## THE UNDERGRADUATE

## Harvard: The Mix Tape

by KATHRYN C. REED '13

are under way for a partnership between the new therapeutics initiative and the FDA to add nuance to the current regulatory structure, and to implement a structure for failure analysis, as in engineering. Sorger also hopes to develop the science needed to test novel treatment methods; gene therapies, stem-cell therapies, and engineered proteins, for instance, are promising research frontiers that the current system is poorly designed to evaluate.

Ten-year costs for the therapeutics initiative are estimated at \$200 million, with significant funding anticipated from private and philanthropic as well as federal sources; a \$5-million grant from the Commonwealth's Massachusetts Life Sciences Center is funding the construction of the LSP. In the next decade, Sorger believes, the initiative will make significant advances in areas like toxicology and personalized therapy. Although federal budget cuts have drastically decreased funding of scientific research, Sorger is undeterred. "In crisis lies opportunity," he says, and institutions have been willing to consider more collaborative ways to organize research. The financial crisis and public debates on healthcare have imparted an additional sense of urgency to current research. "Given these tough economic times, people realize that we are fundamentally dependent on the success of the broader economy, and our economy is, in part, medical practice," he says. "The piece we can drive is innovation: innovation focused on improving patient outcomes and reducing costs." By promoting a more integrative view of drug development—from research through testing to regulation the new therapeutic science team hopes to provide the needed change in the status quo. "We're trapped in a linear narrative here," says Loscalzo. "Genetics, genomics, and conventional wet-bench biology have evolved through linear, reductionist reasoning. It's not a feasible approach if you're thinking about systems and networks."

 $\sim$ KATHERINE XUE

Katherine Xue '13, a former Ledecky Undergraduate Fellow at the magazine, concentrated in chemical and physical biology and will be a freelance writer for the coming year before entering graduate school in systems biology. She recently won Harvard's Bowdoin Prize for Undergraduate Essays in the Natural Sciences for a manuscript adapted from her senior thesis.

FRIEND in middle school used to make me mix tapes. He would find me by my locker after the last bell to hand me the cassette. I could barely make out the names of the songs, written in scratchy boy handwriting. Usually, they'd be rap.

The tracks ran into one another; sometimes they'd be cut off. I would have my favorite songs, but it was too hard to get the rewinding and fast-forwarding just right. I'd always end up in the middle, then go back too far. It was easier to listen straight through, anyway, in the order my friend wanted them to be heard.

They were all I had to listen to, until I bought a Walkman at the end of the year. I still kept the tapes after that, though we

started burning CDs. You could fit more songs on the discs; it was easier to skip around. We'd sit on the bus wearing headphones—the big kind that wrap around your ears. At home, we'd upload to our computers, bring back more the next day.

Listening to the mix tapes ended in eighth grade. (We had continued to trade them occasionally, despite the convenience of CDs.) But the iPod had just come out, making the Walkman seem cumbersome in turn. Eventually I acquired a turquoise mini. (It, too, would seem cumbersome now.) I could carry thousands of songs with me: instead of mix tapes, we traded mp3s.

At harvard in the fall of my freshman year, I went to the *Crimson*'s open house and signed up for every content board on the paper. Arts, Sports, News, Editorial, Fifteen Minutes—I thought I could do them all. "Most people only comp one," I was told. "Once you're on staff, though, you can write for any board you want." I went to each introductory meeting before deciding to drop to one.

A week earlier, my roommates and I had sat in our common room, searching through the course catalog, trying to decide what to shop. There were hundreds of options; for the next week, we could go to as many—or few—courses as we wanted. My friends made color-coded spreadsheets while I felt inundated by choices. I knew some who shopped more than 30



classes, running in and out. I went to seven and still had a hard time narrowing down to a final four.

I was overwhelmed sophomore year. My friends set up lunch dates and dinner dates, scheduling people and meals. Different people in different houses-I understood wanting to see them all. But that was too much inconsistency for me, too many people to cycle through. I preferred stability and the groundedness of a group.

By junior year, everyone was overcommitted—running to meetings, with little time between. A semester in, most people quit at least one organization. We realized we couldn't do it all, despite wanting to try new things.

THERE ARE 3,174 songs in my iTunes library. Compared to my friends' playlists, that's relatively few. I still haven't listened to 1,082. I put the same songs on repeat—over and over until I find something new. When I like a song, I'll buy the whole album. There's little reason to cut down when my computer still has room. Most are still sitting in my library. I've gotten used to them sitting there, waiting to be heard.

I tried to put too many tracks on my first mix tape; my favorite song gets cut off at the end. You can only fit so many on a cassette. The C46 has only 23 minutes per side—enough, if you put thought into your choices and keep track of time.

IN APRIL, I entered my "Senior Spring" at Harvard—something I don't think exists in quite the same way at other schools. Leadership positions in most student groups end in the fall; theses are submitted in March. Commitments slowly diminish and there is suddenly less to do. By April, dinner conversations last two hours. More time is spent is fairly easy to answer. It's the "why" that has eluded me. No, no-there's plenty of fun for the first three years, I tell them. It just comes with added responsibility. It's hard to ever truly do nothing, with all of that running around. Focusing on one or two things at a time is better, rather than trying to excel at clubs, school, and

a social life concurrently. The clubs, work, and thesis come first; then the final semester marks their endpoint, when obligations are complete. There's a reward at the end, what we'll remember when we leave. That's why we have senior spring.

The explanation makes sense at Har-

vard, when running between activities. My friends and parents would raise their eyebrows. Doesn't make sense to me.

THE FIRST MIX TAPE I made was country music—cowboy country, the kind I listened to with my dad. We had an old radio in my parents' bedroom, with two places for cassettes. You put the blank one in the right, the one with music on the left. I sat watching the tape rolling and tried to figure out where the music went. You had to get the timing just right when making a mix tape, pressing pause and play as soon as the song ended. Usually I'd get caught up listening; it was easy to forget.

You have to be careful when making a mix tape; it's important to get the order just right. There's a balance that goes into the creation, a weighting of tempo

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in common rooms. There are whispers of senior spring as an underclassman, the promised freedom that comes at the end. Just work hard for seven semesters, the rumors tell you; then you can enjoy your time on campus and stop worrying about getting ahead.

I've tried to explain this to friends from home and my family, especially when they came to visit this past spring. The "what" and sentiment meant to carry the listener through. Thought is given to song choice, sure, but attention must be paid to the tape as a whole, too.

In MAY, I made a list at the beginning of reading period: all the things I had not done. Most senior bucket lists are comparable, a mix of things we can still accomplish and missed opportunities. Mine had two columns: the first, what I thought I might have added to my time at Harvard; the second, what I had chosen instead. The second list was shorter, though it had more depth.

I tried to weigh the decisions I had made, rereading the list on the right. There was nothing I would have removed and there was little space to add more.

> The time couldn't be extended. There are many things I haven't done on campus, but—in seeing my lists together-I was happy with what I had.

> My friends used to reuse mix tapes, recording over them when they had listened long enough. They rewound, fast-

forwarded, paused until everything fit perfectly, without overlap. I never could erase what I had made, and always bought more cassettes instead. I liked knowing the intention behind what was included on my tapes, the character that they had.

My cassettes and semesters have been imperfect. Some things run into each other; there's little pause between. For a while, in the beginning, I tried to include too many things. There's something about finite space, the intangible that is added when you are forced to subtract. It's hard to get to the end without wanting more time, but I've learned to see both holistically.

Cassettes aren't often practical; it's easier to store mp3s. But sometimes I still put them in my parents' old player, though I've lost the inserts that list the tracks. I like that I have to listen to each side in succession, that it doesn't make sense to rewind and go back. I like that I've forgotten the songs I once wish I had included, and that the ones I did include still bring back the same memories. I can remember where I was when I first heard them—how it felt, even though the meaning is more distant, changed. At the time, I just wanted to fit in one more song. Now I flip the cassettes over, listen again.

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