of school readiness indicators than children of parents who did not graduate from college. For high school graduates from families with similar incomes, students whose parents went to college are significantly more likely to go to

Demographics (cont. on p. 2)

The Race for a Greener Environment at the University of New Haven

The race for a greener environment is on, fueled by a growing ecological mindset and a re-energized scientific community. At the University of New Haven (UNH), numerous envi-



ronmental projects are taking place, including the study of algae from Long Island Sound as a possible biofuel resource, with Co-Principal Research Investigators Carmela Cuomo, Ph.D., associate professor and coordinator of the UNH Marine Biology Program, and Eddie Luzik, Ph.D., associate professor of organic chemistry and synthesis in the UNH Department of Chemistry and Chemical Engineering. The main objective of the UNH study, funded by the Connecticut Center for Advanced Technology, is to identify species of algae from Long Island Sound that could be used as biodiesel fuel.

Cuomo also is leading a study funded by the National Fish and Wildlife Foundation on oxygen depletion (hypoxia) in Long Island Sound, so that scientists can better understand the potential impacts of warming waters on marine coastal systems. In addition, she has developed the first protocols to successfully breed the Atlantic horseshoe crab in

captivity, a feat that could prove a boon to the biomedical field and help protect the disc-shaped creature from extinction. The 400-million year-old invertebrate is invaluable for the bacteria-identifying compound contained in its bright-blue blood and is in great demand by the biomedical and pharmaceutical industries.

Roman Zajac, professor and chair of the UNH Department of Biology and Environmental Science and coordinator of the Graduate Program in Environmental Science, has a number of ongoing projects focusing on tracking and assessing ecological changes in Connecticut's coastal environments. Salt marsh change and loss can have profound effects on coastal ecosystems, the fisheries they support and on coastal municipalities. Undergraduate and graduate environmental-science students are examining how marsh vegetation changes are occurring and how fiddler crabs are responding to sea level rise in two of the many coastal studies taking place. The UNH eco team also is studying marsh change using global-positioning system technology and remote sensing to assess the degree of marsh erosion.

In addition, Zajac is working with graduate students on projects funded by the Connecticut / NOAA Sea Grant Program and the Quinnipiac River Fund

to study sea-floor communities in Long Island Sound and New Haven Harbor, in order to understand how environmental impacts may cause changes to communities in different portions of Long Island Sound. In a recent UNH Summer Research Fellowship project, a graduate



student began developing a molecular genetic marker to survey genetic variation in populations of a species of worm that has been designated as a pollution indicator. It is hoped that once the system is developed scientists will be able to assess how environmental conditions in Long Island Sound may be impacting the genetic structure of species inhabiting its sea-floor environments.

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Gov. Announces New CHESLA loan Rate:

Governor M. Jodi Rell announced that CHESLA loans now have an interest rate of 6.8 percent, with a 3% reserve fee (APR ranges from 7.159-7.327%). Borrowers pay interest only while in school (\$5.67 per \$1,000 borrowed), and 6 months after graduation they begin repayment of principle and interest (\$10.37 per \$1,000 borrowed). CT students going to any non-profit college or university - public or private - anywhere in the nation are eligible for these loans and students from anywhere in the nation attending any CT non-profit college or university may also qualify. Applications are on-line ... with instant approvals. www.chesla.org

Demographics (cont. from p. 1)

college themselves than those whose parents did not go to college.

The research, demographics and challenges are clear and do not need further explication. What is needed now is a concerted effort by business, government and education leaders to ensure high expectations and results at the K-12 level, financial aid and relevant programs at the college level and challenging and remunerative options in the workforce.

Connecticut College deepens intellectual engagement

Connecticut College has launched a new program to enhance students' academic and social experiences and deepen connections between faculty and students by bringing them together more often in both formal and informal settings within student residence halls.



Alex Hybel, Connecticut College's Susan Eckert Lynch '62 Professor of Government, right, leads an after-dinner discussion about international politics with 25 students in the common room of one of the College's residence halls.

The Residential Education Fellows program is part of a broader college-wide initiative to create more opportunities for academic discourse outside the classroom and new venues for both informal and structured intellectual activities.

At a residential liberal arts college, learning doesn't end when a student leaves the classroom, and this program will deepen the faculty-student engagement so essential to the liberal arts experience.

Ten faculty members

participate in the program, serving as liaisons and mentors and working closely with student leaders to give and sponsor informal talks, plan educational programs and host study breaks. The events are usually informal, and students are involved in the planning process, requesting certain topics for discussion and giving events clever names to attract a greater audience.

For example, History Professor Catherine Stock teamed up with sophomore Lauren Manning to host a trivia contest, "Are you

smarter than a Conn professor?" modeled after the popular TV show. Questions were based on American history and culture, mixing academia with pure fun. (The professors took a hit when they could not name all three Jonas brothers.)

At another event, Religious Studies Professor Eugene Gallagher used a clip from the South Park cartoon to launch a discussion about new religions and celebrity 'cults,' examining the popularity and allure of Scientology, Kabala and everything in between. The topic was suggested to Gallagher by sophomore Jeffery Baird, who was intrigued by Gallagher's research of cults.

Other topics to date have included international politics, photography and immigration.

The Residential Education Fellows program builds on a successful pilot program that moved many freshman seminars from the traditional classroom setting to residence hall common rooms. These less formal settings have been shown to aid discussion and allow students and faculty to develop closer relationships. After the pilot, the College found that freshmen whose seminars met in common rooms gave the experience higher marks overall than those who met in a conventional classroom. The positive difference was greatest for three factors: interaction with faculty, quality of classroom discussions and development of key learning skills. The common room students were more likely to report improvements in their ability to read and think critically, synthesize information, and develop arguments.

University of Bridgeport: Making an Impact

In the spring, a canopy of cherry blossoms covers Park Avenue, creating a fragrant thoroughfare for thousands who walk through the University of Bridgeport on their way to Seaside Park. This parade of citizenry reflects UB's longstanding connection to the community. We are an institution where ties to the community are strengthened daily. Among our accomplishments for the past year:

- University of Bridgeport contributes \$438 million a year to Connecticut's economy, according to the recent report, *UB: An Economic Impact Study*.
- UB students, employees, and alumni put \$177.1 into the state's income through direct and indirect spending.
- Patient treatment and health services valued at \$1.4 million were provided to the public through UB's naturopathy, dental hygiene, acupuncture, and chiropractic clinics.
- Research by UB professors is leading to the development of solutions that address some of the most pressing issues of today - from advanced new biomedical devices for patient care to "green"

technologies that reduce pollution.

- More than 1,000 students donated over 10,000 volunteer hours preparing meals for the homeless, visiting the elderly, mentoring children, and providing other valuable services throughout Connecticut.
- The University art gallery, sports facilities, and lecture halls were filled with visitors, scholars, musicians, and others participating in cultural and academic events open to the public.

Despite the economic uncertainty of the past 12 months, undergraduate enrollment soared by nearly 11 percent for 2009-2010, with total enrollment standing at 5,103 students. As the University expands, its impact strengthens, too. The benefits are enormous. As Congressman Jim Himes (D-Conn.) stated after touring the campus this spring: "UB provides the opportunity for top-notch career training right in the city's backyard. These facilities, educators, and programs are great assets to our job creation and education efforts in Bridgeport and the surrounding communities."

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Rensselaer at Hartford Receives Continuation of Grant Awarded by the Connecticut Center for Advanced Technology

The Hartford campus of Rensselaer Polytechnic Institute recently received a \$100,000 grant for two years (2009-2010) from the Connecticut Center for Advanced Technology (CCAT) to assist them in investigating the challenges faced by aerospace suppliers when implementing virtual manufacturing in their shops. The current grant, "Modeling and Simulation of Metal Manufacturing Operations for Supply Chain Improvement," is a continuation of one received for the period 2006-2008 that focused on machining modeling. This time around, while continuing work on machining, attention will also be devoted to metal casting and metal forming.

Rensselaer Associate Professor, Ernesto Gutierrez-Miravete, Ph.D., Department of Engineering and Science (www.ewp.rpi.edu/hartford/~ernesto), said, "As more mature manufacturing process simulators for casting, forming, welding, machining, et cetera, have become available and with the increasing power of desktop PCs, virtual manufacturing is becoming a reality. This approach has the potential of replacing some costly prototyping and plat trials by computer-guided experimentation. Engineers can thus focus experimental efforts on the more promising product and process designs deduced from computer simulations."

A paper entitled, "The Digital Age of Manufacturing: Making modeling and simulation make sense to manufacturers," by Brian Kindilien, Modeling and Simulation Technical Specialist, CCAT (www.ccat.us), emphasizes that these elements are not a futuristic view, but are being used now by supply chain manufacturers, educational institutions, CCAT, and other companies. He highlighted a project for a Connecticut supply chain manufacturer involving an effort to reduce the roughing machine process for the aerospace industry. By using machining process analysis software to determine feeds and speeds, the result was a 10-50% (depending on application) decrease in roughing cycle times.

Dr. Anthony Dennis, a CCAT technology specialist and Rensselaer adjunct professor, spoke about the encouraging results: "Using physics-based machining process modeling software and people from United Technologies Research Center and Rensselaer Polytechnic Institute at Hartford, we not only proved the viability of the software but provided remarkable improvements in the machining efficiency of the supplier."

Rensselaer's Hartford Campus and Groton Site offer graduate engineering degree programs in Electrical Engineering, Mechanical Engineering, Computer and Systems Engineering, and Engineering Science. Graduate certificate program options include Control Systems and High Temperature Materials. For more information about Rensselaer's engineering programs, please visit: www.ewp.rpi.edu/academics/does/eng_admission.html.

Rensselaer's Graduate School of Engineering is ranked 31st in the nation by *U.S. News & World Report* in their 2010 Edition of "America's Best Graduate Schools."

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The Independent Voice is a publication of the Connecticut Conference of Independent Colleges, a public policy association representing Connecticut's nonprofit independent higher education institutions.

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