

COLLEGES SEE HIGHER DEMAND FOR DEGREES IN AGRICULTURE

Enrollment is booming at many colleges of agriculture, as students flock to study subjects they feel offer a clear path to a job on graduation.

Agriculture-related college majors appeal to both the heart and mind of a student, university officials say, as a booming agriculture industry and practical skills taught at the colleges can help develop a career that addresses issues such as global hunger and obesity in the U.S.

There's a better understanding that when we use the term agriculture, it's not all plows and cows. It's clearly looking at the real intricacies of science and innovation. At traditional agriculture powerhouses such as Penn State, where enrollment is up more than 40% since 2004, career preparation can include cutting-edge research in areas such as plant breeding or genomics. Schools in more urban regions draw students interested in local foods and healthy eating.

Farmland prices have tripled in the U.S. in the past decade, and corn prices have doubled since mid-2010. The high-paying jobs that follow are catching students' attention in a down economy.

Iowa State University, where the agriculture college this fall expects to surpass an enrollment record set 35 years ago, is straining to meet industry demand for its graduates, said Wendy Wintersteen, the agriculture college dean. Anthony Lackore, 24, graduated from Iowa State in 2010 and works as a production agronomist raising soy bean seeds for DuPont Pioneer, a company that produces hybrid seeds. He had the job lined up by the fall of his senior year.

The university reports a 95% job-placement rate for graduates from the colleges of engineering and agriculture. Wages can start at between \$50,000 and \$60,000. DuPont Pioneer has been a top employer of College of Agriculture graduates for the past two years. Demand for skilled workers in the industry shows no signs of letting up, in part because some predict agriculture productivity will have to increase 70% by 2050 to feed the world's growing population. Pioneer has doubled its workforce in the last six years to 12,000 employees worldwide, and expects to add employees at a similar rate for the foreseeable future. About 3,400 of these jobs are in Iowa.

Students show an interest in the big problems of the day – obesity and food safety in the U.S. and hunger in the developing world. But better health through local foods and farmers markets appeal to them too.

The skills taught in agriculture programs also tend to offer a clear career path once students earn a diploma. Parents, in particular, sometimes discourage their children from subjects such as philosophy in favor of those that teach more marketable skills.

COLORADO AND WASHINGTON ENJOY THEIR MARIJUANA MOMENT

Marijuana users and activists celebrated the drug's legalisation in Colorado and Washington as landmark victories but uncertainty over the federal government's response tempered jubilation. Voters in both states approved amendments legalising the recreational use of marijuana, historic decisions that reflect growing disenchantment across the US with the decades-old "war on drugs".

A coalition of pot shop dispensaries, civil rights advocates and former law enforcers argued that legalisation would hit drug cartels' profits, boost state tax revenues and reduce the mass incarceration of African Americans and Latinos.

"I really think this is the beginning of the end for marijuana prohibition, not only in the US, but in many countries across the world, including the UK," said a former assistant attorney general in Colorado who supported the change. "We didn't just legalise it – we created a regulatory system."

A former Seattle police chief said he was very happy. "After 40 years of the racist, destructive exercise in futility that is the war on drugs, my home state of Washington has now put us on a different path."

Once the elections are certified – which could take up to two months – personal possession of up to an ounce (28.5 grams) of marijuana will be legal for anyone aged 21 or over in Washington and Colorado. Pot, previously available for medicinal purposes at dispensaries, will be sold and taxed at state-licensed stores.

Washington still bans personal cultivation, but Colorado will allow six plants per person. Neither state allows public use. Voters in Oregon rejected legalisation in their state. Questions abound over whether Colorado and Washington will become Amsterdam-style magnets for marijuana tourism, and over how federal authorities will respond.

The justice department said federal law making pot illegal remained unchanged. The Obama administration has used federal law to crack down on dispensaries in California and elsewhere, making some Colorado and Washington dispensaries nervous of a backlash. "We don't know what's going to happen" said one Denver store owner, declining to be named.

McAllister, the former assistant attorney general, predicted that Obama, secure in a second term, would leave Colorado alone because its regulations were tighter and clearer than the nebulous regulations which left California's open to abuse.

State leaders had opposed the legalisation but promised to respect the vote. Mike Coffman, a re-elected Republican congressman, said "I need to see what other states are doing but clearly if there is a sentiment that is moving nationally to legalise marijuana, then I certainly respect the decisions by the states. And I would support the forming of legislation at the federal level. But I don't know if I'm there yet. I need to study and see what the other states are doing."

COMING NEXT: USING AN APP AS PRESCRIBED

Smartphone apps already fill the roles of television remotes, bike speedometers and flashlights. Soon they may also act as medical devices, helping patients monitor their heart rate or manage their diabetes, and be paid for by insurance.

The idea of medically prescribed apps excites some people in the health care industry, who see them as a starting point for even more sophisticated applications that might otherwise never be built. Simple apps that track users' personal fitness goals have already gained wide traction. Now medical professionals and entrepreneurs want to use similar approaches to dealing with chronic ailments like diabetes or heart disease.

If smartphone-based systems can reduce the amount of other medical care that patients need, the potential benefit to the health care system would be enormous; the total cost of treating diabetes alone in 2007 was \$174 billion, according to the most recent statistics from the Centers for Disease Control and Prevention.

But unlike a 99-cent game, apps dealing directly with medical care cannot be introduced to the public with bugs that will be fixed later. The industry is still grappling with how to ensure quality and safety.

One of the pioneers in the prescription-app field is a company called WellDoc. Its DiabetesManager system, which patients can use through a smartphone app, standard cellphone or desktop computer, collects information about a patient's diet, blood sugar levels and medication regimen. Patients can enter this data manually or link their devices wirelessly with glucose monitors.

DiabetesManager then gives advice to a patient, perhaps suggesting the best food after recording a low midday blood-sugar reading. It also uses an algorithm to analyze the medical data and send clinical recommendations to the doctor.

WellDoc says that in a clinical trial, DiabetesManager was shown to reduce significantly the blood sugar levels in diabetes patients.

Those results persuaded the Food and Drug Administration to give the system clearance to operate as a medical device. At over \$100 a month, the cost is more akin to diabetes drugs than to most smartphone apps. But two insurance companies have already agreed to pay the bill for patients whose doctors ask them to use the system when it is available early next year, said the company's president.

The managing director of a subsidiary of the business arm of the Greater New York Hospital Association, says he believes that doctors will soon prescribe both clinically tested apps and more modest apps, like those that track physical activity or remind patients to take their pills. The company has established its own set of guidelines to determine the quality of health care-related apps.

"This is the transition from something that is superficial to serious health care delivery," he said.

COUPLES WHO SHARE THE HOUSEWORK ARE MORE LIKELY TO DIVORCE, STUDY FINDS

In what appears to be a slap in the face for gender equality, the report found the divorce rate among couples who shared housework equally was around 50 per cent higher than among those where the woman did most of the work. “What we’ve seen is that sharing equal responsibility for work in the home doesn’t necessarily contribute to contentment,” said Thomas Hansen, co-author of the study entitled “Equality in the Home”. “One would think that break-ups would occur more often in families with less equality at home, but our statistics show the opposite,” he said.

The figures clearly show that “the more a man does in the home, the higher the divorce rate,” he went on. The reasons, Mr. Hansen said, lay only partially with the chores themselves. “Maybe it’s sometimes seen as a good thing to have very clear roles with lots of clarity ... where one person is not stepping on the other’s toes,” he suggested. But the deeper reasons for the higher divorce rate, he suggested, came from the values of “modern” couples rather than the chores they shared.

“Modern couples are just that, both in the way they divide up the chores and in their perception of marriage” as being less sacred, Mr. Hansen said. “In these modern couples, women also have a high level of education and a well-paid job, which makes them less dependent on their spouse financially. They can manage much easier if they divorce,” he said. Norway has a long tradition of gender equality and childrearing is shared equally between mothers and fathers in 70 per cent of cases. But when it comes to housework, women in Norway still account for most of it in seven out of 10 couples. The study emphasised women who did most of the chores did so of their own volition and were found to be as “happy” as those in “modern” couples.

Dr Frank Furedi, Sociology professor at the University of Canterbury, said the study made sense as chore sharing took place more among couples from middle class professional backgrounds, where divorce rates are known to be high.

“These people are extremely sensitive to making sure everything is formal, laid out and contractual. That does make for a fairly fraught relationship,” he told the Daily Telegraph. “The more you organise your relationship, the more you work out diaries and schedules, the more it becomes a business relationship than an intimate, loving spontaneous one. “That tends to encourage a conflict of interest rather than finding harmonious resolutions.” He said while the survey applied to Norway, he was confident the results would be the same in the UK.

DEATHS SPOTLIGHT TAIWAN'S 'OVERWORK' CULTURE

The deaths of nearly 50 workers last year were blamed on working more overtime than allowed by law. This figure was as much as four times higher than the previous year, according to the Council of Labor Affairs (CLA).

Investigators tasked by the government to look into what caused deaths related to overwork found that the victims generally had congenital conditions, especially heart problems. They also had high-risk factors, such as being overweight and being a smoker, which had been aggravated by too much work. Many of them were in their late 20s to 40s.

The companies generally do not dispute the CLA's findings. They are only obliged to pay a relatively small fine for violating overtime laws. The labour insurance bureau compensates the victims' families for up to 3.75 years of their salary.

"We've had these cases all along, including migrant workers who died from overwork. But in the past, some people thought it was just a regular heart attack," said Sun Yu-lian, secretary-general of Taiwan Labor Front. "What's different about the recent cases is that the families dare to speak out."

Although Taiwan's labour law mandates that workers should not do more than 46 hours of overtime a month, some could be exempted from this if they agree to it.

"Taiwan's employers don't follow the laws. They find loopholes because they think no one will check." Based on CLA data, the number of overwork cases is disproportionately low compared to Taiwan's work force and to similar economies like Japan and South Korea, leading many to believe the problem is under-reported.

Taiwan ranks among the top countries with the longest working day, based on statistics. On average, Taiwanese employees work 2,200 hours annually - that is 20% more than Japan and the US, 30% more than the UK and 50% more than Germany, according to government data. A government study in 2010 found that 80% of the big Taiwanese tech companies being investigated violated overtime laws.

"In recent years, we've made changes in the law to let workers have more recreation time," said Lo Chih-chiang, who until recently was a spokesman for the president's office. Most workers now get two days off a week. The government has also threatened to increase fines and even jail employers.

But many still see 12-hour work days as the norm, with some managers even giving up annual holidays. Many argue that Taiwan has to work so much to stay competitive. Lin Bing-bin, who heads a business association, said that working hard in Taiwan is important to economic development.

"The laws can be revised to be more strict and complete, but they shouldn't be too inflexible. If they are too strict, it could hurt Taiwan's economic development."

DEVELOPING NATIONS' FISHING GROUNDS SHOULD BE PROTECTED, UN SAYS

As fish stocks around the world have become seriously depleted, the industrial fishing fleets of some countries have responded by seeking out fishing grounds belonging to developing countries, which often are populated by small boats rather than huge trawlers. Some governments have signed deals allowing such exploitation, while in other cases the fleet-owners circumvent regulations by registering their vessels in the developing country, while exporting the fish they catch back to their home markets.

But this "ocean-grabbing" is a serious threat to fish stocks, according to Olivier De Schutter, the UN's special rapporteur on the right to food. He said the practice could damage food security and lead to the over-exploitation of dwindling fish stocks. He compared it to the "land-grabbing" – by which countries such as China and Saudi Arabia have bought up agricultural land in poorer countries such as Ethiopia and Ghana – that has been an increasing trend in recent years, and which some have blamed for endangering farmers' security.

De Schutter said: "Ocean-grabbing, in the shape of shady access agreements that harm small-scale fishers, unreported catch, incursions into protected waters, and the diversion of resources away from local populations, can be as serious a threat as land-grabbing. Without rapid action to claw back waters from unsustainable practices, fisheries will no longer be able to play a critical role in securing the right to food of millions."

The illegal catch resulting from such practices amounts to between 10m and 28m tonnes of fish a year. De Schutter said there were also problems with fleets flouting quotas and regulations meant to conserve fisheries. As much as 7.3m tonnes – 10% of global catch – is discarded every year. "It is clear that as fish are becoming less abundant, fishing vessels are tempted to evade rules and conservation strategies," he said.

EU member states have been some of the most active in negotiating rights to fish in developing countries' waters. The EU fisheries commissioner, Maria Damanaki, has vowed to ban the wasteful practice of discarding edible fish at sea.

De Schutter said one of the most important measures would be to take better account of the role of small-scale fishing fleets, which tend to serve local people rather than international markets, and which tend to be more sustainable because the fishermen take smaller catches and have less bycatch and discards. De Schutter said small-scale fishers even use less fuel per gallon than industrial trawlers.

De Schutter called for the creation of "artisanal" fishing zones where small-scale vessels would have the priority, and for support for co-operatives of small-scale fishermen. "It is possible, and necessary, to turn these resources away from over-exploitation, and towards the benefit of local communities," he said.

DIETARY SUPPLEMENT AND FUNCTIONAL FOOD INDUSTRY IS 'PLACEBO-DRIVEN'

Monsanto, Kellogg's and PepsiCo are just a few of the companies cashing in on our addiction to nutraceuticals - the fast-growing pharma food and supplements sector.

The burgeoning dietary supplement and functional foods sector is primarily 'a placebo-driven industry' a leading expert has told the *Ecologist*.

Driven by consumers eager to gobble up fortified, enhanced and enriched products, the global industry is predicted to be worth \$207 billion a year by 2016. In the UK alone, the market for dietary supplements was worth £675 million, according to the NHS.

An investigation has shown how big brands have caught on to our addiction to 'quick fix' consumption. While the products these companies push claim to make us slimmer, younger and fitter, many of them are untested and make promises they just can't keep. But with consumers hooked on hope, the industry continues to grow.

'It became apparent to me, that unlike the pharmaceutical industry, driven by clinical research, the food and dietary supplement industry is a commodity business with low profits and very little clinical research to prove that their products work,' says Dr. DeFelice, founder of The Foundation for Innovation in Medicine, who coined the term 'nutraceutical'.

The word, which is a combination of 'nutrition' and 'pharmaceutical,' describes everything from probiotics to antioxidants to vitamins to energy bars to enriched yogurts. 'It is a food or part of a food that has a health and medical benefit, including the prevention and treatment of disease,' he said.

DeFelice says the industry has been reluctant to embrace clinical research, meaning many products can't live up to the claims they make. In 1989, and again in 2002, he lobbied to bring clinical research into the nutraceuticals industry by proposing his Nutraceutical Research and Education Act to the U.S. Congress. But he was dismayed to find little, if any, support for his bill. 'It's a marketing driven industry, not a research driven industry,' he says.

Unlike pharmaceuticals, nutraceuticals don't generate large profits. As a result, companies are reluctant to invest as heavily in clinical research. 'The pharmaceutical companies are not interested in funding this type of research because the molecules are not patentable, so there's no money to be made,' says a professor of biological and agricultural engineering at the University of Arkansas.

DeFelice says he doesn't look negatively upon the industry, but does feel it isn't living up to its potential. 'The dietary supplement and the functional food industry is primarily a placebo-driven industry,' he says. 'I say that's good because the risk is not great and the benefit is very, very good. On that alone, I would say 'Bravo,' but it's a shame. It could do so much more.'

ELECTION 2012: AMERICA'S NEW MANDATE ON CLIMATE CHANGE

Some environmentalists have characterized Obama's re-election as a mandate for strong action on climate change. Obama who frequently expressed concern about the climate during his first run for presidency in 2008, failed to talk about it on the stump this time around. The president's campaign advisers calculated that there were few votes to be won, and potentially many to be lost, if Obama were to appear to advocate tougher regulations on industry at a time of low economic growth and high unemployment nationwide.

Romney attacked Obama in TV ads broadcast in the swing state of Ohio for what he characterized as "job-killing" regulations on coal, which is a big player in mining and electricity production in much of the midwest. But the president's bailout of the auto industry turned out to be more persuasive to voters in the "rust belt" states, which went solidly for Obama.

With the candidate's relentless focus on the economy, climate change was a non-issue – until Nature herself brought it savagely into focus with Hurricane Sandy, the largest and most destructive weather event on record for the mid-Atlantic states. Climate scientists have been saying for years that warmer ocean temperatures, together with rising sea levels, would lead to an increase in punishing hurricanes. This prediction has tragically proved accurate since Hurricane Katrina, which killed over 1,800 people in New Orleans in 2005.

Political observers called the latest storm, Sandy, "a game-changer" in Tuesday's election. It gave Obama a chance to "act presidential", touring the coast of New Jersey at a critical moment just days before the vote. It also earned the president a timely endorsement from New York City Mayor, who applauded Obama for acting to stem climate change, taking steps to raise the fuel-efficiency standards on cars and tighten pollution rules on power plants(..).

Environmental activists are urging President Obama to harness his victory at the polls to enact stringent new limits on CO2 emissions, and to push hard for concerted global action on the climate. In one of his references to the threat of climate change since the convention, the president warned of "the destructive power of a warming planet" in his victory speech in Chicago.

But Obama will face the same opposition in Congress as he did in the last mandate. Republicans in Congress last year voted no fewer than 247 times to weaken EPA protections that have been in place for decades, and to defeat proposed new climate legislation.

That is the bad news. The good news is that, if the election results are to be trusted, the public's patience for Republican obstructionism on the environment may just have run out.

END THE MACHO CULTURE THAT TURNS WOMEN OFF SCIENCE

Professor Lesley Yellowlees, president-elect of the Royal Society of Chemistry (RSC), calls it the "terrific waste" of women in our scientific workforce. Among other things, she'll be thinking of the number of girls who choose physics A-level – a mere 22% of candidates – and the numbers fall off steadily thereafter, to around 7% of professors.

Along the way, the choices women make may lead them in different directions from male colleagues.

Have they chosen to marry a slightly older man and put his career first? Have they opted to stay at home with the baby who has spent months kicking at their conscience as well as at their belly? Have they decided they have no desire to spend their lives in a frantic competition with aggressive men with one-track minds? Women frequently feel unable to make the choices they really want, but surely society can make better use of their talents, first by encouraging them and then facilitating their progression.

So what can and should be done? Undoubtedly, additional government resources would be helpful, but organisations can start by confronting their own culture, which generally in universities is not good. In an RSC report, women told how they found their PhD experiences in chemistry an "ordeal filled with frustration, pressure and stress". Women who feel like that won't stick around. Organisations need to reflect on what is going on, check on supervisory practice and mentoring and make sure their policies are appropriately family-friendly. Such actions will benefit men as well as women, but typically women will benefit more.

Athena SWAN awards, which recognise good employment practice for women working in science among other fields, act as benchmarks. These are successfully changing attitudes and culture in those departments that engage and win them. The funders of research recognise this, too. Last summer, Dame Sally Davies, the chief medical officer, said that the Department of Health would not expect to shortlist for future funding any NHS/university partnership where the academic partner had not achieved (at least) a silver award in this scheme, after seeing some "appalling" presentations of gender issues.

Other aspects matter as well. More female scientists are now seen on our TV screens; these women are bringing science alive while also acting as role models for girls. Prizes such as the For Women in Science fellowships, run by L'Oréal and Unesco can also bring into the limelight the incredible talent that is out there.

We cannot afford to waste the talent of half the population by permitting the macho culture and negative subliminal messages permeating our society to deter so many smart young girls from starting science careers, or indeed to spit them out prematurely without allowing them to fulfil their potential.

EUROPEAN COMMISSION COULD OPEN GM PANDORA'S BOX

The European Commission will soon decide whether to approve 26 genetically engineered crops for cultivation on European soil, 19 of which are genetically engineered to be tolerant to the herbicide glyphosate.

Currently, less than 1% of European crop soil is used for genetically engineered crops. Getting Herbicide Tolerant Genetically Engineered (HTGE) Crops approved for commercial use will give companies like Monsanto a vital and potentially devastating foothold in Europe.

In October, Greenpeace commissioned an agricultural economist to examine the possible consequences of approving HTGE crops. The study is based on extensive US studies of where HTGE crops had been approved for commercial purposes since 1996. It focuses on HTGE corn, sugar beet and soya and predicts an increase in the use of glyphosate over a period of 14 years (2012-2025) of more than 800%.

If EU farmers take up HTGE technology as quickly as US farmers did, glyphosate use in maize crops – the most important and widely grown crop in Europe – will increase by more than 1,000% by 2025 over current use, and total herbicide use will double. This is because HTGE crops are followed by glyphosate resistant weeds, which leads to an increase in the amount of herbicides used to tackle them.

Glyphosate is a broad-spectrum herbicide that was first marketed by Monsanto under the name Roundup in the 1970s. Numerous companies now produce glyphosate under different trade names. Twenty years after the herbicide came onto the market, Monsanto developed GE plants that are resistant to glyphosate, and therefore allow a wider application of the herbicide, in order to deal with the unwanted weeds. While the plants may be glyphosate resistant the wider environment is not.

If we are to learn anything from the experiences of the American farmers, European farmers can expect inflated seed prices, more expenses for buying much more pesticides and the heavy labour and increasing costs trying to get rid of resistant weeds that inevitably follow HTGE crops.

When farming with GE seeds, farmers struggle, communities suffer and food costs increase. The effects ripple out across rural communities and onto our supermarket shelves. Farmers will have to buy seeds every year according to contracts with seeds manufacturers. In the US, Monsanto has sued a number of farmers for breaches of such contracts. The problem is not only in the inability of farmers to keep and replant their seeds, but also the continually increasing costs associated with GE seeds and the lack of availability of conventional seeds.

The European Commission must support farmers and the environment and protect constituents rather than fold to the heavy handed lobbying tactics of the agro-industry.

EUROPEAN PROPOSAL PRESSES FOR WOMEN TO JOIN BOARDS

Companies allocating fewer than 40 percent of seats on supervisory boards to women could face serious sanctions later this decade, according to a proposal made Monday by Viviane Reding, the European Union justice commissioner.

Ms. Reding has long campaigned for major changes in European boardrooms, and last year she gave industry a final opportunity to improve its record on placing women in top management. In March, she said self-regulation had failed and that legislation would be required in order to accelerate gender equality in many of the most senior areas of business life.

If approved by her colleagues at the European Commission in the coming weeks, the proposal would require state-owned companies to name women to 40 percent of the seats on supervisory boards by 2018. The legislation would still need approval from the Union's 27 governments and the European Parliament, and some powerful sections of industry have continued to warn against a system of mandatory quotas.

"Big divergences among sectors and national traditions mean any measures must remain voluntary," a senior policy adviser at the European Round Table of Industrialists, said Monday.

Some major technology and manufacturing companies have been particularly wary about placing constraints on the gender of board members, partly because of the relative paucity of women compared to men working in those fields in certain countries.

The measures would apply to supervisory boards, or to non-executive directors, one E.U. official familiar with the proposal emphasized on Monday. The official, who spoke on condition of anonymity because the proposals still needed to be formally discussed, said companies would retain the freedom to choose among the best qualified executive directors to run day-to-day aspects of a business.

The proposal also had been written with a focus on "under-represented gender," so that company boards that do not include at least 40 percent men also could run the risk of sanctions, the official said.

Ms. Reding has previously said she dislikes quotas but concluded that they had served to open the way to equality. Countries that have quotas "bring the results," she said in an interview this year. At the time, Ms. Reding said she could set the target anywhere between 20 percent and 60 percent. Member states are likely to have a menu of options for sanctioning companies if the legislation wins approval.

According to the current proposal, the national authorities would be able to choose one or all of the following options to enforce the quota: financial penalties; exclusion from bids on public contracts; restricting access to national and European subsidies; and requirements to cancel appointments of women or men when a board is too heavily tilted toward one gender.

Adapted from *The International Herald Tribune*

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(450 words)

EVERYONE'S CONNECTED, BUT NO ONE IS TALKING

I first noticed it in a restaurant. The place was strangely quiet, and at one table a group seemed deep in prayer. Their heads were bowed and their hands in their laps. I then realized that everyone, young and old, was gazing at a handheld phone. People strolled the street outside likewise, with arms crooked at right angles, necks bent and heads in potentially crippling postures. Mothers with babies were doing it. Students in groups were doing it. They were like zombies on call. There was no conversation.

Every visit to California convinces me that the digital revolution is over, by which I mean it is won. Everyone is connected. The New York Times recently declared the death of conversation. While mobile phones may at last fall victim to etiquette, this is largely because even talk is considered too intimate a contact. No such bar applies to emailing, texting, messaging, posting and tweeting. It is ubiquitous, the ultimate connectivity, the brain wired full-time to infinity.

The MIT professor and psychologist Sherry Turkle claims that her students are close to mastering the art of sustaining eye contact with a person while texting someone else. It's like an organist playing different tunes with hands and feet. To Turkle, these people are "alone together ... a tribe of one." Anyone with 3,000 Facebook friends has none.

The audience in a New York theatre now sit, row on row, with lit machines in their laps, looking to the stage occasionally, but mostly scrolling and tapping away. The same happens at meetings and lectures, in coffee bars and on jogging tracks.

Children are apparently developing a dexterity in their thumbs unknown since the evolution of the giant sloth. Talk is reduced to muttered, heads-down expletives.

Psychologists have identified this as "fear of conversation". People wear headphones as "conversational avoidance devices". The internet connects us to the entire world, but a world bespoke, edited, deleted, sanitised.

Doubt and debate become trivial because every statement can be instantly verified or denied by Google. There is no time for the thesis, antithesis, synthesis of Socratic dialogue, the skeleton of true conversation.

We have, says Turkle, confused connection with conversation – "the illusion of companionship without the demands of a relationship". Human friendship is rich, messy and complicated. It requires patience and tolerance, even compromise.

As we push other people off into a world of question and answer, connection and information, friendship becomes ersatz virtuality.

In his history of conversation, Stephen Miller points out that "most Americans are nowadays concerned more with improving their sex life than their conversation life". Even the phone is passé. Those who used to call a friend in trouble now send a text.

FAR FROM THE SPOTLIGHT, A RUNNER DOPES, THEN WINS

With one end of the rubber band between his teeth, Christian Hesch cinched the tourniquet tightly around his biceps. The thick veins in his forearm quickly surfaced, and he carefully grabbed the syringe.

Hesch, 33, a competitive runner, had bought the banned blood booster erythropoietin, known as EPO, at a pharmacy in Tijuana, Mexico, and was driving home to Hollywood. With one hand on the wheel, he slowly inserted the needle into his forearm. He pressed the plunger into the barrel and forced the clear liquid into his veins.

Hesch, a self-described “profligate road racer” said that over two years, beginning in August 2010, he had injected himself with EPO 54 times before an empty EPO vial was found in his bag and he was reported to antidoping officials. In that time, he won nearly \$40,000 in prize money in more than 75 races, including international competitions, US championships and local road races. “You get a little money at one race, maybe £1,500 at another,” Hesch said. “And it adds up quickly.”

Last week, the United States Anti-Doping Agency released details of what it described as a sophisticated doping scheme involving the cyclist Lance Armstrong, one of many cases in recent years that have linked star athletes to doping. Hesch’s story illuminates a different end of the sports doping spectrum, away from the power, money and glamour of Tour de France champions, home run kings and Olympic medalists.

Hesch, who has been a competitive runner since 2001, said that his justification for doping stemmed from this harsh reality: a few runners obtain lucrative shoe contracts and compete in a handful of high-profile, televised races; the rest are ordinary weekend runners. Hesch exists somewhere in the middle. He supports himself running full time without a sponsorship by cherry-picking road races across the country, favoring the ones with the largest purses and the least competitive fields. In August, he won the half marathon in Providence, Rhode Island and it was the last race he won before Nike Team Run LA teammates found an empty vial and confronted him. “It was a weird situation to be in, because you only hear about top athletes doping,” said Justin Patananan, the captain for the Nike team.

Over the past two and a half years Hesch said he was never required to perform a drug test at any race, including the five-kilometer national championships. He also was not tested when he represented Team USA at the Armagh international Road Race in Ireland. But as he followed the antidoping agency’s case against Armstrong, he decided to come clean. Hesch maintains that he never raced on EPO but used it to recover from injuries.

FEELING THE PRESSURE TO DRINK FOR WORK

As an executive with Forbes magazine, Terry Lavin worked hard to earn his reputation as a dependable drinking buddy. "I was always the last to leave, always had a cocktail in my hand." In 2010, he decided to quit drinking for six months. His health got better; his business did not.

"I would call guys I was friendly with," he recalled. "And they'd say: 'Are you drinking? No? Don't worry about it.'"

Plenty of American business rituals continue to revolve around alcohol. For professionals who abstain from it – for health, religion, recovery or simple preference – it can sometimes seem harder to get ahead if you're not willing to drink.

"You're expected to drink, and there's a little bit of circumspection if you say you don't do it," said the director of a special treatment program for professionals. This year's presidential campaign is an excellent example. As a part of his pitch to voters that Mitt Romney, a teetotaler Mormon, is different from most Americans, President Obama has made a conspicuous display of his own regular-guy fondness for beer. And polls in recent years showed that voters choose the candidate they'd rather have a beer with.

For less public figures, the notion that people who don't drink can't perform in business can impede professional progress. Professional disadvantages to sobriety range from the literal – declining a potential promotion because it would have involved wine tasting – to the subtle.

"I regularly turn down lunches and dinners with industry people," an editor said. "I just can't go to dinner with a winemaker and tell him: 'No, thank you. I'm not tasting those'". On Wall Street, those who don't drink "complain that they can't close a deal, can't even get into early negotiations because they won't engage in drinking behaviors," said a therapist who counsels Wall Street workers in recovery.

Yet, he says, sober women might actually benefit from an old double standard. "Men are still expected to get together and go wild, but in some ways it's frowned upon if the woman engages in it". "There are plenty of things for which women are discriminated against in the workplace, but this isn't one of them."

Still, research supports the idea that nondrinkers have a harder time climbing the corporate ladder. Multiple studies have shown that moderate drinkers earn more money than those who don't drink, though heavy drinkers earn less than moderate drinkers.

Teetotalers tend to develop strategies for socializing professionally without alcohol. Some will order a drink and simply leave it alone; others use humor to deflect unwanted attention. "I tell people I'm pregnant," said a Wall Street trader (a man).

FOOD SHORTAGE COULD FORCE WORLD INTO VEGETARIANISM, WARN SCIENTISTS

Leading water scientists have issued one of the sternest warnings yet about global food supplies, saying that the world's population may have to switch almost completely to a vegetarian diet over the next 40 years to avoid catastrophic shortages.

Humans derive about 20% of protein from animal-based products now, but this may need to drop to just 5% to feed the extra 2 billion people expected to be alive by 2050, according to research by some of the world's leading water scientists.

« There will not be enough water available on current croplands to produce food for the expected 9 billion population in 2050 if we follow current trends and changes towards diets common in western nations, » the report by Malik Falkenmark and colleagues at the Stockholm International Water Institute said.

« There will be just enough water if the proportion of animal-based foods is limited to 5% of total calories and of considerable regional water deficits can be met by a reliable system of food trade. »

Dire warnings of water scarcity limiting food production come as Oxfam and the UN prepare for a possible second global food crisis in five years. Prices for staples such as corn and wheat have risen nearly 50% on international markets since June, triggered by severe droughts in the US and Russia, and weak monsoon rains in Asia. More than 18 million people are already facing serious food shortages across the Sahel.

Oxfam has forecast that the price spike will have a devastating impact in developing countries that rely heavily on imports, including parts of Latin America, North Africa and the Middle East. Food shortages in 2008 led to civil unrest in 28 countries.

Adopting a vegetarian diet is one option to increase the amount of water available to grow more food in an increasingly climate-erratic world, the scientists said. Animal protein-rich food consumes five to 10 times more water than a vegetarian diet. One third of the world's arable land is used to grow crops to feed animals. Other options to feed people include eliminating waste and increasing trade between countries in food surplus and those in deficit.

« Nine hundred million people already go hungry and 2 billion people are malnourished in spite of the fact that per capita food production continues to increase, » they said. « With 70% of all available water being in agriculture, growing more food to feed an additional 2 billion people by 2050 will place greater pressure on available water and land. »

The report is being released at the start of the annual world water conference in Stockholm, Sweden...

FOREIGN STUDENTS: NOT WELCOME HERE

Students are annoying. They sleep till noon, listen to awful music and think *Jackass* is amusing. However, these are hardly compelling reasons for any nation to curb the influx of foreigners to its universities.

America has the best universities in the world, but its immigration enforcers have done a good job of making them less attractive. The biggest turn-off is the difficulty of obtaining a work visa after graduating. President Barack Obama pays lip service to the need to open up, but has overseen millions of deportations. A new study finds that anti-immigrant politics appear to have stunted American enterprise.

Britain has turned even harsher. The Conservative Party has promised to reduce net immigration from 250,000 a year when it came to power to 100,000 by 2015. Since it has no control over the number of EU citizens who enter Britain or the number of Brits who leave, it finds itself squeezing students from outside the EU.

It has not imposed an absolute cap on the number of student visas, but it has made the application process more arduous, and made it harder for non-Europeans to work in the UK once they have graduated. Previously, students would be allowed two years to find work. Now they must find a sponsoring company and a job with a starting salary of £20,000 (\$32,300) a year, or face deportation. Students are also being told they can no longer bring their wives and children with them while they study.

All this matters for three reasons. First, education is a lucrative export: foreign students pay handsomely for tuition, textbooks and toga parties. Second, mixing with bright people from elsewhere is good for native-born students; it helps them understand the globalised world in which they will later seek jobs. Finally, foreign students forge connections that can last a lifetime. If they have studied or worked in a particular country, they are more likely to do business with that country when they eventually return home. Shutting out foreign students is thus much more damaging than sabotaging any other export industry.

Other countries are keen to woo the brains that America and Britain reject. Australia has reversed a crackdown on foreign students and started to welcome them. Canada has gone further, allowing all postgraduates to stay and work in the country for three years, with no restrictions.

Many continental European universities have joined the fray, offering courses in English and MBAs that cost far less than American ones. Standards are fast improving in Asia and South America, too. The world is engaged in a war for mobile talent. Nations that refuse to take part will lose.

FRANCE ADVANCES GAY MARRIAGE BILL

The French government on Wednesday approved a draft bill legalizing same sex marriage after weeks of loud opposition, especially from religious figures and the political right.

President François Hollande promised to legalize same-sex marriage during his presidential campaign. On Wednesday, he said it would represent “progress for all of society”.

The draft law redefines marriage to stipulate that it is “contracted between two persons of different sex or of the same sex” and the words “father” and “mother” in existing legislation are replaced by “parents”. The bill would allow married couples to adopt children.

The cabinet decision came a day after Maine and Maryland became the first U.S. states to approve same sex marriage in a popular vote. It was the same day that Spain’s highest court upheld the country’s law on same-sex marriage seven years after it was passed in 2005 and more than 21,000 same-sex couples had married.

France would become the 12th country - including Britain, the Netherlands, Denmark, Norway, Spain and Sweden - to make its marriage laws “gender neutral”. In Germany, registered same-sex couples have essentially the same legal rights as married people, but same-sex marriage is not legal.

But the law has been controversial and subject to delays in a nation where, for now, only married couples can adopt. Opinion polls indicate that a majority of the French support gay marriage, but half approve allowing gays to adopt.

Last month, several hundred people demonstrated against the law in several cities across France, emphasizing opposition to the adoption of children by gays.

The most virulent opposition has come from religious leaders, denouncing it as an act of “deception”, or “the marriage of a few imposed on everyone”. Gilles Bernheim, the chief rabbi of France, sent a 25-page report to the government, calling “marriage for all” a “slogan”, rather than a societal project. Muslim, protestant and Orthodox religious leaders have also opposed the bill.

Conservative and far-right politicians have called for street protests against the law, and asked the government to delay it. One Paris official warned that if the government broke the taboo of gay marriage, it would lead to breaking other taboos, like incest or polygamy, a hot topic among conservatives worried about the spread of conservative Islam in France.

In a compromise, the bill leaves out state aid for gay couples for assisted procreation, artificial insemination and the like. Such aid is available now for heterosexual married couples. Nicolas Gougain, the spokesman of a major association defending gay rights in France, said: “It is a progress, but also a problem, because adoption is long,” and there are few babies available to adopt in France.

FREEDOM OF THE PRESS DOESN'T JUSTIFY KATE MIDDLETON TOPLESS PHOTOS

To journalists who have risked their own safety and life exercising the First Amendment and witnessed American military members putting themselves in even greater danger protecting it, there is little more annoying than watching a bunch of perverts and greed-heads piously invoking freedom of the press to justify their disgusting and pathetic behavior.

Oh, parts of the European press are doing just that. A French publication published photos of the Duchess of Cambridge (otherwise known as Princess Catherine Middleton) sunbathing topless in the royal couple's private villa. The magazine was followed by an Irish publication, and an Italian publication owned by former Prime Minister Silvio Berlusconi.

The British press – perhaps a bit more timid amid disclosures that some of its brethren had intercepted phone messages of politicians, celebrities, and a child kidnapping victim – has been a bit more restrained. The palace has filed a lawsuit, which decency dictates it wins. But the attitude of the scummy elements of the British media is still appallingly evident.

The Daily Mail tops the list of bottom-feeders, penning a column that initially sympathizes with Prince William over the outrageous invasion of the couple's privacy. *The Daily Mail* doesn't seem concerned about Princess Catherine, apparently seeing this as some sort of property dispute in which Prince William, like "any man," might be uncomfortable with someone publishing photos of his woman in a state of half-undress. It's as if Princess Kate herself is merely an object here, to the toad who penned the offensive column. Only the prince, it seems, has the right to complain.

And *The Daily Mail* makes it crystal-clear in its summation of the lovely and charming new member of the royal family, noting: 'The truth is she's public property. She has to assume she's on offer at all times, even when lounging by a swimming pool at a private villa'.

Photographing someone with a telephoto lens from the street is not taking vacation photos. It is the photographic equivalent of breaking and entering. There will always be perverts who want to see photos of a half-dressed woman in her private space. There will always be greedy newspaper and magazine publishers who cater to the perverts. And there will always be misogynists like journalists at *The Daily Mail* who don't think women have rights at all and are only minimally protected as the property of men. But don't use the profound principle of freedom of the press to defend such boorish behavior and invasions of privacy. The best testament to genuine First Amendment freedoms (and their equivalent in European courts) would be to punish those who use the camera as a weapon – as well as those who profit from it.

GEOGRAPHY MATTERS AS MUCH AS EVER

Lyft is a ride-sharing service that began this summer. Its drivers are private individuals who rent out seats in their cars for a few dollars a time. It works through a smartphone app. When you register as a customer, you supply your phone number and credit-card details. When you want a ride, you open the app and see a map with the locations of the nearest motors. You tap to request a ride, and the app shows you your driver's name, his rating by past passengers and photos of him and his car. Afterwards you rate him and pay through the app.

The opportunity would not exist had the physical and digital worlds not become tightly intertwined. Every ride using Lyft involves not only a physical trip but also several much longer digital journeys: between the passenger's and the driver's smartphones, via Wi-Fi and cellular base-stations, as well as, ultimately, the passenger's and the driver's banks. But it also demonstrates the importance of physical location to today's digital realm.

Obvious? Not necessarily. Since the internet began to expand from academic to widespread public use, there have been three main ways of thinking about its relationship with the physical realm. The first emphasised how the digital world would reshape the real one. People everywhere would have access to the same electronic libraries of information, news and comment. Many companies would be free to choose their location. Staff could work just as well at home, communicating with colleagues by e-mail or video link.

A good deal of this has come to pass. Today's worker may leave the office physically but never digitally: he is attached to it through his smartphone and his tablet. He can take part in videoconferences so realistic that he might be in the same room.

A second line of thought puts digital and physical life in separate spheres. Internet idealists declared cyberspace to be independent of governments of "flesh and steel". But these two worlds were never really separate. Governments have wielded power over the internet as well as over their physical domains, blocking sites and bashing bloggers.

Here is the third option: the physical realm also shapes the digital one. One big reason for this is that nowadays a lot of people are online wherever they go. They carry powerful computers and local information is more valuable to them when they are on the move than when they are sitting at a desk.

The rapidly declining cost of communications and computing power has already wrought huge changes in the way people go about their daily lives. Digital maps and guides will affect the way people behave in the physical world and bring about yet more changes. The digital and the physical are becoming one.

GOOGLE'S SELF-GUIDED CAR COULD DRIVE THE NEXT WAVE OF UNEMPLOYMENT

Our world crossed a significant threshold last week. Jerry Brown, the governor of California, signed into law a bill that will allow driverless cars on to his state's roads from 2015. For some people, it'll be seen as an example of techno-hubris – "flags on the moon stuff".

Governor Brown signed the bill at Google's HQ in Mountain View. For several years, Toyota Prius hybrids that have been specially adapted by the company's engineers have been driving the roads of California. To date, they have logged 300,000 miles with only one accident – caused by a human-controlled car that ran into one of them. And they have now logged 50,000 miles without a human having to take the wheel.

Google's co-founder, Sergey Brin, pointed out that autonomous vehicles would be significantly safer than human-controlled ones. 40,000 people are killed every year in road accidents in the US and many, if not most, of those are caused by human error.

"Too many people are underserved by the current transport system. They are blind, or too young to drive, or too old, or intoxicated." Brin said. He also argued autonomous vehicles could make better use of the road and reduce the size of car parks by fitting into smaller areas than humans could get them into.

Think about what Google has achieved. Its engineers have demonstrated that with smart software and an array of sensors, a machine can perform a task of sophistication and complexity most of us assumed would always require the capabilities of humans.

This isn't just about cars, by the way. Economists in the US are increasingly puzzled by the fact that even after its recession officially ended, the rate of job-creation is much lower than expected and the mean length of time for which people are unemployed has rocketed to 40 weeks.

Economic theory (and history) says that when companies begin to grow or become profitable again, they buy equipment and hire workers. But that isn't happening. Companies are still buying kit, but they're not employing workers.

So where did the jobs go? Advances in computing of the kind embodied by the Google self-driving car represent the next wave of job-eliminating technology.

Moore's law, which says that computing power doubles every 18 months, is still doing its stuff.

And as for those sceptics who think that driverless cars won't appeal to most motorists, there is the uncomfortable fact that, at least in the industrialised world, the car has peaked. We're driving less, year on year. Gridlock drains the romance from driving. And young people are not lusting to own cars like they used to.