



John Johnson awarded Feynman Prize

FEYNMAN PRIZE COMMITTEE

The committee met once, on February 6th, 2013, to consider the seventeen nominees for the 2013 prize. The field for the Feynman prize is always very strong. Creative and innovative teaching is alive and well at Caltech, and so this committee's decision is often a difficult one.

However this year, one candidate immediately emerged as exceptional – a “true outlier,” in the words of a committee member – and the committee's decision virtually made itself.

We unanimously and enthusiastically recommend that the 2013 Feynman Prize be awarded to Prof. John A. Johnson, Assistant Professor of Astronomy and Astrophysics.

Prof. Johnson, who came to Caltech in 2009, received ten nominations from students at both the undergraduate and graduate levels for his teaching across three classes: Ay 117: Statistics and Data Analysis in Astronomy; Ay 105: Optical Astronomy Instrumentation Lab; and Ay 20: Basic Astronomy and the Galaxy.

All writers in one way or another denominated him “by far, my favorite professor at Caltech” or “the best teacher at Caltech.” They lauded his “passion [not just] for education, but ... for finding the best way possible to educate.”

Many had taken more than one class with Prof. Johnson, and almost all had words to the effect that they

had “learned much more through [his] teaching style than [they] had in most of [their] other classes at Caltech.” Some even suggested that his influence went beyond the classroom: one student lauded “the influence he has had on our department in the three years he has been a professor” and another claimed that his teaching was so extraordinary that it “rocked the boat in the astronomy department, challenging our conceptions of how astronomy, and the sciences in general, are taught.”

Certainly, his influence on his students was profound. Praising him as “enthusiastic, proficient and insightful,” one student said that he is “a remarkable teacher who can not only enlighten students in the classroom but also sculpt their spirits for their future careers.” Another called him “the kind of teacher who can change one's life forever.” One of his graduate students said that that “he reminded me ... why I wanted to be a scientist in the first place.” Another called the experience of being his student “life-changing and inspirational.”

Students praised many features of Prof. Johnson's teaching and mentoring:

- Making keeping a blog part of students' assessment in AY 20



Prof. John Johnson has been lauded by his students for his exemplary teaching abilities, as well as his active interest in learning.

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and also allowing them to submit ‘outside’ work (anything they'd done in connection with the course) for grading;

- Forbidding discussion of grades, which “made the class less stressful, as well as encouraging [us] to always do [our] best and never ‘coast’”;
- Emailing Youtube videos to the class to illustrate the day's material and answering emailed questions at length;
- Arranging a private tour of Palomar Observatory and, when a student expressed interest, organizing a class visit to the Caltech Adaptive Optics lab;
- Bringing in guest lecturers not only to speak on the material, but also to answer students' career questions;
- Working with his TA in setting up labs so that he'd know firsthand exactly what the students were working on;

• Holding office hours late at night for the students' convenience;

• Setting up “ExoLab” – weekly meetings in which his research group would talk about current results and work together on problems'

• His ability to “appear normal”; his approachability, “personal focus,” and clear concern for “students as people.”

But the feature that occasioned the most impassioned paeans was his innovative use of class time. Rather than giving long lectures in class and then assigning illustrative problem sets as homework, Prof. Johnson kept lectures very brief (where he gave them at all) and divided the class into small groups, and has them work on worksheets together. He and the TA go from group to group to help with problems and answer questions

as they arose. Students found this approach extraordinarily helpful. A “spirit of exploration” characterized AY 20, said one participant; the “worksheets ... lead [sic] us step-by-step to discover for ourselves the important results in astronomy.” Attendance was consistently above 90%, and one student regretfully anticipated having “a huge gap in my life next term where all the wonderful hours of Ay 20 used to reside.” And all who'd taken AY 117 likewise praised Prof. Johnson's use of this technique in teaching statistics. One student said that it showed “how to structure a course that provides a deep theoretical understanding of underlying principles while simultaneously training students how to correctly apply these methods within their own day-to-day research activities.” Another remarked on the “efficiency and fertility of Prof. Johnson's class: theory digested, independent thinking trained and cooperation developed.” Making mistakes was no longer a thing to be feared; students learned that “errors are another way of learning.” All were “delighted” that a normally dry subject like statistics could be taught in such a user-friendly way.

In sum, we recommend that Johnson be awarded the Feynman prize because, in the words of his students, he “without question belongs to the extraordinary contingent of people that ... leaves one groping for superlatives.” “Classroom experiences that are intellectually engaging, practical, and entertaining are incredibly rare. Through his teaching style, attention to detail, and unique course structure, Professor Johnson provides just such an experience.”

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< **100** words about the world this week – topics sorted from good to bad

by *The Tech Eds*

Advance in HIV research	1st time scientists track immune response for multiple strains	[NATURE]
BRAIN Initiative unveiled	\$100 million sought by Obama to fund major brain research	[CNN]
LA plans water cleaning	\$290 million-a-year project would clean up pollution in rainwater	[NYT]
Anti-blasphemy law	3 -week ultimatum given to Bangladesh gov to impose law, rejected	[BBC]
N. Korea nuke test	4th test country has made is hinted at to S. Korean intelligence	[BBC]
Search for kidnapped	2 boys taken by father from mother-in-law's house, believed on boat	[Fox]
Religious strife in Cairo	1 killed and 80 injured in conflict following funeral of 4 Christians	[BBC]

Food with Mannion!

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The Tech will be beginning a new column to chronicle the foodie experiences of new writers every other week... The Catch: They'll be going head-to-head with Tom Mannion who will be reviewing the same restaurant. If you have ever thought you were more of a gourmand than our resident master chef, now's your chance to prove it!

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ASCIT Minutes

Minutes for April 1st, 2013. Taken by Allika Walvekar

Officers present: Diego Caporale, Pushpa Neppala, Mario Zubia, Michelle Tang, Allika Walvekar, Puikui Cheng, Connor Coley

Guests: Zach Rivkin, Connor Rosen

Call to Order: 9:16 pm

President's Report (Diego):

Caltech won the Pasadena Games last Friday.

Games: Monster Croquet, Hunger Games, Ultimate Frisbee, Lego-es, Don't trip the waiters, Human Race, Human Hamsterball,

A task force has been established through the President's Office to assess the Caltech Brand.

Honor code student committee will have a sign up this week ASCIT Formal is this weekend. It should be a lot of fun and remember it only happens every other year.

Officer's Reports:

V.P. of Academic Affairs (ARC Chair: Pushpa):

Professor of the Month reception for Gil Rafael is coming up ASCIT Teaching awards is Thursday May 23rd.

Option fair: April 5th at noon. Tom provided delicious food and attendance was high amongst freshman.

V.P. of Non-Academic Affairs (IHC Chair: Connor):

PFW: Pre-Frosh Weekend will take place between April 18th and 21st. PFW Rules can be found at <http://ihc.caltech.edu/documents/prefrosh.html>

Director of Operations (Mario):

Club Fair: Mario is working on the planning for the PFW Club Fair. Only registered Caltech clubs are allowed to participate. The Club Fair will occur on April 19th from 4-5:30.

Treasurer (Puikui):

Toastmasters Club asked for funding for recording equipment. ASCIT advised them to assess the current recording equipment on campus and then return if they still need funding. Puikui will invite them to come next week.

Social Director (Michelle):

ASCIT Formal: April 13th 9pm - 1pm

Buses will transport students at 7:45. Dinner begins at 9pm

DJ Matt Gudis and Blown Out will be performing Security and Bob Paz have been hired

Lloyd Interhouse was this weekend.

Upcoming events: Blacker Interhouse (Week 4), Iron Man 3 (Week 6), BFP (Week 8)

Secretary (Allika):

Checked in with Jon Webster about Coffee House Manager position.

Resolved confusion over the Sustainability Council Representatives.

If anyone has any questions or concerns about a section of the minutes please email the appropriate officer. We are happy to answer any questions.

Meeting Adjourned: 10:15

Administration unjustly punished Ricketts

MOYA CHEN
Contributing Writer

The houses do a lot for us undergrads. They are our safety nets during our first years away from home. They provide support, friendship, and assistance when we need it most. For many of us, the houses are our surrogate families. So it should be no surprise to anyone why I, along with many other undergraduates, find the effective disbandment of one of these houses to be extremely alarming.

For those of you who have not been informed of what has occurred, I will give a summary. On Friday, March 1, shortly after 3 p.m., an email was sent to the members of Ricketts house from the Dean's office. According to the email, members of Ricketts had committed "incidents that violate[d] Institute policy," and that "[b]ecause of the egregious nature of the actions—both actual and planned—the administration has no choice but to intervene." Without detailing what these actions were, except saying that they were "confidential," the email continued, describing the punishment to the house. The punishments were as follows:

"We are removing the leadership of Ricketts House from their positions, effective immediately.

"The house's bursar's account has been frozen, and no social events will be approved until further notice.

"Ricketts will not participate in rotation this fall.

"Current members of Ricketts are not guaranteed a spot in the house next year. They will need to apply along with any other interested students, and residency will be approved by the dean's office."

In the past few weeks, additional actions against Ricketts have come to light. Specifically, Admissions was told that students in Ricketts are not allowed to host Prefrosh and are barred from holding events during Prefrosh Weekend.

Since then, Ricketts House has not been informed of charges against them. While some individuals of Ricketts have been informed of cases against themselves, there has been no specific information released as to why actions are being taken against Ricketts as a whole. As far as the undergraduate population is aware, the "non-negotiable stance of the administration" is that "Ricketts needs to change by next year – a lot."

A momentary aside: I know that some readers may have issue with my use of "punishment." While I know that there have been letters circulating both among undergraduates and members of the Alumni Association saying that "[the actions] are not meant to be punitive, but rather to underscore for all our students that there are

consequences to the choices that they make," I find this to be a clever, but ultimately inaccurate, redefinition. Actions taken purely for the sake of creating consequences (rather than, say, repairing or illustrating damages), is, by definition, punitive. For example, the removal of rotation privileges would only be non-punitive if Ricketts had committed some rotation violation. As far as we know, this has not been the case—I will thus be using the word "punishment," as it accurately describes the situation.

For me, this whole situation raises a barrage of questions. From "What could have been so deplorable, so problematic, that the only solution that the deans could find was to effectively disband a house?" to "Why now?" and "What's

“ Science is about creativity, about pushing existing boundaries - Ricketts has this spirit.

next?"; I have a hard time wrapping my head around as to what sort of reasonable justification the deans could possibly give for disbanding Ricketts.

I can understand how a person, especially an administrator, exasperated by Ricketts. Historically, Ricketts has never been the easiest dorm for the administration to deal with. In its eight or so decades of existence, it has been accused of infractions related to drugs, alcohol, sexual harassment, property damage, hazing, and a whole slew of other forms of general indecency. To say that Ricketts is blameless is just wrong. In fact Ricketts, historically, has probably been one of the houses that has had the most incidents brought up between it and the administration. Yet, despite all of this, no administrator in the past has been so brash as to act as they have in response to recent events. In the past, if Ricketts did something wrong, the first thing that the administrators did was to deal with those that had caused the problem. If Ricketts broke a window, people in the house were told to pay for it. If an individual was seen playing with fire, that individual was given due process through the CRC and dealt with by regulated trial. As frustrated as those administrators may have been, they dealt with the events on a case-by-case basis, not as punishment to be doled out to all members that happen to be in a group, innocent or otherwise.

Indeed, having been on the BoC and seeing other BoC reps in action for a while, I am often most impressed by the Caltech community's precision and care that its members have in making judgments on those that have committed wrongs. In regards to recent events however, this discretion seems almost nonexistent.

Additionally, the approach that the administration has taken in dealing with the entire situation seems needlessly damaging. Nearly a month after the original punishments were announced, a large portion of Ricketts House still has not been told what it has done to warrant the reaction. The administration has cited privacy concerns, but for me, this only makes their actions more suspect. Only a House-wide policy violation should invoke a House-wide penalty; Ricketts House is not protected by FERPA—there should be no reason that any legitimate charge could not be revealed to the house as a whole.

By withholding charges from the accused, the administration is denying Ricketts members the chance to dispute inaccurate claims, putting unnecessary stress on the students. One would think that the deans, who are supposed to be mental health resources, would be keen to avoid this sort of unnecessary strain. Additionally, while the administration may not be a formal court of law, their actions in recent events would be considered a severe breach of habeas corpus if it were.

Even if the deans are basing their logic on what some rumors have described as "decades of past problems," I do not feel this to be a legitimate argument.

Firstly, assuming that some of these "decades of past problems" were already dealt with the first time they occurred, using these to accuse current students is a gross breach of double jeopardy.

The law does not reopen cases that have already been tried; neither should Caltech.

Secondly, this argument assumes guilt by association. There is a reason why the children of criminals are not automatically presumed to be criminals themselves. Just because members of a house have been difficult in the past does not mean that new freshmen in that house automatically inherit the guilt.

Thirdly—and this will probably be the greatest point of contention—Ricketts, for all the mistakes that it makes, all of its immaturity, insolence, and impatience, is still a community that should exist at this school.

I am not a Skurve, nor would I necessarily enjoy their activities, but I respect them. Their outspokenness and bluntness makes them natural leaders. Skurves think for themselves. Of all of the houses, members of Ricketts have one of the strongest senses of equality—they may insult a person, but you can be assured that they will insult the next just as much.

Furthermore, even if the current Ricketts disappears, I do not see the number of problems that the administration has to deal with decreasing. There are new freshmen every year, some of whom will be prone to getting into more trouble than others. Even if we make the assumption that these freshmen are somehow all ending up in Ricketts, disbanding the house will make little difference in whether they are present or not. However, rather than being around undergraduates with similar personalities who have gone through similar experiences and can help on a day-to-day basis (the advantage that the house-level safety net has over anything the RAs, RLCs, or deans could ever hope to do), these freshmen will be around those who may have fundamentally different values, those who do not understand. Thus, disbanding Ricketts would neither decrease the administrators' workload nor improve student mental health.

Fundamentally, the Skurve personality is just an expression

of the scientist personality. They experiment, question, and create. Science is about creativity, about pushing existing boundaries—Ricketts has this spirit.

If Caltech intends to admit those with the scientist personality, it cannot avoid admitting those who will be naturally Skurve-like. There is no Harmony test, no preliminary screening that the admissions office could use that would ever change this fact. Creativity and orthodoxy are fundamentally contradictory goals. If Caltech wants freethinkers, it will have to put up with its rule-breakers.

Personally, I do not think that the actions threatened by the administration against Ricketts are justified.

The deans have handled the entire case horribly from a procedural standpoint; their arguments are full of holes. Rather than proceeding in a reasonable, open way, the administration has been closed and brash. For the sake of the Caltech undergraduate community and the housing system, I want to see Ricketts live and thrive under their own terms, not extorted by outside forces that take impetuous actions out of lack of understanding.

I can only hope that in the future, those in the administration will take to heart the meaning of the phrase "Prend moi tel que je suis."



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Evil Dead brings horror genre back to its roots

CAMERON ALLEN
Contributing Writer

***WARNING! THIS REVIEW
MAY CONTAIN SPOILERS***

'Don't run into the woods! Don't go down there! Ah!! Don't trust her, you idiot!' These thoughts ran through my mind as I alternated between occupying the edge of my seat and seeking shelter and hiding by physically merging with the cushions. I never shielded my eyes, however, for fear of missing even one frame. I simply could not look away.

This year's *Evil Dead* is a remake of the 1981 horror cult classic, *The Evil Dead*. Like the original film, it tells a story that has become an archetype horror film: five college students drive out into the backwoods of rural America to spend time in a secluded cabin. Upon exploring the cellar, they come across the *Necronomicon Ex-Mortis* – *The Book of the Dead*. Some of its passages are recited, and an evil force is awakened and begins to possess the characters, forcing those remaining to do whatever is necessary to stay alive. Sam Raimi, the director of the original, produced this film and noticeably exhibited some creative control.

At the center of the story, we have Mia. A character without much glamour, she is a heroin junkie in desperate need of an intervention. The story is framed around this addiction; Mia's friends take her out to the cabin as a method of making her go cold turkey. The sickening withdrawal symptoms add an extra layer of depth to the first act, as it is often unclear whether Mia's experiences are real or just hallucinations. Mia is portrayed by Jane Levy, an actress I had personally never heard of, but her performance was convincing and really displayed the frustration she was facing. I hesitate to call Mia the protagonist, however; her brother David carries out much of the action in the second half of the movie and connects more with the viewer, representing the heroic everyman doing the best he can in an extreme situation.

One issue that comes up when comparing the original film to its remake is the protagonist. In the 1981 version, the main character was Ash, a goofy yet lovable guy who became Raimi's personal punching bag. He was played by a young Bruce Campbell, the man whose jawline is said to have launched a thousand ships. Best friends since childhood, Raimi and Campbell have co-created many original works. Their decision to leave Ash out of the movie was mature and executed well, as having another young actor play the same role would have felt unsettling.

This iteration in the series abandons the goofy tone first seen in *Evil Dead II* (and later in *Army of Darkness*) and returns to straight horror, possibly as a result of eliminating the charming and campy Ash. Even before the

evil comes, the atmosphere has an oppressive weight. The low-frequency hums of the soundtrack subconsciously make the audience squirm. One girl cuts some meat with an electric turkey carver (and you just know she is going to use it again). Frantic, sweeping tracking shots take us through the woods and around the cabin. There is actually a slow buildup of tension, which is rarer nowadays. But, once the satanic words are uttered and

big mess by the end. Imagine if Jackson Pollock rode a unicycle down the Spanish Steps whilst gripping a bucket of red paint in one hand and a crate of Strawberry Splash Go-Gurt in the other. Now grab a mop.

With the prevalence of severed limbs, you would think the characters expected candy to pour out of them, like from a festive donkey piñata. Characters get buried alive, thrown down cellar

The actual horror in this film is not what modern audiences are accustomed to; that is, the horror is not built around children crouching on refrigerators or bed sheets suddenly floating up in the breeze as a passive-aggressive sound engineer pours a jar of marbles on his keyboard. I get surprised when I drink my boba and find out firsthand that the waitress misheard and thought I ordered "sawdust milk tea," but I probably would

friends, causing them to hurt themselves and each other. Sure, the gore is uncomfortable to watch, but when you realize that these lifelong friends were forced to hurt each other in desperate defense, an emotional reaction is also elicited.

A few truly heartwarming moments towards the end make us feel as though we might get away with a happy ending this time... and we sort of do. These emotional times, in addition to a climactic finale involving a downpour and a chainsaw (whose use was teased throughout), form one of the most exhilarating and spectacular third acts in recent memory.

When I originally heard about this project, I immediately assumed that it would be schlock, another tired reboot, a boring and shameless retread of old material without the soul or heart that was invested in the original. Recently, a popular trend in Hollywood has been remaking old horror films from the '70s and '80s as cheaply as possible. Why? Money, mostly. These films often earn five to ten times their budget at the box office. Michael Bay's production company, Platinum Dunes, has done various revivals from *The Texas Chainsaw Massacre* to *A Nightmare on Elm Street*, each one more disrespectful to its property than the last.

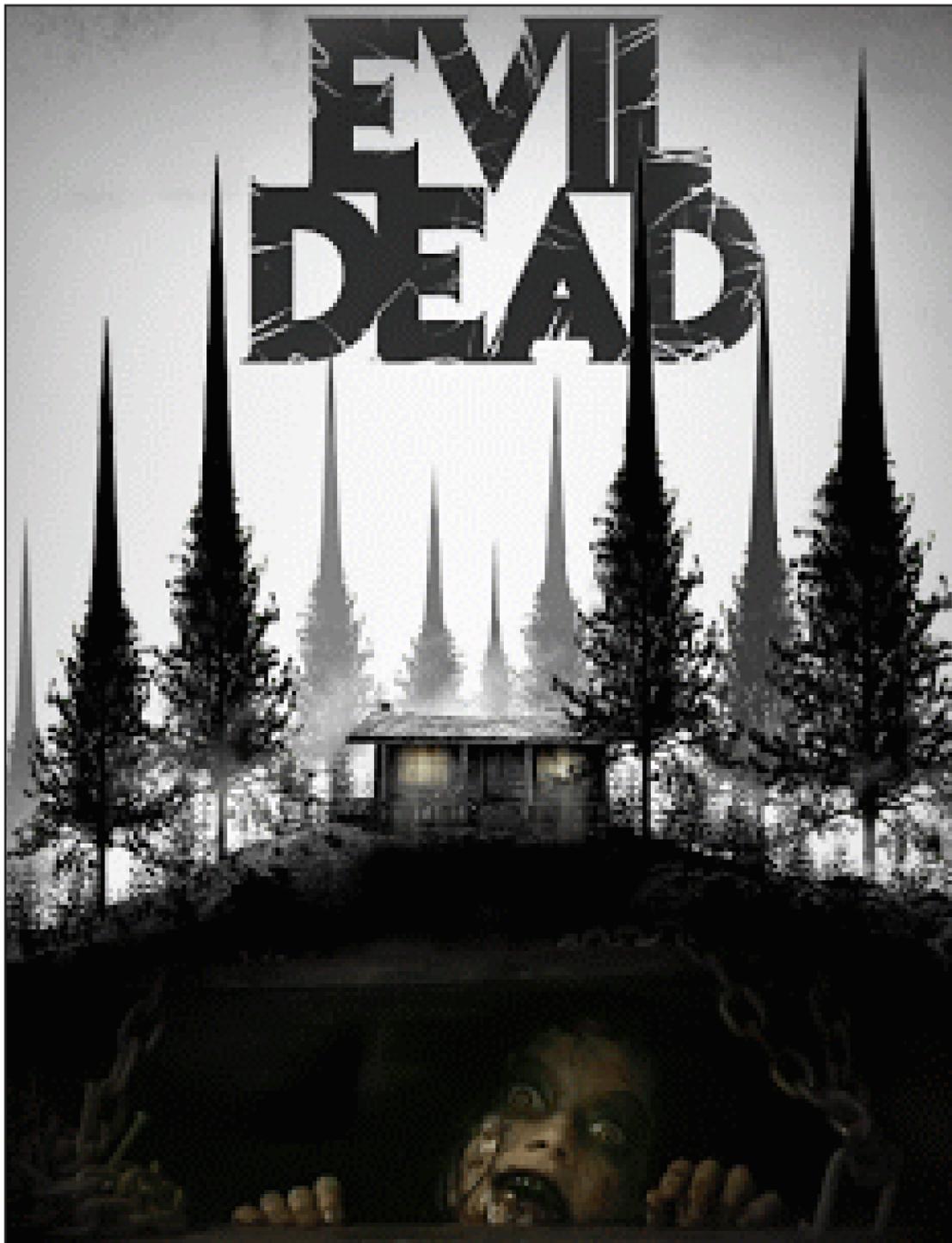
This is definitely not the case with *Evil Dead*. With the success of his Spiderman trilogy and *Oz the Great and Powerful*, Raimi finally had the resources and time to create this pet project, one that he and Campbell have been working on for years.

The two reunited with Robert Tapert, the producer of the original trilogy, and the three hand-selected a Uruguayan director, Fede Alvarez, who had previously only directed short films. However, Alvarez has proven that he has a fresh approach and can breathe new life into the franchise (a topical quality, I suppose).

They could have easily turned a quick buck selling out the franchise based on its name recognition alone, but their goal was never to make money; it was to introduce a new generation of movie-goers to the wonders and magic of *Evil Dead*. And in that intention, they have certainly succeeded. Raimi has said that the reason he loves filmmaking is that he has the opportunity to please and entertain the audience, and that he considers his work to be a success if viewers are "uplifted" by the experience.

Evil Dead was the most fun I have had watching a movie in a long time, and has reminded me of the reasons we go to the cinema to begin with: entertainment, escape, and immersion.

I believe this installment will both please fans of the original trilogy and hopefully inspire new fans to delve deeper into the mythology and watch the classic films. If you are a fan of horror, you simply must see this one. For appropriate audiences, *Evil Dead* earns my strong recommendation, and a score of 9/10. Go see it!



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the evil is stirred from its slumber, the horror becomes unrelenting and nearly constant, allowing you only a few brief moments for you to catch your breath. Let me be very clear: the violence in this movie sits somewhere between liberal and gratuitous, and at no point was the creator's vision compromised. Usually, gore is uncomfortable; that is, until you get to a certain point, and then it becomes silly in its excess. *Evil Dead* keeps on going, with even more explicit gore, and then it wraps around and falls right back into the uncomfortable zone. It is still quite a spectacle, but it is engineered to make you cringe. There's a lot of blood. A lot.

Everywhere.

On the floor, on the ceiling, on the walls. The cabin is a great

stairs, shot with nail guns, stabbed, burned—you name it. And because of the director's refusal to use CGI, all of these are performed with practical effects, and feel uncomfortably realistic. The makeup design is truly nightmare fuel. The actors are possessed and look undead, but are still eerily recognizable. The production also includes some truly astonishing set pieces; one that comes to mind is a scene in which one of the girls is chased through the woods by an unknown force, and ends up entangled in vines that come alive. The entire film is shot beautifully. Grimy bathrooms, grungy cellars, and foggy woods all have a striking visual style, and each shot has purposeful lighting and composition.

not call the experience terrifying. Although there are a few jump-scares, the film does not depend on them. Most of the action is in your face, and you can actually enjoy and absorb the visuals, rather than cover your eyes.

This brings out your excitement, as you imagine and look forward to what you might be shown next, rather than feel dread or boredom in the cheap surprises. The film prefers to be upsetting and disturbing, instead of "scary" in the strictest sense.

When he created *The Evil Dead*, Raimi understood that the scariest monster imaginable is us. More specifically, we fear our friends and family will turn on us, trick us, and try to hurt us. This fear manifests as an evil spirit possessing Mia's

Will changes to patent law hurt Caltech?

ELLA DODD
Contributing Writer

"It's like a Cuisinart—everything gets chopped up," Dr. Raymond Deshaies, a professor of biology and an appointed investigator for the Howard Hughes Medical Institute, explained as he pointed to a brightly colored model of the ubiquitin-proteasome system (UPS).

The UPS is kind of like a garbage disposal for cells, and Deshaies has spent the last 17 years at Caltech studying how the UPS helps regulate cell growth and looking for potential cancer treatments that take advantage of that regulation. By 2011, he had patented nine inventions, co-founded two biopharmaceutical companies, and helped to raise over \$44 million for his companies' drug development programs.

Deshaies is only one of the many research professors at universities throughout the United States who have patented and licensed their discoveries, and Caltech has been one of the leading competitors in this world of intellectual property for decades. According to a 2010 report by the US Patent and Trademark Office (USPTO) on the number of patents granted to American universities between 1969 and 2008, only the University of California and MIT had more patents than Caltech. Stanford University, located in the heart of Silicon Valley, was ranked fifth.

All that could change, however, due to several key provisions of the Leahy-Smith America Invents Act (AIA) that recently came into effect. The AIA calls for major changes to patent law that could have a serious impact on the way universities like Caltech and Stanford handle their intellectual property.

Caltech, Stanford, MIT, and nearly every other technical university in America has an office of technology transfer (OTT) that is responsible for taking concepts developed by professors and turning them into commercial products. This is typically accomplished by means of patents and licensing agreements, both of which benefit the university as well as the public. Patents help protect the investment made in research, and they can attract corporate and federal funding in the future.

Licensing agreements ensure that discoveries have the opportunity to reach the stream of commerce, where the public can use them, and they often generate income for the inventor and for the furtherance of instruction and research at the university. More importantly, Deshaies noted, start-up companies "produce broader societal value" when they license patents, since they create job openings, and, in his case, make novel treatments for diseases.

Although Deshaies described the technology transfer process as "still rather opaque," the OTT tries to make this process "as user friendly as possible," according

to its website. When a Caltech professor makes an important discovery, he or she typically hands over a manuscript detailing the innovation and gets right back to the lab.

Dr. Jennifer Hodas, a licensing associate at Caltech's OTT, said that the OTT then uses this manuscript to file a provisional patent application, a cheaper, less detailed patent application that does not require any complicated claims and gives Caltech a year to figure out how to proceed. In the meantime, Caltech's patent policy dictates that the professor shall be free to publish his or her manuscript in a timely manner and that "the cost of acquisition of such patents shall in no instance be borne by the employee."

Eight or nine months after the initial disclosure, the OTT revisits the invention and works with the professor to determine whether or not to pursue patent protection for the technology. According to the OTT's website, these decisions are "made through a discussion between OTT and the inventors based on the commercial potential of the invention, the state of development, and other factors." The OTT estimates that nearly half the time these discussions lead to the filing of regular (non-provisional) patent applications.

A non-provisional patent application consists of detailed drawings of the invention, a complete written description of how to make and use the invention, and a set of specific claims—statements that define the legal basis for patent protection. Essentially, the inventor pays a small fee and shares with the public what his or her discovery is and how to replicate it. In return, the USPTO grants the inventor exclusive rights to that discovery for 20 years.

If a company wants to manufacture and sell the patented invention, it must negotiate a licensing agreement with the OTT, which acts on behalf of the university and the inventor. Professors usually have a feel for which companies might be interested in their research, and in some cases they may even receive funding from these companies. This makes the OTT's job easier, since Caltech already has working relationships with a number of potential licensees.

If a professor wants to start his or her own company, the OTT can provide business advice and set up meetings with venture capitalists. But when the fledgling company goes to the OTT to negotiate a license for the patent, things can get complicated.

Deshaies said he went through "several good cop/bad cop routines" with the OTT when he started his company. On one hand, Caltech only wants to license patents to companies that are fully funded and can actually make use of the technology. On the other hand, it has been Deshaies' experience that venture capitalists "tend to be highly risk-averse" and only want to fund companies that already have a licensing agreement for the patents they need.

The OTT is "pretty hands-off," Deshaies said. "They've got the right philosophy—their mission is to help faculty commercialize inventions, not to manage faculty." He attributed Caltech's success in the intellectual property realm to the combination of "very innovative and entrepreneurial faculty" and "enlightened" OTT staff members.

A report by The Chronicle of Higher Education shows just

application and \$190 to file a non-provisional patent application. Starting sometime in the 2013 fiscal year, however, these fees will be reduced to \$65 and \$70, respectively.

Hodas said that Caltech is "very aggressive about patent filing," but the reduced filing fees are unlikely to lead to any significant savings. According to their website, the OTT has successfully pursued patent protection for an average of 110 new technologies in each of the last five years, and they filed at least twice as many provisional patent applications. At this rate, lower filing fees would save Caltech about \$25,000 annually—enough, for example, to pay just half of an undergrad's tuition and living expenses for a single academic year.

But perhaps the biggest change prescribed by the AIA is the switch from a first-to-invent system to

a first-inventor-to-file system. Suppose inventor A discovers a novel technology and inventor B independently discovers the same technology a week later. Under the current first-to-invent system, the USPTO will always award the patent to inventor A (the first to invent), even if he is not the first inventor to file a patent application. Under the new first-inventor-to-file system, the outcome no longer depends on who makes the discovery first, then inventor A gets the patent. But if inventor B files a patent application before inventor A files his, then inventor B gets the patent.

The new law cites as its goal to "promote the progress of science and the useful arts" and to "provide inventors with greater certainty regarding the scope of protection" provided by their patents. The switch to a first-inventor-to-file system, the law states, will "promote harmonization of the US patent system with the patent systems commonly used in nearly all other countries throughout the world... and thereby promote greater international uniformity and certainty" in patenting procedures.

Edward McCaffery, professor of law and economics at Caltech and elected American Law Institute fellow, suggested a more pressing reason for the switch. Given the tremendous number of patent applications filed each year, the AIA will "take some pressure off the USPTO" by replacing complicated "who was the first to invent" questions with easily answered "which inventor was the first to file"

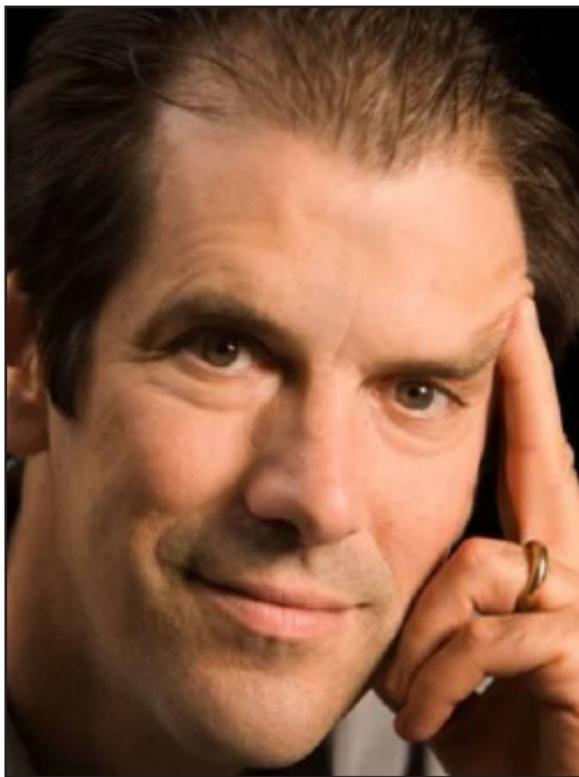
questions. This could shorten the wait time between filing a patent application and actually receiving patent protection, which would reassure inventors and potential licensees.

The impact switching to a first-inventor-to-file system will have on universities is less certain. Pursuing a patent is expensive—universities often spend \$7,000-\$10,000 just preparing the application—and there is no guarantee that the patent will actually be granted. To lessen their financial risk, universities often delay filing until they have a licensee who is willing to bear these costs. This strategy will not work under the AIA, however, because now there is a strong incentive to file patent applications as soon as inventions are reported to the OTT. There will be more pressure on professors to report their inventions quickly, and there will be more pressure on the OTT to accurately determine the patentability and marketability of these inventions.

Although the AIA calls for broad changes in the US patent system, Hodas said that the new laws "won't really hurt or change much in our operations," in part because the OTT is so aggressive about patenting. She argued that "this office is unusual because we file provisional patent applications on everything." In other words, the OTT's technology transfer process already makes it likely that professors will be the first inventors to file patent applications for their discoveries.

Director of Stanford's OTT Katharine Ku stated in an email that the AIA was unlikely to change anything in her office either. "We will probably have to decide to file sooner than we'd like," but in a university-wide memo on the AIA, Ku warned against filing too early. "While it is true that the AIA emphasizes filing early, it is also true that provisional patent applications still need to be as complete and detailed as possible at the time of filing."

Hodas noted that since "lots of professors collaborate with other universities" and the AIA "will change how other universities operate," Caltech could be indirectly affected by the new laws. When professors from different universities collaborate on a research project, the technology transfer offices have to work together to coordinate a patent strategy. But Hodas was not worried. She smiled and said that, in her experience at least, "most of them tend to agree with us." McCaffery seemed pretty relaxed about Caltech's future under the AIA. He said that "anytime you have a change, you have fears," but he figured that "Caltech is a sophisticated repeat player" in the world of intellectual property. For him, Caltech's history of successful technology transfer strategies is evidence enough that the university's OTT will adapt to the new US patent system with ease.



Prof. Deshaies has co-founded two companies and holds a number of patents.

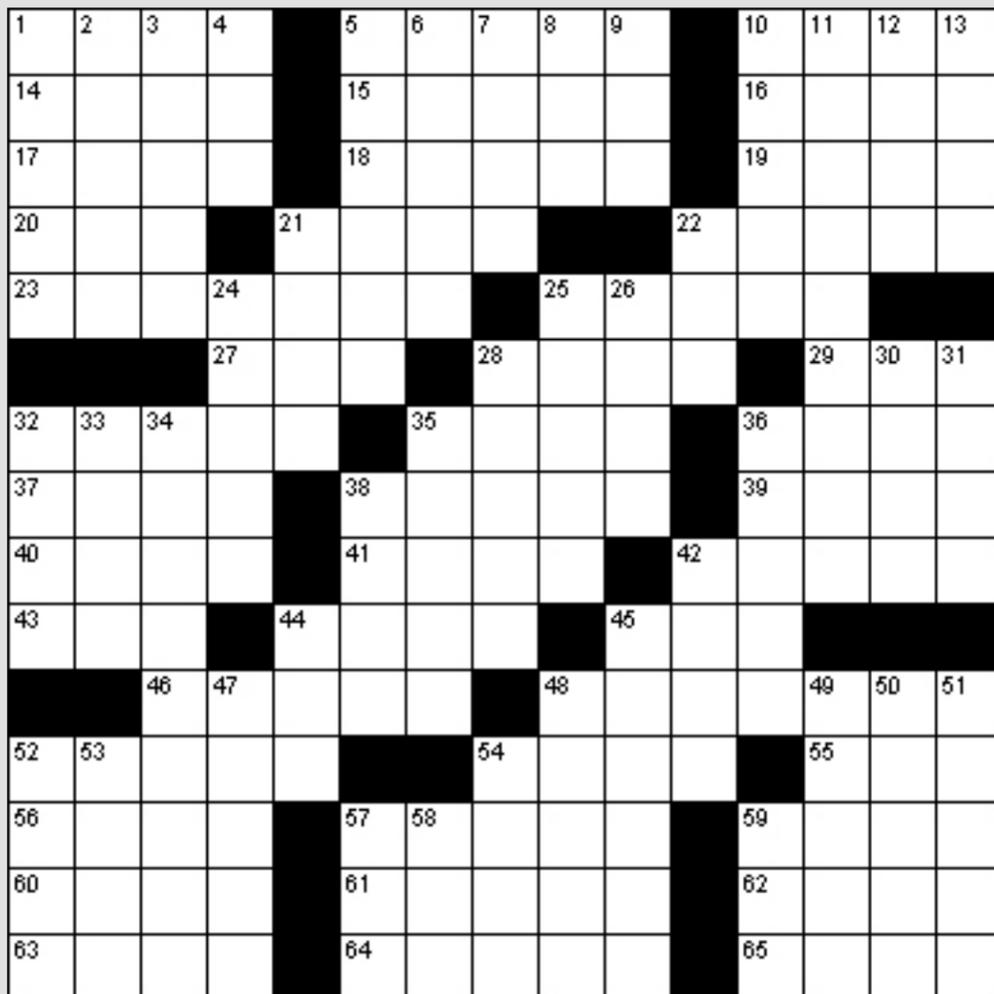
- hhmi.org

how successful the university's technology transfer strategy has been. In the 2010-2011 fiscal year, Stanford's licensed technologies generated over \$65 million in revenue; Caltech's generated over \$51 million. Stanford, however, has 1,350 professorial faculty members compared to Caltech's 300, so on a per-faculty member basis, Caltech comes out ahead. And given that both universities fostered ten start-up companies during this time, there are indications that Caltech must be doing something right.

But Caltech's hardworking OTT may soon be put to the test. Although Congress passed the AIA in September of 2011, some of the provisions will go into full effect for the first time this month, on March 16, 2013.

One of the changes prescribed by the AIA is the lowering of university filing fees for both provisional and non-provisional patent applications. The USPTO currently charges universities \$125 to file a provisional patent

Today's Puzzle: Crossword



Across

1. Geological formation
5. Long-tailed parrot
10. Ring
14. Singing voice
15. Religious meal
16. Woodwind instrument
17. Stupefy
18. Heavy pin
19. Entrance
20. Decimal base
21. Fit and healthy
22. Located outside
23. Newspaper piece
25. Cover with liquid
27. Female person
28. Period of time
29. Encountered
32. No longer new
35. Disastrous defeat
36. Perceive sound
37. Water pipe
38. One of the senses
39. One time only
40. Remove from a position of office
41. Fiend
42. Cleanse
43. Argument in favor
44. Musical work
45. Armed conflict

Down

46. Jinx
48. Jury decision
52. Gleam
54. Peruse
55. Spoil
56. Bread
57. Marine carnivore
59. Information
60. Not in favor
61. Out of fashion
62. Matured
63. Converge
64. Poplar tree
65. Additional
21. Dull pain
22. Belonging to us
24. Small island
25. Tennis term
26. Expletive
28. Belonging to you
30. Apiece
31. Woody plant
32. Retail outlet
33. Journey
34. Companion
35. Rascal
36. Cache
38. Peaks
42. Lyric poet
44. Metal-bearing mineral
45. Undermine
47. Unsound
48. Rhyme
49. Adult insect after metamorphosis
50. Provide a service
51. Commercial exchange
52. Close violently
53. Sharpen
54. File
57. Health resort
58. Possesses
59. Water barrier

[<http://www.puzzlechoice.com/>]

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Mens tennis team falls to Pomona-Pitzer

GOCALTECH.COM
The Real Sports Editor

The nationally ranked Pomona-Pitzer men's tennis team posted a 9-0 win over Caltech on Saturday afternoon.

The Beavers mixed-up their singles line-up as several players competed at higher spots than they have all season.

Rushikesh Joshi played at the top spot for the first time in 2013. The first-year played a spirited match before falling 6-4, 7-6 (2) to Frankie Alinson.

Luka Mernik moved up to the second singles spot as he fell 6-2, 6-1 to Kevin Prescott.

The steady play of Alex Henny nearly pulled out a three-set victory.

After winning the first set in a tiebreak, Henny dropped the final two sets with the final set a 10-4 super tiebreak. The Sagehens swept

the three doubles matches en route to the win.

Caltech got a solid effort from Joshi and JD Co-Reyes at the No. 3 spot before falling 8-6 in a tight match-up.

During the previous day, The Occidental men's tennis team recorded an 8-1 win over Caltech.

The Tigers drooped just five games en route to sweeping the doubles points.

Occidental took four of the six singles matches in straight sets as they posted their seventh team win of the season.

Caltech got solid singles plays from Alex Henny and Luka Mernik.

Henny won his third match of the season as they first-year posted a 6-4, 7-5 win at the No. 4 singles position. Mernik won the first set at the No. 3 singles spot but couldn't hold the momentum as he fell in a three-set match.



Ishan Mehta attempts to swallow his bottom lip in order to distract his opponent.

- gocaltech.com



Rebekah Kitto shoots a mean glare at the opposition, daring them to challenge her impressive win streak.

- gocaltech.com

Kitto breaks school record against La Verne

GOCALTECH.COM
The Real Sports Editor

In Caltech's women's tennis match with La Verne on Saturday afternoon Rebekah Kitto made school history.

Kitto remained undefeated in her 14 matches at the No. 2 singles spot. Her 14 wins set a new school record for most singles wins in a season. She pass the mark set by Natsuko Kagawa and Alexis Johnson.

La Verne won the team match 8-1 as they swept five of the six singles matches in straight sets.

The top doubles match saw a pair of regionally ranked teams square off.

The Leopards duo of Laina Matsuda and Jeanette Losaria came into the match ranked 10th while Kitto and Monica Li had a ranking of eight.

The La Verne combo won the match by an 8-5 tally.

Just a day prior to that, the Caltech women's tennis team picked up its first SCIAC win of the season with a dominating win over Occidental.

The Beavers swept the doubles matches then won five of the six singles matches in posting the 8-1 victory.

Caltech posted solid wins at the No. 1 and No. 3 doubles spots as they combined to drop just two games.

The No. 2 doubles match was a tight one throughout but the tandem of Michelle Lee and Jessica Yu prevailed 9-8 (7-3).

With all the momentum in their favor Caltech swept four of the six singles matches in straight sets. The matched was clinched when Michelle Lee completed her 6-0, 6-1 win at the No. 5 slot.

Caltech continues SCIAC play when they host Pomona-Pitzer next Friday afternoon at 2pm on their home court

Upcoming sports events

April 10: Women's Water Polo at Cal Lutheran

April 12: Women's Tennis vs. Pomona-Pitzer

Baseball at Chapman

April 13: Track/Field at Pomona-Pitzer Invite

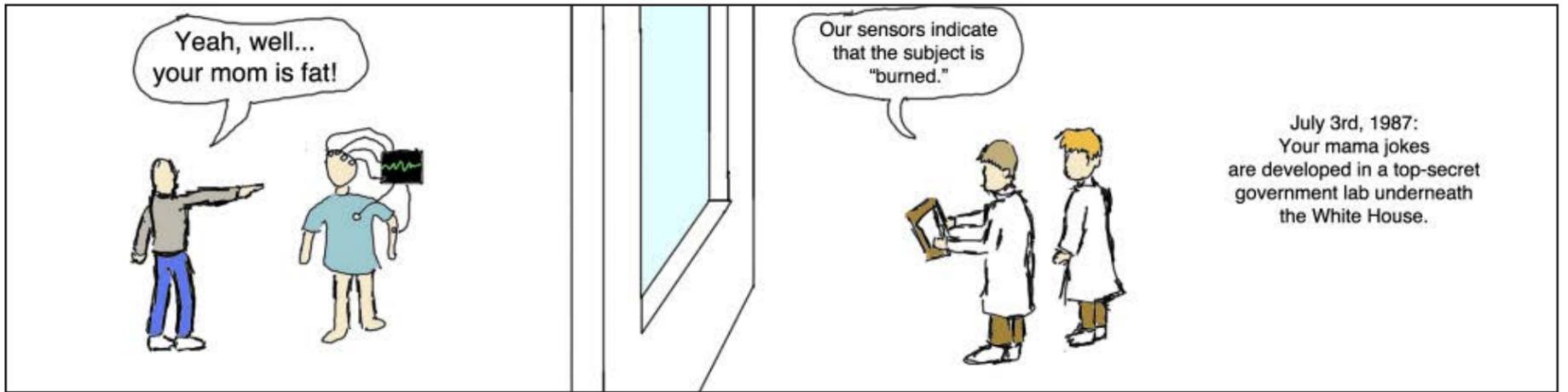
Women's Water Polo vs. P-P

Baseball vs. Chapman

Men's Tennis at Claremont-M-S

Acquired Taste

by Dr. Z



Raj's short, funny fiction corner of fun

RAJ KATTI
Contributing Writer

You may think the Murderer of Weaver Lake is a myth. Think again.

Many years ago when I was in college, I had a close group of friends: John, Tommy, Rob, and two girls whose names we never cared to find out. We did everything together, from getting drunk at football games, to partying hard on Friday nights, to warning preteens about the dangers of alcoholism under court mandate.

Well, it was Spring Break. My uncle had a cabin on Weaver Lake way up in northern Minnesota, and he said we could spend our Spring Break there. So, we all piled into John's station wagon, strapped the girls to the roof, and hit the road.

A few miles before we got to the cabin, we stopped for gas. The gas station attendant, a peculiar old man nearly blind with cataracts,

hobbled over and muttered, "You be careful. Strange things been happening around here." But we didn't take his warning very seriously, especially because he had directed it toward a broken gas pump.

When we got to the cabin, we could all sense something strange about it. But none of us wanted to admit it. So, we unloaded the girls, set to work cleaning the cabin, and ripped the electrical and telecommunications wiring out of the walls.

That night, we were sitting around the living room. The girls had stripped down to their bras and panties. We asked them why, but they didn't really know either. Just as we had begun pairing off to have affectionless sex, there was a tremendous thump outside.

The cabin fell silent. Tommy murmured that he wanted some fresh air and went to check out the noise.

We were nervous but soon calmed down upon realizing that the thump was probably just due to the shoddy, dangerous architecture of the cabin. Suddenly, something heavy came crashing through the window. It rolled to a stop at my feet—Tommy's severed, bloody head. At that moment, we realized something very fishy was going on.

The girls screamed, and the guys ran to grab anything that could be fashioned into a weapon. I ran to call the police but soon remembered our spirited game of "Defenestrate The Electronics" during the long car ride. Knowing that help would not be coming, we gathered in the living room and took a deep breath.

We didn't know what was out there, but whatever it was had just broken one of my uncle's favorite windows.

As we walked outside, armed and ready, Rob asked, "Guys,

can we split up?" It seemed like a reasonable request. I began walking into the dense forest and was working out the second verse of my newest polka-punk single when I heard a blood curdling scream to my left. Then a cry from my right. "Polka all night, Polka feels right," I thought. It was then that I saw the masked man running towards me.

He was hideous. Looked like a collection of corpses sewn together, with strips of scaly flesh flapping like cherry blossoms in a gentle, spring rain.

I ran back to the station wagon, jumped in, and started the engine just as the man threw himself on the hood. Our gazes met. Mine, fragile and inexperienced; his, bespeaking a carnal intensity repulsive yet strangely irresistible. Then, I threw the transmission into reverse, hit the gas, and sped out of there, throwing the masked man off the car and running over Rob in the

process. I considered going back for the others, but deep in my heart I knew they were already dead or I had just run them over.

When I got back home, I didn't tell anyone what had happened because there just never felt like a good time to bring it up. Sure, there was a police investigation, but we were white college students, two of us female, so society didn't really care.

But that was long ago. Nothing like that has ever happened again, at least not to my knowledge. I'm just glad that that everything is finally back to norm—

Whoops, my pen ran out of ink. Like I was saying, I'm just glad that everything is back to n—

Goddammit! I need a new pen. What I'm trying to say is that I'm glad that everything . . . what was that? Is . . . NO! GET AWA—

Sorry about that. I'm just glad everything is finally back to normal. Totally normal.

*For more photos,
videos, and archives
of previous issues,
check out the Tech
website!*

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