

MIT's
Oldest and Largest
Newspaper



WEATHER, p. 2

TUE: 87°F | 66°F
Mostly sunny.
 WED: 85°F | 66°F
Chance of showers
 THU: 72°F | 60°F
Mostly cloudy

Stem cell work in limbo awaiting court’s decision

Ruling on temporary stay may come today

By John A. Hawkinson
NEWS EDITOR

Many stem cell researchers have been left uncertain about their own future and the future of their field as they wait for a federal judge to decide whether to allow the NIH to fund human embryonic stem cell research, within and without of its walls.

A recent federal court injunction barred NIH labs from performing human embryonic stem cell research, and also stopped the NIH from funding grants that supported such research. The judge is currently considering an emergency stay which would temporarily allow the NIH to continue its research and to continue funding research.

The NIH has interpreted the court order to bar work with any human embryonic stem cell lines, but the plaintiffs in the case say they only meant to roll back the additional stem cell lines allowed by the Obama administration in 2009. Those plaintiffs, James L. Sherley and Theresa Deisher, said in a court filing Friday night that the Court’s ban does not apply to research approved under the Bush administration’s stem cell guidelines in 2001.

The judge, Royce C. Lamberth, is expected to rule early this week on the emergency stay, quite possibly as early as today.

The case is *Sherley v. Sebelius*, where plaintiffs James L. Sherley and Theresa Deisher

assert that the federal funding of human embryonic stem cell research violates the Dickey-Wicker amendment, a congressional appropriations rider that prohibits federal funding of research where a human embryo is destroyed. They are suing the Department of Health and Human Services and the National Institutes of Health.

The government filed its emergency motion last week Tuesday, requesting that the Court put on hold, or stay, the preliminary injunction it issued on Monday, Aug. 23. That preliminary injunction directs the NIH & HHS to stop “implementing, applying, or taking any action whatsoever pursuant to the National Institutes of Health Guidelines for Human Stem Cell Research, 74 Fed. Reg. 32,170 (July 7, 2009), or otherwise funding research involving human embryonic stem cells as contemplated in the Guidelines.”

Sherley’s motivation

According to an article in Thursday’s *Wall Street Journal*, Sherley and Deisher were “recruited separately” by lawyers looking to challenge the federal policy. They had never met until last week, the *Journal* said.

It’s not clear who recruited them, or how the lawsuit is being funded.

The lawsuit originally included seven ad-

Stem cells, Page 10

Most libraries cut back on operating hours this year

Hayden closes at 11, to lose extended weekend hours

By Jingyun Fan
ASSOCIATE NEWS EDITOR

MIT Libraries drastically cut hours for the new 2010-2011 academic year. The libraries Hayden, Barker, Dewey, Lewis, and Rotch lost a combined 27.5 hours of service per week. Most libraries will open half-an-hour later and some, including Hayden, will close an hour earlier.

These hours will be effective starting today. Reductions were decided using data showing hours of most use by students via record of daily door counts in each library.

MIT has mandated that libraries must reduce the Fiscal Year 2011 budget by \$2 million,

a policy that is accelerating the Libraries’ 2008 reorganization initiative.

Over the summer, MIT libraries were closed from July 2 to July 10 and library staff were forced to take unpaid vacations to help cut costs.

In the last academic year two MIT libraries were closed — the Aeronautics and Astronautics Library and the Lindgren Library. During exam week last semester, Hayden Library closed at 2 a.m. every day instead of staying open 24-hours as it has in the past.

Hayden Library underwent renovations this summer. Improvements include new energy-efficient lighting, sprinkler system upgrades, new carpet, acoustical ceiling tiles, and paint.

Library	Last year’s (2009–2010) hours	This year’s (2010–2011) hours	Hours Lost
Hayden	Mon–Thu 8a.m.–midnight Sat 10a.m.–10p.m. Fri 8a.m.–10p.m. Sun 10a.m.–midnight	Mon–Thu 9a.m.–11p.m. Sat 1–6p.m. Fri 9a.m.–6p.m. Sun 2–11p.m.	25
Barker	Mon–Thu 8:30 a.m.–11p.m. Sat 1–6p.m. Fri 8:30a.m.–7p.m. Sun 1–11p.m.	Mon–Thu 9a.m.–11p.m. Sat 1–6p.m. Fri 9a.m.–6p.m. Sun 2–11p.m.	4.5
Dewey	Mon–Thu 8:30a.m.–11p.m. Sat 1–6p.m. Fri 8:30a.m.–7p.m. Sun 1–11p.m.	Mon–Thu 9a.m.–11p.m. Sat 1–6p.m. Fri 9a.m.–6p.m. Sun 2–11p.m.	4.5
Lewis	Mon–Thu 8:30a.m.–10p.m. Sat 1–6p.m. Fri 8:30a.m.–6p.m. Sun 1–10p.m.	Mon–Thu 9a.m.–9p.m. Sat 1–6p.m. Fri 9a.m.–6p.m. Sun 2–9p.m.	8.5
Rotch	Mon–Thu 8:30a.m.–11p.m. Sat 1–6p.m. Fri 8:30a.m.–7p.m. Sun 2–10p.m.	Mon–Thu 9a.m.–11p.m. Sat 1–6p.m. Fri 9a.m.–6p.m. Sun 2–11p.m.	2.5
Rotch Visual	Mon–Fri 8:30a.m.–5p.m. Sat–Sun Closed	Mon–Fri 9a.m.–5p.m. Sat–Sun Closed	2.5

Student groups show off for new members



Andrew Swayze—The Tech
Akansha Kumar ’11 (left) and Shubhi Goyal ’12 perform with MIT Chamak, a South Asian fusion dance team, at the ASA Activities Midway last Friday. More than 200 student groups had booths in the Johnson Ice Rink.

TEP sodium drop suit ended in six-figure settlement

In August, *The Tech* reported on the settlement between Tau Epsilon Phi (TEP) students and cleanup volunteers over injuries resulting from dropping sodium in the Charles River in 2007. *The Boston Globe* subsequently reported that the settlement

was in the hundreds of thousands of dollars, according to John J. Barton, a lawyer for the victims.

The settlement will be paid out of the insurance policies of TEP and of Bhaskar Mookerji G, the TEP member who confessed to throwing the sodium in the river. The money will compensate victims Thomas Soisson and Katherine Nardin for emotional trauma and medical expenses, which included skin graft surgery and burn scar treatments.

— Joanna Kao

IN SHORT

The APO Book Exchange will take place in W20-307 (third floor of the Student Center) from 10 a.m. to 5 p.m. through Friday this week. You can also order books online or just peruse the inventory at <http://apo.mit.edu/bookex>.

Interested in working for the Undergraduate Association? The UA is running information sessions this week at dorms across

campus. They will be at Simmons in the Mail Room Lounge at 5:30 p.m. on Wednesday; at Burton-Conner in the Conference Room at 5 p.m.; and at Next House in the TFL at 6 p.m.

Comedians Shane Mauss and Bo Burnham will headline the Fall Festival on October 2 at 8 p.m. at Kresge Auditorium. Tickets go on sale today at <http://sao.mit.edu/tickets>.

Send news information and tips to news@tech.mit.edu.

THE U.S. NEEDS TO DUMP PAKISTAN
Pakistan has been mismanaged to the verge of collapse. We can’t continue this toxic relationship. **OPN, p. 4**

VARIOUS STATES OF UNDRESS
Don’t overrun third base. Slow down, be patient, and give it a try. **CL, p. 6**

FRESH PERSPECTIVES
A sudden illness during Orientation, and what one freshman learned. **CL, p. 6**



STEAL MY COMIC
Can’t decide on a major? We’re here to help. **FUN, p. 7**

WRESTLING EMASCULATED
The WWE is supposed to be larger than life, but it’s more tiresome than entertaining. **SPO, p. 20**

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2009: Admins and students complain to Tech. 2010: Students complain to Tech. Progress!

STAFF COLUMNIST

But the lion's share of responsibility for the current state of affairs lies with Pakistan. They have failed to properly comprehend their country's geopolitical situation, they have failed to respond to challenges in a sensible and strategic way, and the mismanagement of the country by their ruling elite verges on the point of national suicide. While the conditions for a long-term strategic partnership are favorable, our would-be partners are too strategically myopic to embrace us, and too self-destructive to be of much help even if

Or is it time to find a different regional ally in the war on terror?

At issue is not merely Pakistan's reluctance to divert conventional forces from its eastern border with India to fight fundamentalists in its northwest. The military's fixation on India has led the country down a path that sets it in direct opposition to the interests of the United States. At every step of the way, from their partnership with U.S. enemies to acquire nuclear weapons, to their support for terrorist groups in Kashmir, to their past (and, if

Pakistan, Page 5

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How not to get tagged out at third base

Oh man, sometimes I wish I was back in high school. College is exciting and everything, don't get me wrong, but there is something to be said for a blossoming sexuality and raging hormones.

But just as I begin to yearn for my pre-MIT years, I remember all the horrible finger-banging I experienced back then.

If your formative years were anything like mine, surely you heard all about some girl getting the crap finger-banged out of her — with three fingers, no less. In typical high-schooler fashion, we all gossiped and slut-shamed her because, of course, letting a guy touch her between the legs makes her a slut. I wonder what my 14-year-old self would think of the present-day me...

Obviously, beneath all the judgment lay an itching curiosity. While I knew all about STDs and birth control, I could not wrap my mind around this fingers-in-the-cooter business. I mean, three fingers seemed like an awful lot — I could barely manage a tampon in there! But I was convinced that all boys that been born with this finger-

banging gene and that, as soon as my panties came off, a boy would know how the hell to work it.

As with most of my dreams, reality turned out to be a huge disappointment.

The first finger to ever penetrate my nether cavity belonged to this kid I met at a rock show, a drummer. Back then, I thought that musicians, diddling and banging stuff for fun, would be good lays.

The next morning, I woke up with a sore cooch and a broken spirit.

Anyway, one night found my drummer boy and me at a party by the beach, and, as is the case with any party, there was heavy alcohol consumption. Which lead to me grabbing his hand and walking a few yards, where he went in for the kill. Now, I knew this would be slightly uncomfortable, but holy fuck! This guy was ramming his fingers in my crotch like he lost his car keys

in my uterus! Even in my drunken haze, I could feel the sharp pain of his fist hitting my pubic bone, and I guess my yelps sounded more like moans because he took them as encouragement and kept going. I pushed his hand away, got up, and ran back into the party to grab my friend and go home.

The next morning, I woke up with a sore crotch and a broken spirit. All this anticipation had built up inside me and the experience was a total dud! Now that my theory of the Finger-Banging Gene had been disproven, I refused to let guys try it for years. But after getting with a guy who had the Midas touch, everything changed. I finally opened my heart to having my vagina probed with fingers and realized that — call Captain Obvious — finger-banging was not all itself bad. I had simply experienced finger-banging of the bad kind. That experience encouraged me to give it a shot with other guys, and even though it's totally a mixed bag and sometimes it still sucks a bit, at least I learned what works and what doesn't.

So, guys, what exactly is wrong with your finger-banging? The main complaint, after surveying my girlfriends, is that guys tend to

be too rough too fast. Before you dip your fingers in the honey pot, she needs to be aroused and lubed up. Don't get straight to business; a little seduction goes a long way. To get a girl hot once you have your hands down her pants, go for the clitoris. It has the highest concentration of nerve endings on the female body, which means it is pretty much the straightest path to arousal. If you can't find it, your girl certainly knows where it is, so don't be ashamed to ask her!

As far as the actual finger-banging goes, it's all about doing it with flair. Sure, in-and-out could get the job done, but this is about doing the job right, so come up with (or Google) more interesting moves. Be patient with your girl, too — we're not all built the same way, and the moves that worked on the previous girl might not work on the next one. If you feel that you're not doing it right, ask for feedback. Most of the girls I talked to said they would happily help a chap as long as he doesn't cause any physical discomfort to their lady-bits. So boys, trim and file those nails and get workin'.

M. is a senior in Course 10. She can be contacted at undress@tech.mit.edu.

FRESH PERSPECTIVES

Too busy to be ill

The ups and downs of Orientation

Years from now, I will still remember the moment when I first stepped into MIT. It was a cloudy Sunday, and the nearly-empty campus looked like a blank slate. Though I had traveled alone, my mom still wanted to accompany me on those first minutes in college, albeit symbolically, and the digital echo of her voice was the only sound that pierced the silence.

"I'm so glad you arrived safely!" she cried out; my blow-by-blow account of the short walk between Kendall and East Campus had roused up as much awe in her as the birth of a child. "It's a good sign! You're going to have a wonderful time!"

Fast forward a few days, and I was in MIT Medical, strapped to an IV. An ear piercing that I had gotten to celebrate my departure had developed a nasty infection, so my veins had to be blasted twice

a day with vancomycin, the anti-bacterial equivalent of rat poison. "That's a pretty inauspicious way to begin the school year," a nurse told me, looking at me with a mix of pity and amusement.

The hours of fun that I sandwiched in the middle of the day were sacred; there was no infection, there was no looming appointment at Medical.

"Let's hope the next four years aren't quite as horrible." I just laughed nervously and sank into my pillow.

For the next week, I led a double life.

Every day, I'd wake up at dawn, run to MIT Medical in my pajamas, get the IV, shower, change clothes, run to Orientation events, stuff myself with free food, introduce myself to fellow frosh, dash back to Medical, get the IV, eat, call home, go to more Orientation events, collapse on the bed, and brace myself for the harsh blare of my alarm clock.

I couldn't fit melancholy into such a physically and emotionally intense schedule. The hours of fun that I sandwiched in the middle of the day were sacred; there was no infection, there was no looming appointment at Medical. I lost myself in a colorful procession of finger painting, dance parties, introductions and, yes, enough free food to feed a small country.

At the end of the day, I'd check into Medical both excited and pleasantly tired, and as soon as the IV was in place I'd pop open my computer to video chat with the

people back home. The images that they received were bleak: the hulking mass of the IV, the sterile hospital walls, the mask of exhaustion on my face — everything that could have ruined my Orientation, summed up in pixels. “How are you feeling?” They’d ask, their voices heavy with concern. My response?

"I'm happy. This place is awesome!"

In a way, my first lesson here was the meaning of IHTFP and, in typical MIT fashion, it was truly a hands-on course. Life at MIT, or at least what little I've seen of it, is strongly dualistic; here, happiness and pain are intense, engrossing, and often simultaneous.

As we tumble out of the comforting brace of Orientation and into the brambles of real college life, those sensations will only get stronger, until they mix and clash and start whittling down everyone's sleep schedule. Get ready, class of 2014, and enjoy every minute of it.

MIT LIST VISUAL ARTS CENTER



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GRADUATE STUDENT RECEPTION
SEPTEMBER 14, 5-7PM

HTTP://LISTART.MIT.EDU



[illegible]

Miss, are you keeping an illegal pet in your room?

Of course not! Where did you get that idea?

Then what do you call that?

A hamster-shaped fish?

...Fish don't have fur.

It's his coat in preparation for Boston winters?

A four-panel comic strip. Panel 1: A student with glasses and a striped shirt sits in a chair, talking on a rotary phone. A speech bubble says, "I FINALLY HAVE AN M.I.T. I.D.!!". Panel 2: The student continues to talk excitedly. A speech bubble says, "CONGRATS! YOU'RE THE REAL THING NOW!!". Panel 3: The student is still on the phone. A speech bubble says, "A CARD-CARRYING NERD!!". Panel 4: A close-up of the student's face, looking thoughtful. A thought bubble says, "WITH STUDENT DISCOUNTS...".

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9		4				1	6	8
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		9						

Instructions: Fill in the grid so that each column, row, and 3 by 3 grid contains exactly one of each of the digits 1 through 9.

Draw Comics for *The Tech*!
join+comics@tech.mit.edu

LOOKING FORWARD TO SEEING YOUR NEW PLACE! WHAT'S THE ADDRESS?

MM HMM. YES, I'M TAKING 495, BUT I HAVE A GPS, SO I REALLY JUST NEED THE STREET ADDRESS.

...THEN SOUTH ON 18, OKAY, BUT I HAVE A GPS, SO IF YOU JUST WANT TO SKIP TO THE STREET ADDRESS, I CAN...

THANKS, I'M GLAD TO KNOW HIGHLAND ROAD COMES A MILE AFTER THE BIG INTERSECTION, BUT I KEEP SAYING I HAVE A GPS. CAN YOU TELL ME THE STREET ADDRESS?

...

TECHNICALLY THAT'S JUST MORE INFORMATION ON HOW TO GET TO YOUR PLACE, NOT THE ADDRESS ITSELF. IF YOU COULD—

...I APPRECIATE THAT YOU WANT TO HELP, BUT I'M *IGNORING* YOU AND JUST WAITING FOR THE ...

LISTEN, I JUST REMEMBERED I NEED TO MAIL YOU A LETTER. WHAT'S YOUR ADDRESS?

MHM ... OKAY...

GREAT, THANKS! I'LL SEE YOU IN AN HOUR!

A STORY TOLD IN FILE NAMES:

Location: C:\user\research\data

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data_2010.05.28_re-test.dat	4:29 PM 5/28/2010	421 KB	DAT file
data_2010.05.28_re-re-test.dat	5:43 PM 5/28/2010	420 KB	DAT file
data_2010.05.28_calibrate.dat	7:17 PM 5/28/2010	1,256 KB	DAT file
data_2010.05.28_huh??.dat	7:20 PM 5/28/2010	30 KB	DAT file
data_2010.05.28_WTF.dat	9:58 PM 5/28/2010	30 KB	DAT file
data_2010.05.29_aaarrngh.dat	12:37 AM 5/29/2010	30 KB	DAT file
data_2010.05.29_#&\$@*&!!!.dat	2:40 AM 5/29/2010	0 KB	DAT file
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analysis_graphs.xls	7:13 AM 5/29/2010	455 KB	XLS file
ThesisOutline!.doc	7:26 AM 5/29/2010	38 KB	DOC file
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JUNK...	2:45 PM 5/29/2010		Folder
data_2010.05.30_startingover.dat	8:37 AM 5/30/2010	420 KB	DAT file

Type: Ph.D Thesis Modified: too many times Copyright: Jorge Cham www.phdcomics.com



Solution, page 12

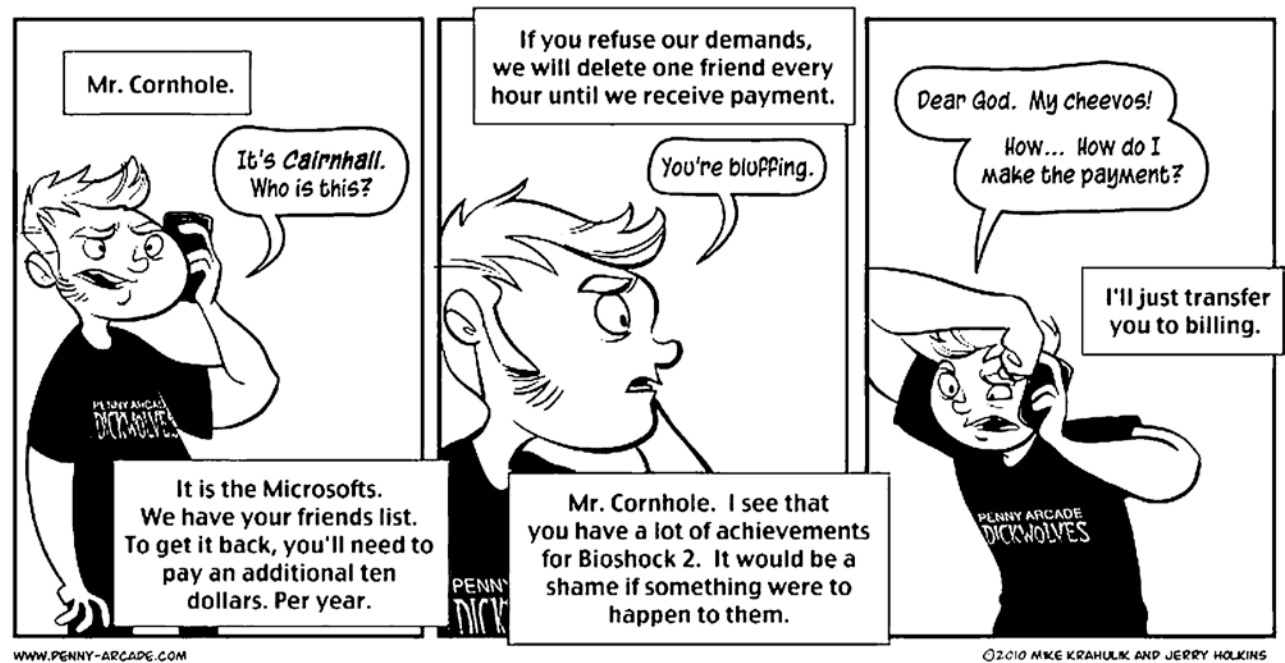
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| 51 Football great Merlin | 56 Swear to |
| 53 Ancient Turkish city | 57 Erotic |
| 54 Word defining 21A, 55A,
3D, and 30D | 58 Mythical queen |
| | 63 However, briefly |

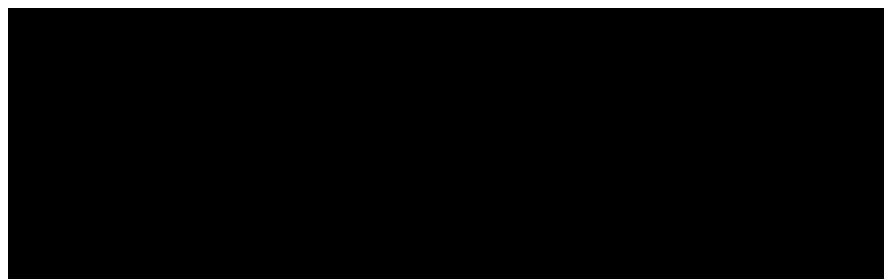
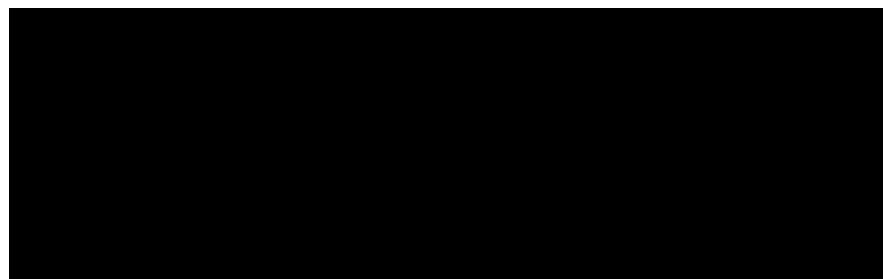
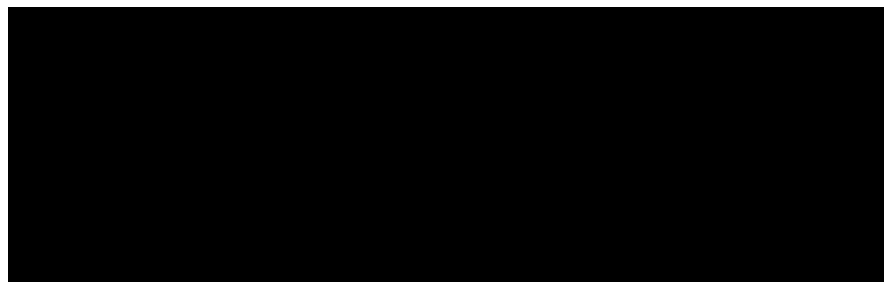
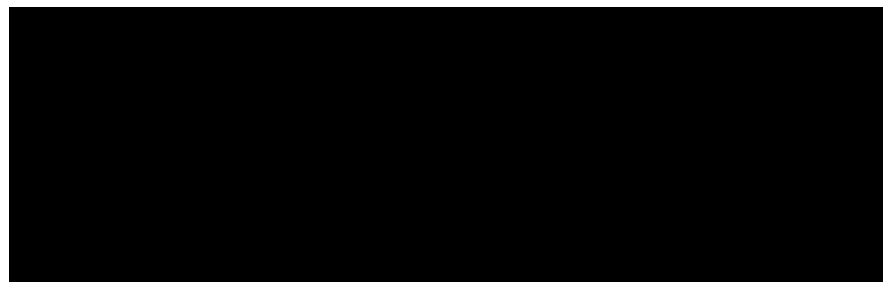
The Ultimatum



by Jerry Holkins
and Mike Krahulik



Dilbert by Scott Adams



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FUN FUN FUN FUN FUN FUN FUN FUN FUN FUN FUN

Plaintiffs in stem cell case are OK with Bush policy

Stem cells, from Page 1

ditional parties on the side of Sherley and Deisher, including one called “embryos”; the Court of Appeals ruled that those parties did not have standing and they are no longer part of the lawsuit.

Lawyers from three institutions are associated with Sherley and Deisher, according to court filings: the law firm of Gibson, Dunn, & Crutcher; Alliance Defense Fund; and Human Life Advocates.

Gibson & Dunn referred inquiries to the Alliance Defense Fund. The Alliance Defense Fund and Human Life Advocates have both not returned inquiries.

Sherley and Deisher were on Capitol Hill speaking to legislative aides to make the case against a change in the law to repeal that could make human embryonic stem cell research unambiguously legal, the *Journal* reported.

Sherley and Deisher both claim human

embryonic stem cell research is morally objectionable and unlikely to be successful, the *Journal* said. Both are adult stem cell researchers.

Sherley’s Friday filing

Sherley and Deisher filed their opposition to the emergency motion at 8:46 p.m. on Friday night before the long weekend. Their deadline was Friday.

The government requested the judge rule by today, otherwise they intend to ask tomorrow that the Court of Appeals for the District of Colombia intervene.

Their 23-page motion took odds with many of the government’s claims, especially comments by NIH Director Francis S. Collins.

They say “the most Dr. Collins can muster in claiming irreparable injury is that embryonic stem cell research ‘offer[s] hope’ to patients ... and that beneficial treatments are ‘possible’ in the future.”

They also say that Collins “resorts to conjecture that the experiments ‘may’ take a long time to restart and that researchers ‘may’ move to other countries.” “This falls far short of the *imminent* and *irreparable* injury that law requires,” they said.

CAMR wants to file friend-of-court brief

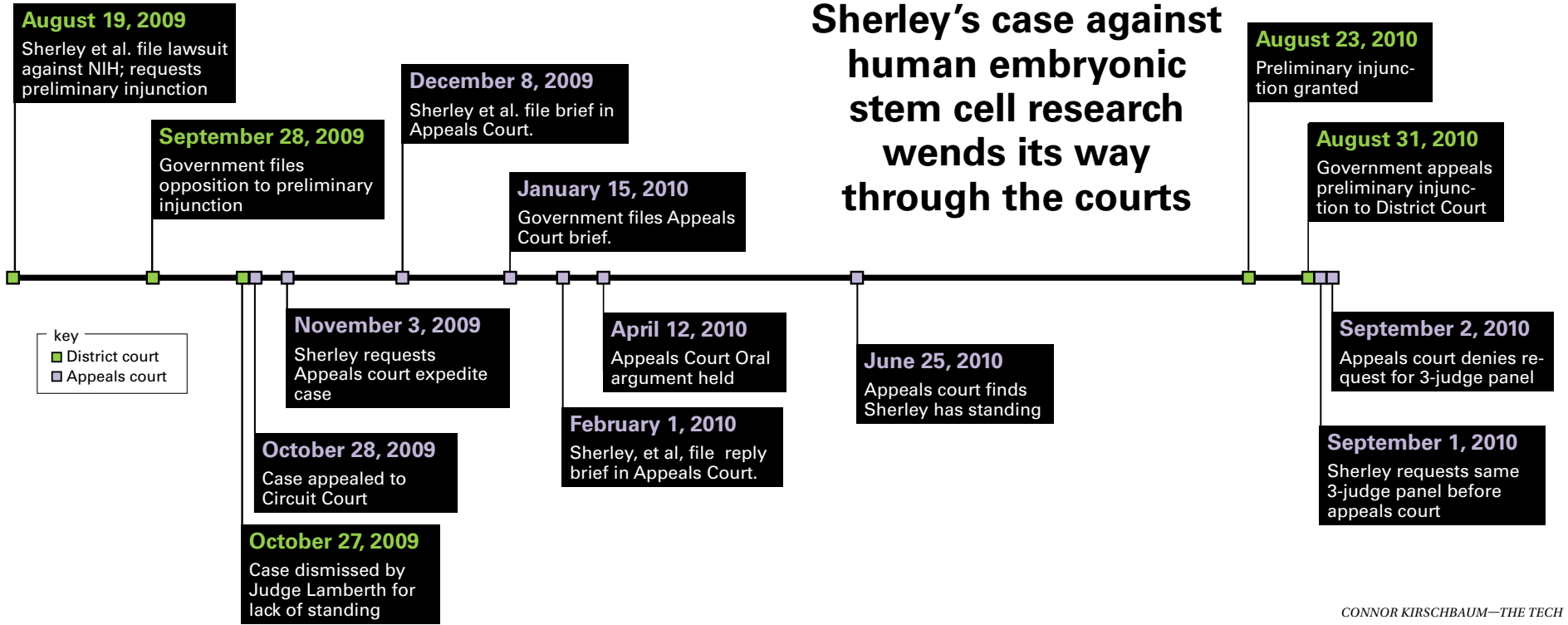
Also on Friday, the Coalition for the Advancement of Medical Research, a stem cell advocacy group, asked the Court for permission to file a friend-of-the-court, or *amicus curiae*, brief.

CAMR’s brief argues that the lack of a stay on the preliminary injunction will “effectuate a dramatic change and irreparably damage one of NIH’s most important research programs.”

However, CAMR’s brief to the court relies substantially on NIH Director Collins’ declaration—many points of that declaration are challenged by Sherley’s motion.



MICHAEL MCGRAW-HERDEG—2007 TECH FILE PHOTO
James L. Sherley, a former MIT professor, is a plaintiff in the lawsuit against the NIH to halt federal funding of human embryonic stem cell research.



CONNOR KIRSCHBAUM—THE TECH

MIT
Entrepreneurship
CENTER

Graduate Entrepreneurial Course Highlights - Fall 2010

6.898 Linked Data Ventures: New Web Technologies, Standards, and Business Models
Linked Data Ventures is a graduate-level course that combines both practitioner perspectives and practical hands-on experience with Semantic Web technologies. Students will learn about the Semantic Web from executives and practitioners using Semantic Web technologies in their companies, and will learn how to use these technologies through lectures and hands-on labs. **Lecture:** T EVE (4-7 PM) (4-149) **Lab:** R EVE (4-6 PM) (4-149)

10.807/15.371 Innovation Teams
i-Teams (short for “Innovation Teams”) is a unique MIT course that assembles cross-disciplinary teams of students from across MIT. The goal of i-Teams is to teach students the process of science and technology commercialization focusing on how to judge a technology’s commercial potential. Each team has access to faculty, practitioners, business mentors, and fellow students throughout their project. **Lecture:** MW EVE (5.30-8 PM) (32-144)

15.399 Entrepreneurship Lab
Teams of science, engineering, and management students participate actively one day a week on-site with the top management of high tech start-ups in order to gain experience in starting and running a new venture. Student projects focus on one urgent aspect of the start-up, such as selection of target market, design of market-entry strategy, choice of sales approach to initial customers, etc. **Lecture:** W EVE (6-9 PM) (E51-395)

Other Course Offerings for Fall 2010		
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New studying advice a surprise

By Benedict Carey

THE NEW YORK TIMES

the new teacher's approach? Or the school's philosophy? Maybe the child isn't "a good fit" for the school.

Such theories have developed in part because of sketchy education research that doesn't offer clear guidance. Student traits and teaching styles surely interact; so do personalities and at-home rules. The trouble is, no one can predict how.

Yet there are effective approaches to learning, at least for those who are motivated. In recent years, cognitive scientists have shown that a few simple techniques can reliably improve

what matters most: how much a student learns from studying.

The findings can help anyone, from a fourth grader doing long division to a retiree taking on a new language. But they directly contradict much of the common wisdom about good study habits, and they have not caught on.

For instance, instead of sticking to one study location, simply alternating the room where a person studies improves retention. So does studying

Studying habits, Page 16

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Solution to Sudoku

from page 7

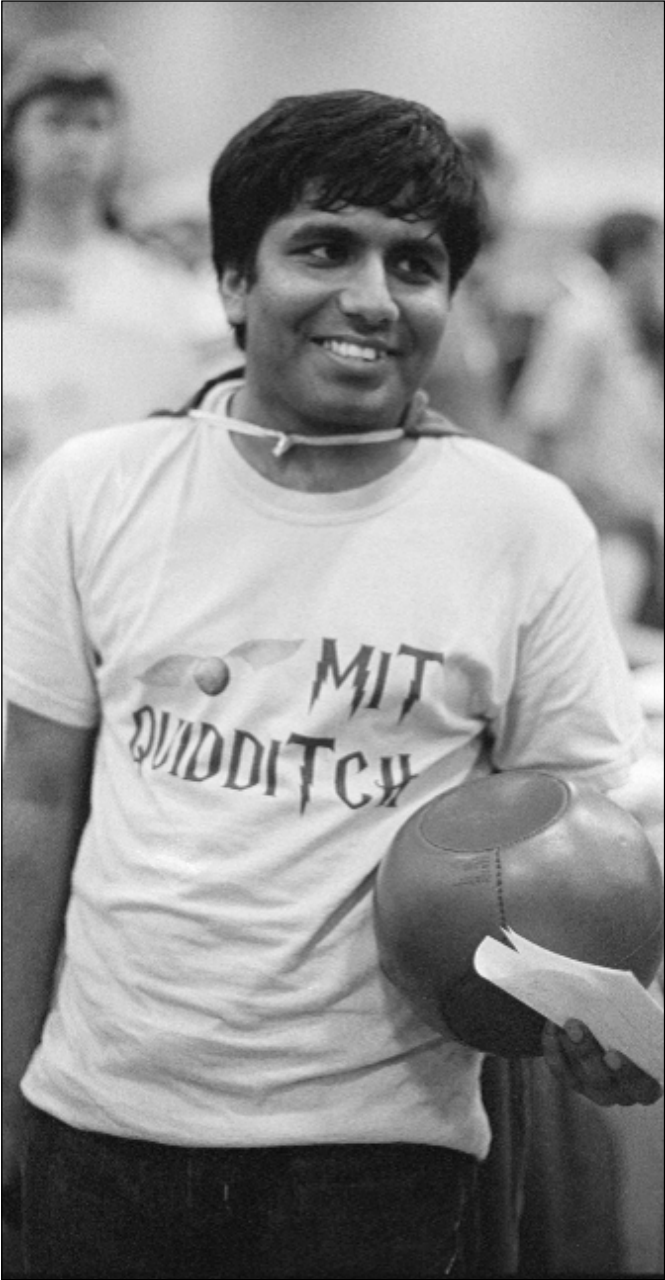
7	2	1	6	8	9	3	4	5
5	4	8	2	3	7	6	9	1
6	9	3	5	4	1	7	8	2
8	3	2	7	1	6	9	5	4
1	5	6	8	9	4	2	3	7
9	7	4	3	5	2	1	6	8
3	1	5	9	2	8	4	7	6
4	8	7	1	6	3	5	2	9
2	6	9	4	7	5	8	1	3

Solution to Crossword

from page 8

H	E	M	A	L	A	L	A	S	C	L	E	F	
A	Q	A	B	A	H	U	L	K	Z	U	L	U	
L	U	K	E	S	A	L	A	I	E	R	I	N	
T	A	E	A	L	B	U	M	J	A	C	K	E	T
S	L	U	G	G	O	S	O	U	G	H			
	P	A	N	D	A	M	U	S	C	L	E		
A	V	I	V	A	C	A	R	P	E	R	U	G	
M	A	T	E	K	I	L	O	S	J	U	N	G	
B	Y	E	L	A	D	E	D	L	A	I	T	Y	
I	A	M	N	O	T	S	E	E	M	S			
	T	E	M	P	O	M	C	B	E	A	L		
B	A	S	E	B	A	L	L	H	I	T	S	D	
I	V	E	S	N	O	S	E	E	T	H	A	N	
N	E	X	T	D	Y	E	R	R	H	I	N	E	
D	R	Y	S	U	S	N	A	N	O	P	A	R	

At Midway, some weren't Muggles



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Draper looks for solutions to energy problems

By Robert Trigaux
ST. PETERSBURG TIMES

Draper Lab, the MIT spinoff whiz kids out of Cambridge, Mass., know how to make super-small electronic and advanced medical devices. The firm recently set up facilities both in St. Petersburg and Tampa, Fla. to expand their footprint in high-end security devices and biomedical innovations.

In St. Petersburg, Draper's multichip module facility makes extremely downsized electronic components still able to do the jobs of far bigger and heavier components. That's something that keenly interests the military and federal government, key Draper clients.

A separate Draper bioengineering center on the campus of the University of South Florida in Tampa is working with USF on, among other things, efforts at the nearby James A. Haley VA Medical Center to improve the treatment of traumatic brain injuries.

Draper vice president Len Polizzotto and St. Petersburg facility chief John R. Burns stopped by the *St. Petersburg Times* last week to discuss the company's recent arrival in Florida and some of its cutting edge work. Here are some highlights from that conversation.

Draper's invested \$18 million in buying a St. Petersburg building and equipping it to make multichip modules for government clients. How's it going after one and a half years?

Burns: We've been fortunate to find really talented local people. We're up to 21 people with a third being staff process engineers and the other two thirds highly skilled technicians. Our work is almost semiconductor-like. We are on the forefront of miniaturization.

So how small are we talking about?

Polizzotto: The typical multichip module (MCM) reduces electronics by volume by a thousand. New technology is taking the next step and reducing it again by a factor of 10. Reducing weight is key. The less something weighs, for instance, the further it can fly. Or you can use that

weight for other purposes.

Burns: Our sweet spot is in making high value-products, high-end electronics in niche areas, like maybe something for our special forces.

How much capacity for growth do you have in the St. Petersburg facility?

Burns: We're running one shift now, but that's already three times what we had in our Draper module facility in Massachusetts. It had gotten to the point in Cambridge where we had to choose one product need over another. Here we can add more shifts and scale up.

That's specialized work. Have you been able to fill jobs with people here in Tampa Bay?

Burns: It's not been a problem. We've hired a couple of folks from USF and tapped St. Petersburg College ó graduates with associate de-

grees in electronics ó as skilled technicians.

John, have you had a chance to settle into St. Petersburg yet?

Burns: My wife and I love the downtown waterfront. Right now, we're renting, but we have started looking at some housing. There are some good deals out there.

And how's the bioengineering center at USF in Tampa doing?

Polizzotto: Our Tampa center chief, Shankar Sundaram, could not be with us on this visit, but we have 15 full-time workers there plus four USF interns and two Draper Lab Fellows from the university. We already have more than \$50+million in joint partnership proposals with USF, mostly in basic research.

In what areas is Draper focusing its resources?

Polizzotto: In three areas. Secu-

rity, as shown by our St. Petersburg effort. Healthcare, reflected in our Tampa center. And energy. If we can improve the efficiency of, say, a coal plant by 5 percent, you would see enormous gains. It would be great to establish an energy center down here.

An energy center here?

Polizzotto: Yes, it would be the third leg of our stool in Florida. We're already working with (St. Petersburg's) Progress Energy Florida on efficiencies in energy production. But we have also submitted a proposal to the state to develop a smart energy micro-grid using Draper sensors and controls.

How might that work?

Polizzotto: The idea is to pick a neighborhood and bring in a thousand solar panels and transformers to share energy. One transformer

would be shared by five houses. So if one of those five houses wanted to run a dryer, it could pull energy not just from its own solar panel but from all five shared panels.

You say the CEO of Draper Lab is tossing out the first pitch at a Tampa Bay Rays game?

Polizzotto: We made sure he's warmed up to throw a strike.

Burns: We thought about adding a gyroscope to the ball to help, but it probably isn't necessary.

About Draper Laboratory

Key areas: Security, health care, energy fields.

Employees: 1,400 total, 36 so far in Tampa Bay.

Florida facilities: Multichip module manufacturing on 16th Street in St. Petersburg; bioengineering center on Spectrum Boulevard on USF's Tampa campus.



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imagination at work

Forget what you know about good study habits

Studying habits, from Page 12

distinct but related skills or concepts in one sitting, rather than focusing intensely on a single thing.

“We have known these principles for some time, and it’s intriguing that schools don’t pick them up, or that people don’t learn them by trial and

error,” said Dr. Robert A. Bjork, a psychologist at UCLA. “Instead, we walk around with all sorts of unexamined beliefs about what works that are mistaken.”

Take the notion that children have specific learning styles, that some are “visual learners” and others are auditory; some are “left-brain” students, others “right-brain.” In a recent review of the relevant research, published in the journal Psychological Science in the Public Interest, a team of psychologists found almost zero support for such ideas.

“The contrast between the enormous popularity of the learning-styles approach within education and the

lack of credible evidence for its utility is, in our opinion, striking and disturbing,” the researchers concluded.

Ditto for teaching styles, researchers say. Some excellent instructors caper in front of the blackboard like summer-theater Falstaffs; others are reserved to the point of shyness.

“We have yet to identify the common threads between teachers who create a constructive learning atmosphere,” said Dr. Daniel T. Willingham, a psychologist at the University of Virginia and author of the book “Why Don’t Students Like School?”

But individual learning is another matter, and psychologists have discovered that some of the most hallowed advice on study habits is flat wrong. For instance, many study skills courses insist that students find a specific place, a study room or a quiet corner of the library, to take their work. The research finds just the opposite. In one classic 1978 experiment, psychologists found that college students who studied a list of 40 vocabulary words in two rooms — one windowless and cluttered, the other modern, with a view on a courtyard — did far better on a test than students who studied the words twice, in the same room. Later studies have confirmed the finding, for a variety of topics.

The brain makes subtle associations between what it is studying and the background sensations it has at the time, the authors say, regardless of whether those perceptions are conscious. It colors the terms of the Versailles Treaty with the wasted fluorescent glow of the dorm study room, say; or the elements of the Marshall Plan with the jade-curtain shade of the willow tree in the backyard. Forcing the brain to make multiple associations with the same material may, in effect, give that information more neural scaffolding.

“What we think is happening here is that, when the outside context is varied, the information is enriched, and this slows down forgetting,” said Bjork, the senior author of the two-room experiment.

Varying the type of material studied in a single sitting seems to leave a deeper impression on the brain than does concentrating on just one skill at a time. Musicians have known this for years, and their practice sessions often include a mix of scales, musical pieces and rhythmic work. Many athletes stick to that line of thinking and routinely combine their workouts with strength, speed and skill drills.

The advantages of this approach to studying can be striking, in some topic areas. In a study recently posted online by the journal Applied Cognitive Psychology, Doug Rohrer and Kelli Taylor of the University of South Florida taught a group of fourth graders four equations, each to calculate a different dimension of a prism. Half of the children learned by studying repeated examples of one equation, say, calculating the number of prism faces when given the number of sides at the base, then moving on to the next type of calculation, studying repeated examples of that. The other half studied mixed problem sets, which included examples all four types of calculations grouped together. Both groups solved sample problems along the way, as they studied.

A day later, the researchers gave all of the students a test on the material, presenting new problems of the same type. The children who had studied mixed sets did twice as well as the others, outscoring them 77 percent to 38 percent. The researchers have found the same in experiments involving adults and younger children.

“When students see a list of problems, all of the same kind, they know the strategy to use before they even read the problem,” said Dr. Rohrer. “That’s like riding a bike with training wheels.”

With mixed practice, he added, “each problem is different from the last one, which means kids must learn how to choose the appropriate procedure — just like they had to do on the test.”

These findings extend well beyond math, even to aesthetic intuitive learning. In an experiment published last month in the journal Psychology and Aging, researchers found that college students and adults of retirement age were better able to distinguish the painting styles of 12 unfamiliar artists after viewing mixed collections (assortments, including works from all 12) than after viewing a dozen works from one artist, all together, then moving on to the next painter.

The finding undermines the common assumption that intensive immersion is the best way to really master a particular genre, or type of creative work, said Dr. Nate Kornell, a psychologist at Williams College and the lead author of the study.

“What seems to be happening in this case is that the brain is picking up deeper patterns when seeing assortments of paintings; it’s picking up what’s similar and what’s different about them,” often subconsciously.

Cognitive scientists do not deny that cramming can lead to a better grade on a given exam. But hurriedly jam-packing a brain is akin to speed-packing a cheap suitcase, as most students quickly learn — it holds its new load for a while, then most everything falls out.

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“With many students, it’s not like they can’t remember the material” when they move to a more advanced class, said Dr. Henry L. Roediger III, a psychologist at Washington University in St. Louis. “It’s like they’ve never seen it before.”

When the neural suitcase is packed carefully and gradually, it holds its contents for far, far longer. An hour of study tonight, an hour on the weekend, another session a week from now: such so-called spacing improves later recall, without requiring students to put in more overall study effort or pay more attention, dozens of studies have found.

No one knows for sure why. It may be that the brain, when it revisits material at a later time, has to relearn some of what it has absorbed before adding new stuff — and that that process is itself self-reinforcing.

“The idea is that forgetting is the friend of learning,” said Kornell. “When you forget something, it allows you to relearn, and do so effectively, the next time you see it.”

That’s one reason cognitive scientists see testing itself — or practice tests and quizzes — as a powerful tool of learning, rather than merely assessment. The process of retrieving an idea is not like pulling a book from a shelf; it seems to fundamentally alter the way the information is subsequently stored, making it far more accessible in the future.

Roediger uses the analogy of the Heisenberg uncertainty principle in physics, which holds that the act of measuring a property of a particle alters that property: “Testing not only measures knowledge but changes it,” he says — and, happily, in the direction of more certainty, not less.

In one of his own experiments, Roediger and Jeffrey Karpicke, also of Washington University, had college students study science passages from a reading comprehension test, in short study periods. When students studied the same material twice, in back-to-back sessions, they did very well on a test given immedi-

ately afterward, then began to forget the material.

But if they studied the passage just once and did a practice test in the second session, they did very well on one test two days later, and another given a week later.

“Testing has such bad connotation; people think of standardized testing or teaching to the test,” Roediger said. “Maybe we need to call it something else, but this is one of the most powerful learning tools we have.”

Of course, one reason the thought of testing tightens people’s stomachs is that tests are so often hard. Paradoxically, it is just this difficulty that makes them such effective study tools, research suggests. The harder it is to remember something, the harder it is to later forget. This effect, which researchers call “desirable difficulty,” is evident in daily life. The name of the actor who played Linc in “The Mod Squad”? Francie’s brother in “A Tree Grows in Brooklyn”? The name of the co-discoverer, with Newton, of calculus?

The more mental sweat it takes to dig it out, the more securely it will be subsequently anchored.

None of which is to suggest that these techniques — alternating study environments, mixing content, spacing study sessions, self-testing or all the above — will turn a grade-A slacker into a grade-A student. Motivation matters. So do impressing friends, making the hockey team and finding the nerve to text the cute student in social studies.

“In lab experiments, you’re able to control for all factors except the one you’re studying,” said Willingham. “Not true in the classroom, in real life. All of these things are interacting at the same time.”

But at the very least, the cognitive techniques give parents and students, young and old, something many did not have before: a study plan based on evidence, not schoolyard folk wisdom, or empty theorizing.

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Once a dynamo, technology sector is slow to hire

Disappointing job numbers raise questions about whether tech can revive US economy

By Catherine Rampell
THE NEW YORK TIMES

For years the technology sector has been considered the most dynamic, promising and globally envied industry in the United States. It escaped the recession relatively unscathed, and profits this year have been soaring.

But as the nation struggles to put people back to work, even high-tech companies have been slow to hire, a sign of just how difficult it will be to address persistently high joblessness. While the labor report released last week showing August figures provided mildly positive news on private-sector hiring, the unemployment rate was 9.6 percent.

The disappointing hiring trend raises questions about whether the tech industry can help power a recovery and sustain U.S. job growth in the next decade and beyond. Its tentativeness has prompted economists to ask, “If high tech isn’t hiring, who will?”

“We are talking about people with very particular, advanced skills out there who are at this point just not needed anymore,” says Bart van Ark, chief economist at the Conference Board, a business and economic research organization. “Even in this sector, there is tremendous insecurity.”

Government labor reports released this year, including the most recent one, present a tableau of shrinking opportunities in high-skill fields.

Job growth in fields like computer systems design and Internet publishing has been slow in the past year. Employment in areas like data processing and software publish-

ing has actually fallen. Additionally, computer scientists, systems analysts and computer programmers all had unemployment rates of around 6 percent in the second quarter of this year.

While that might sound like a blessing compared with the rampant joblessness in manufacturing, it is still significantly higher than the unemployment rates in other white-collar professions.

The chief hurdles to more robust technology hiring appear to be increasing automation and the addition of highly skilled labor overseas. The result is a mismatch of skill levels here at home: not enough workers with the cutting-edge skills coveted by tech firms and too many people with abilities that can be duplicated offshore at lower cost.

That’s a familiar situation to many out-of-work software engineers, whose skills start depreciating almost as soon as they are laid off, given the dynamism of the industry.

“I’m sending out lots and lots and lots of applications, to everywhere within a 50-mile radius,” says Rosamaria Carbonell Mann, 49, a software engineer who was terminated in June when her employer closed its branch in Corvallis, Ore., and sent the work to China.

Corvallis was once a hotbed for tech startups. But Mann said that with layoffs from other tech companies in the area, including Hewlett-Packard, the city now has a glut of people like herself: unemployed engineers with multiple degrees.

“I apply for everything I can find, but there are just not that many jobs out there,” she said.

Nevertheless, many high-tech companies large and small say they

are struggling to find highly skilled engineering talent in the United States.

“We are firing up our college recruiting program, enduring all manner of humiliation to try to fill these jobs,” said Glenn Kelman, chief executive of Redfin, an online brokerage agency for buying and selling homes that is based in Seattle and San Francisco. “I do think we’re still chasing them, not the other way around.”

He added, “If there’s the one enclave that has been completely unaffected by recession, it would be Stanford computer science students.”

Meanwhile, an earlier generation of engineers is scouring for jobs and having to compete with a more globalized pool of talent. There are no definitive statistics on how many jobs are being moved overseas. But economists who follow highly skilled employment say that some of the most prominent companies that laid off workers during the recession, like IBM, are expanding their work forces abroad.

“Certainly a lot of these IT services firms plus the core software firms like Oracle are globalizing their work, or, as they put it, ‘re-balancing’ their work forces,” says Ronil Hira, an assistant professor of public policy at the Rochester Institute of Technology.

In the past, the U.S. jobs most susceptible to being shipped abroad were lower-skilled positions. But now emerging economies have been harvesting their long-term investments in math and science education and attracting high-tech firms — and not just textile factories or call centers — to their shores.

These higher skills have become commodities, said Catherine L. Mann, a global finance professor at the Brandeis University International Business School who studies the outsourcing of jobs. The programming language “C++ is now an international language,” she said. “If that’s all you know, then you’re competing with people in India or China who will do the work for less.”

In addition to lower wages, developing countries offer significant consumer growth, giving businesses a reason to make more products closer to the buyer, and hire locally.

And increasingly, these new, lower-cost research centers, while perhaps initially intended to adapt products for local use, are becoming sources of innovation themselves.

“There’s been this assumption that there’s a global hierarchy of work, that all the high-end service work, knowledge work, R&D work would stay in U.S., and that all the lower-end work would be transferred to emerging markets,” said Hal Salzman, a public policy professor at Rutgers and a senior faculty fellow at Heldrich Center for Workforce Development.

“That hierarchy has been upset, to say the least,” he said. “More and more of the innovation is coming out of the emerging markets, as part of this bottom-up push.”

The narrative is familiar to Mann, the unemployed software engineer. She said her employer, International Gaming Technology, initially told her office that it was opening a branch in China to work with the company’s casino clients in Macau and Australia.

She said she was told that the new branch would be tailoring products to local needs and doing some back-office work. But a year later it absorbed all the operations once performed by the Corvallis staff. International Gaming Technology, based in Reno, Nev., did not respond to repeated requests for comment.

This is the second time, Mann said, that an employer has sent her job abroad since she received her master’s in computer science more than two decades ago; the last time was in 2001. This week she starts a yearlong program to upgrade her programming skills, paid for by a federal program that assists workers who have been displaced by international trade.

The experience of Mann and others like her suggests that the technology industry may not be the savior of the U.S. job market and a magic bullet for a moribund economy — even though the Obama administration has called for a revival of math and science training and emphasized the need for U.S. companies to take the lead in fields like clean energy.

Instead, some economists and policymakers are looking to health care to lead an employment surge. They point to the field’s growing demand for new services, the need for physical proximity for many patient procedures and a bureaucracy that entails layer upon layer of jobs.

Because these jobs seem more secure, Mann said she briefly considered making a move into health care.

“That’s something that can’t be outsourced as far as I can tell, but it’s not for me,” she said. “I don’t do well looking at people’s blood.”

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Choice of clerks highlights Supreme Court’s polarization

By Adam Liptak
THE NEW YORK TIMES

WASHINGTON — Each year, 36 young lawyers obtain the most coveted credential in U.S. law: a Supreme Court clerkship. Clerking for a justice is a glittering capstone on a resume that almost always includes outstanding grades at a top law school, service on a law review and a prestigious clerkship with a federal appeals court judge.

Justice Clarence Thomas apparently has one additional requirement. Without exception, the 84 clerks he has chosen over his two decades on the court all first trained with an appeals court judge appointed by a Republican president.

That unbroken ideological commitment is just the most extreme example of a recent and seldom examined form of political polarization on the Supreme Court. These days the more conservative justices are much

more likely than were their predecessors to hire clerks who worked for judges appointed by Republicans. And the more liberal justices are more likely than in the past to hire from judges appointed by Democrats.

Each justice typically hires four clerks a year. Since Chief Justice John G. Roberts Jr. joined the court in 2005, Justice Antonin Scalia has not hired any clerks who had worked for a judge appointed by a Democratic president, and Justice Samuel A. Alito Jr. has hired only two. At the other end of the ideological spectrum, only four of Justice Ruth Bader Ginsburg’s clerks on the Roberts court came from judges appointed by Republicans. The early data on President Barack Obama’s two appointees, Justices Sonia Sotomayor and Elena Kagan, show a similar pattern.

By contrast, Chief Justice Warren E. Burger, a conservative appointed by President Richard M. Nixon who

led the court from 1969 to 1986, hired roughly even numbers of clerks who had worked for judges appointed by Democrats and Republicans. Judge Richard A. Posner, a generally conservative judge appointed to the bench by President Ronald Reagan, clerked for Justice William J. Brennan Jr., a liberal.

The recent divide in the selection of clerks amplifies the ideological rifts on a polarized court, one political scientists say is the most conservative in recent memory. And it echoes as clerks go on to prominent careers in government, the legal academy and major law firms.

Supreme Court law clerks share the justices’ chambers, do much of their work and influence their thinking. They make recommendations about which cases the court should hear, help prepare the justices for oral arguments, discuss the cases with them and draft major portions of the opinions and dissents.

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ESD.931 Supply Chain Strategy: Improving Functional Alignment (Units: 3-0-3; First Half.) Students will learn through practice specific techniques to capture, evaluate and reformulate a supply chain strategy, improving, among other things, its alignment with the business strategy.

ESD.932 Supply Chain Strategy: Preparing for the Future (Units: 3-0-3; Second Half.) Students will learn a systematic approach to uncover assumptions and biases by developing mental maps and to use scenario thinking to prepare a firm’s supply chain strategy for step changes.

Schedule: Tue & Thu / 1:00-2:30 pm - **Room:** E51-057
Instructors: Dr. Mahender Singh, Director SC2020 Project.
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