

**Takeoff Space**  
**Pilot Program**  
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**Introduction**

Takeoff Space will transform the ambitions of talented young people that currently miss important life opportunities because of the disruptive environments into which they are born. It will start regionally, but become a national model for inspiring the success of those who promise to become tomorrow's leaders in high-tech and other industries and professions if only shown the way.

Takeoff Space will work with student mentors at leading universities to introduce academically brilliant teenagers from deprived backgrounds to a peer group of achievers they can relate to and emulate, introduce them to exciting and involving academic activities, and, most importantly, apply a systematic approach to screening college and financial aid opportunities and optimally completing college applications. Takeoff Space will encourage as well as assist participants to apply for and be successful in their college applications by accompanying their efforts every inch of the way. We will work with participant families also to bring everyone together to support the teenager's aspirations and make their success a reality.

**The Problem of low-income population underachievement**

The *Washington Post* reports that "Minorities and poor college students are shouldering the most student debt." An example is given of a student at a state university

where Pell Grants available to low-income students cover only a quarter of costs, and the student needed \$50,000 in loans.

Highly talented low-income students at the University of Massachusetts, Lowell, are frequently to be seen working long hours as baggers or packing shelves at the Acre branch of Market Basket located in one of the poorest areas of Lowell. These are people who have worked hard at high school despite obstacles in their way, and who might have qualified for admission at leading colleges and universities had they applied.

At many such top schools they would have received financial aid to bring costs below what they pay at UMass, although this surprising fact is little known. Harvard advertises prominently on their admission site that, for most students, Harvard costs less than state schools. At places like Harvard and MIT, furthermore, students who need to earn some money have university-organized paid activities such as research or teaching that help enrich their education. They are very unlikely to be found in activities such as bagging groceries more than temporarily.

*The Atlantic* reports on “No Point in Applying: Why Poor Students Are Missing at Top Colleges... Those excluded come disproportionately from families on the lower rungs of the socioeconomic ladder. One recent investigation reported that students from the bottom 50 percent of the income distribution comprise just 14 percent of the undergraduate population at the United States’ most competitive universities.”

*The Atlantic* says that poorer top students are less likely to apply for the highest ranked universities. A key reason reported is that low-income high achievers often get insufficient guidance at school, and such guidance as is given is geared more towards informing lower achievers of local public university and college offerings. “Counselors rarely suggested that valedictorians consider out-of-state or private colleges—and hardly ever mentioned elite universities. And when valedictorians took the initiative to ask about

these options themselves, they all too often faced counselors who were uninformed and who sometimes even tried to steer them away from top institutions.”

While students from professional families count on support at home, furthermore, parents of lower-income students are less likely to be in a position to help research and write high-quality college applications. There is a lack of awareness that many top schools offer high levels of financial aid and an erroneous belief that they are too expensive.

The absence of peer group experience acts as a further deterrent. “Those who knew someone from a prestigious institution were more comfortable with the idea of attending a college farther from home and were less likely to think that the undergraduates at these institutions were out of their league academically or lacked time for fun. All too often, however, poorer valedictorians were less likely to know someone from a top college.”

My own experience in Lowell indicates that the above observations are correct, but that the complete story is more complex. When I made a number of visits to a local cultural organization, I began meeting young people from low-income backgrounds in this town with the second highest Cambodian-American population in the United States – one noted for a lack of achievement compared to other ethnic groups.

I then had interaction with a number of seniors at Lowell High School, where I discovered that the school’s top students were very talented indeed, but rarely achieved success in college or career in line with their abilities. As the school’s Trio/Gear Up guidance counselor told me, only a “handful” each year make it to leading universities (Trio/Gear Up is a program to support poverty-line high school students).

I got to know a variety of the high achievers of the Lowell High School class of 2014, and mentored a number of them. To review a few cases: One academically brilliant student who participated in engineering projects at the local University of Massachusetts

campus but who was an immigrant and had depressed SAT scores because English was the second language, did not get admitted to private schools despite otherwise impressive qualifications.

The student's mother, who was unaware that she had a right to discuss her child's case with teachers and counselors as is the frequent practice of professional parents, wrote a letter to authorize me to represent her at Lowell High School after applications were submitted but before decisions were made. The student's counselor declined, however, to advocate for the student by explaining to colleges the immense efforts made getting up to speed in English as well as the fact that the student is fluent in oral English as well as brilliant in science and engineering/

Another student with very high academic achievement applied for a leading out-of-state public university unaware that the university reserved financial aid for in-state candidates and that the student would have been better served applying for nominally "more expensive" private universities.

A further student, also brilliant and accomplished, reported that applications had been "botched," with applications similarly made to inappropriate colleges because of a lack of knowledge and guidance.

Another student's family was not poor enough to qualify for free application fees but the parents did not consider it worthwhile to pay for applications at private universities. A relative provided some financial assistance, but it was enough to pay for applications to only a small number of colleges and this was insufficient to get an offer of admission and financial aid despite the student's extraordinary academic record.

Students attending institutions like Lowell High School generally don't have the impressive list of extracurricular activities expected for admission to leading universities either because poverty has forced them to work long hours after school to help support

their families, leaving no time to spare for enrichment activities, or because schools such as Lowell rarely if ever take students to conferences or enter them for science competitions and the like. It is therefore necessary to apply to a considerable number of colleges in the hope of finding one that will understand the student's high level of achievement under conditions of deprivation.

This student was nonetheless waitlisted at the University of Chicago, an impressive accomplishment given the competitiveness of that university. As a number of other Lowell High School's top seniors were also waitlisted by Chicago, I contacted the Chicago admissions office to ask about procedures for selecting from the waitlist. I was told that the waitlist was not ranked but that students who advocated for themselves to the admissions office and made an impressive case would have the best chance of eventual admission.

I suggested to the waitlisted students that they phone the Chicago admissions office, but none of them did so. A study by Lowell Community Health Center's Teenblock (part of the Lowell Community Health Center and offering support for at-risk teens) showed that many demonstrated a fear of picking up a phone and talking to someone they did not know. In contrast, students from professional families are more likely to have been taught the self-confidence to be able to represent themselves well.

The talented student with the one of the worst outcomes came from a home where the father had left and was not paying child support. The student had to work daily after school until 10 or 11 pm and also at weekends to support the family. As a result, school performance suffered despite the student's obvious intelligence and talent and the student continued to a local community college that recommended taking classes below the student's ability since the counselor was evidently unaware of the student's potential.

A further student who attended community college advised that doing so would save money, had intended to transfer to a private university. However, the student discovered too late that the university would not give transfer credit for many of the community college courses completed and discontinued studies to pursue paid work full time.

Two African American females with strong motivation, however, achieved admission and excellent financial aid, one to a specialist engineering institution, the other to a leading private university.

The Lowell High School salutatorian was Asian American, but with educated parents able to assist and offer encouragement, and was also admitted to a leading private university.

The valedictorian, a white student from a professional family, and a further top white student with a supportive but low-income family, were also admitted to leading private universities.

While many of the Asian-American students felt they had received inadequate counseling support from Lowell High School and were critical of the support offered, the two white students said they had received good advice and appreciated the help given by the school and by Trio/Gear Up support services.

Key explanatory factors relating to this contrasting perception could relate to student participation in support services and to differences in family support. Those few top students from supportive family backgrounds are more likely to be encouraged to take full advantage of the counseling services the school has to offer.

Professional families also tend to spend a good deal of time assisting their children with their college applications. Asking around professional friends, I discovered that they will sit with their kids going through college web sites, note test and administrative requirements and make sure they are met, take their kids of college visits, help research

and complete the administrative part of applications and review, advise their children, and sometimes even help write essays.

In contrast, students from homes lacking a college-educated family member will typically get no help at all beyond school counseling services. Given a typical teenager attention span, it could be that school counselors come up with good guidance even under pressure (and Lowell High School counselors and other personnel are overworked and under high pressure), but recommendations do not receive follow through because of the lack of a supportive home environment.

In addition, many low-income high-school students not only have after school paid jobs, but their parents expect them to continue living at home and supporting their family financially following high school completion. As a Teenblock social worker explained, the linear support traditions followed by many American families, where the older generation supports the younger generation and the younger generation supports the following one, are often not followed by immigrant families. In many such families, there is an expectation that their children have a duty to start paying in to communal expenses through earnings, even if they are studying at college. Hence, a high proportion of Lowell High School's most talented graduates attend The University of Massachusetts, Lowell. They generally live at home and often miss out on the range of college activities to be found at leading private universities.

To give one example, a Lowell High School graduate is currently double-majoring in two science programs at UMass Lowell. The student is intellectually brilliant but, like most counterparts, must work a substantial number of hours each week for financial support.

The student has shown strong initiative in a number of areas, but is constrained by the fact that students are not expected to be entrepreneurial. A proposal for a major

educational exercise the student prepared and submitted received a dismissive response from the university. Many private universities, in contrast, would have offered encouragement.

A number of community organizations offer support to at-risk students. Teenblock and the Boys & Girls Club are major examples, and they do an excellent job at reaching out to those in need of their services and offering a wide range of programs. Both institutions do offer college admissions support, either directly or with volunteers from UMass Lowell or elsewhere. However, as with the high school, there are limits on the follow through that can be offered in situations where family support is lacking. Neither program is able to offer peer group support from students currently attending leading educational institutions. Furthermore, only one of the talented Lowell High School students I identified was attending either of these programs.

### **How Takeoff Space will turn round educational outcomes for the most talented deprived teenagers**

The implications of the above findings are firstly that more specialist counseling and support for academically talented Lowell High School students is desirable. However well counseling services may try to do their job they are under enormous strain at a massive (up to 4000 student) school with a predominantly low-income population that lacks the family support that makes running school advising systems easier for more privileged populations.

Introducing Lowell's most successful teenagers to peers studying at top local universities such as Harvard, MIT and Tufts will enhance chances of success in college admissions by showing them academic routes and experiences of which they may be unaware and offering them the encouragement needed to succeed.

More importantly, however, giving good advice is not enough. A substitute is needed for the family support enjoyed by the children of professional parents who ensure requirements and deadlines are met and offer a high degree of parental involvement to ensure their children stay on track and succeed.

Takeoff Space will differ from other programs and innovate with its family focus: while Takeoff Space plans to depend heavily on mentoring from undergraduates at leading institutions, it will shape that mentoring to go beyond advising to simulating the sort of caring follow-through typical of professional households. In addition, Takeoff Space will have local staff to liaise with participant families, explain the importance of higher education to them, and help create more supportive family backgrounds for program participants. Where referrals are needed to respond to deep family or other personal issues such as mental health problems, Takeoff Space will work with Teenblock, Boys & Girls Club, or other local institutions, to offer appropriate specialized follow-up and support.

In short, Takeoff Space will not only deliver a far higher rate of success in leading college admissions and attendance, but will work with student families to facilitate acceptance of the student's wishes and success in achieving them.

### **Takeoff Space pilot program Plan**

A pilot program is planned for 6 weeks during March – April 2016 and for a further 6 weeks during October – November 2016. The program will proceed if sufficient funding is received for at least the March – April initial program period and provided appropriate institutional arrangements are made and personnel recruitment accomplished.

Fundraising activities will take place during February 2016. Initial fundraising will focus on crowdfunding with the idea that success during the initial program period will justify the conduct of a further campaign based on major foundation and corporate philanthropy. We will apply for state and federal nonprofit and tax exempt status before embarking on subsequent major corporate and government agency fundraising efforts.

The pilot program will take place on the MIT campus, subject to MIT approval. Selected students from Lowell High School (and possibly a few others) will be taken to MIT weekly after school for a program of approximately three hours duration to be conducted by MIT undergraduates paid as part of the federal work-study program.

The initial visit will focus on socialization and introduction to student life at MIT. Each participant will be allocated to a student-mentor responsible for maintaining a one-on-one relationship throughout the program. This might happen by pairing up at the initial encounter, or using some other procedure.

Subsequent visits will include periods based on one-on-one mentor-participant relationships, and partly revolving around group activities (an attempt will also be made to connect participants with a living group or student activity).

The primary mentor responsibility will be to expose participants to the range of choices of career and college pursuits. Participants will be informed of the content of different academic disciplines, features of different kinds of college experiences, and application and financial aid processes.

Web sites of candidate higher education institutions will be explored together (with participants doing additional exploring at home for further discussion with mentors next visit). A systematic approach to screening colleges for selection based on candidate achievement and college admissions requirements and financial aid provision will take

place over the period of the program with the aim of producing a shortlist at the end of the pilot.

Screening will include consideration of the full range of college attributes. Small liberal arts colleges, for example, may be desirable for some participants with above-average self-confidence and a willingness to adapt to an elite educational environment; major urban universities may offer more diversity and comfort to others. Not all small colleges and universities are alike, however, and differences will be explored.

MIT Student-mentors will help candidates identify and plan for necessary tests (including SAT IIs) and additional essay requirements and assess financial aspects of application processes. Does the student qualify for application and test fee waivers and how many? If more are required, steps will be taken to obtain them (many colleges will waive them upon request) or to make small grants from program funds to cover the costs.

Participants will be encouraged and supported in contacting college admissions offices with any questions. They will produce a draft of the principal common application essay requirement by the end of the program.

Student-mentors will also be available for assistance with homework and to discuss any other issues on participants' minds. They will have contact by email, messenger and telephone between meetings as required, and will also conduct research on admissions issues and prepare an agenda for the subsequent visit. The work study budget will provide for any additional commitment of time required.

Group activities will include a visit to the MIT Admissions Office, a presentation on principles and elements of financial aid as well as admissions procedures, visits to academic departments to learn about the content of different fields (not all of which may be familiar to participants), see demonstrations and, where possible, to participate in

educational exercises (e.g. robotics, programming, something entrepreneurial, and/or activities to build public speaking and social and other skills that inspire self-confidence).

In addition to the on-campus content, perhaps one or two visits will be made to outside venues such as the Gardner Museum, a schools performance of the Boston Symphony Orchestra, a walking tour of Roxbury or another interesting Boston area, or to participate in a student conference, since participants will have been unlikely to have ever been exposed to such activities.

Student-mentors will additionally visit Lowell on one occasion to share participants' home environment and meet their families.

A celebratory party like activity will be held at the conclusion of the pilot.

Social support agencies in Lowell have stressed the importance of providing food for participants since many come from families where proper dining cannot be assured. An attempt will be made to fund one full meal per activity period and also provide for snacks for bus rides or other times.

Referral services will be provided for those with special needs, including cases where family disruptions are taking place, or those in need of mental health or other support. We anticipate working with organizations such as Teenblock to streamline such referrals.

## **Recruitment**

Recruitment of MIT student mentors started with a session at MIT's January Independent Activities Period and will continue during February. Local recruitment for family relations staff, to likely be drawn from high-achieving students at UMass Lowell, funded on work study along with their MIT counterparts, will also take place during this period, as will coordination with MIT, Lowell High School, and local community organizations. Staff training will be conducted during late February and early March,

with ongoing monitoring of training needs and supplementary training continuing into the program as necessary.

Recruitment of appropriate high school student participants will take place during February and early March 2016, provided fundraising activities have been promising. Criteria for program participation will be developed with the assistance of Lowell High School, the Gear Up/Trio program, and others. It is expected that approximately 12 students (the capacity of a van) could be accommodated for the pilot. It would make sense for the majority to be recruited on the basis of qualification for Trio/Gear Up participation (low-income status) coupled with very high academic achievement (members of perhaps the top 20 or 25 of the junior class).

No student at Lowell High School can truly be regarded as “privileged,” however, while there may also be some students of high academic potential whose academic achievements do not as yet represent that potential. It is anticipated, therefore, that in addition to students enrolled based on strict financial need/academic performance criteria, a number of places will be open to any Lowell High School student making a compelling case.

Should a strong case for inclusion be made, and should it not be possible to recruit to capacity at Lowell High School, it is possible that a small number of participants not at Lowell High School may also be accepted.

Gender balance is desirable and will be one of the criteria considered in selection.

The families of all shortlisted participants will be visited to ensure that families understand and approve of program content and to develop awareness of any special needs assistance participants may have. Family relations staff will continue to conduct family visits during operation of the program.

## **Second term program for fall 2016**

The above activities will continue into the fall term 2016 to include completion of all admissions and financial aid materials, assistance with test preparation, and contact with schools identified as desirable by program participants to introduce the candidates and offer advocacy for them.

A final workshop will take place either over the course of a weekend day or a full weekend (with overnight stay somewhere attractive, funds permitting), to ensure all applications are complete as well as produced to high quality standards.

## **Further program development**

The plan is to develop a national model for program implementation, using the results from initial trials to refine the program and specify procedures and standards. Extensive foundation and corporate fundraising will take place based on evidence of success from the pilot.

The program will initially spread from Lowell to Lawrence, which shares many of Lowell's characteristics of disadvantage, albeit with a more heavily Hispanic population, and other communities in the Merrimack Valley. The next step will be to extend coverage throughout the eastern part of the state of Massachusetts.

While central specification of operational processes will be desirable, local knowledge as well as commitment will be critical to starting further operations around the United States to be based on the national model but operated locally.

With development of the program and its national spread, connections will be maintained with participants during college. For example, if a student is studying in New York, the New York office will assist with any further services needed during the student's studies. Low-income students may need special support and advocacy when

entering unfamiliar college environments or in dealing with family or other issues that may arise, and this should be a part of programmed activities, subject to growth of the program with adequate funding.

The program will also develop close connections with leading university and college admissions offices both to learn of the suitability of institutions for those arriving from low-income or otherwise challenged environments and to advocate for their admission and receipt of a viable level of financial aid.

## **Evaluation**

Measures of success will take time to develop. We'll hear about admission and financial aid results for our first cohort only in April 2017. And we will have to wait for the first year of college to be completed to learn whether things went well and our participants are happy with the opportunities presented to them and the choices they made.

We will nonetheless institute an evaluation program from the start to measure participant satisfaction with our program. One clear measure will be participant attendance and retention for the duration of the program. We will also invite frequent feedback on various attributes of program involvement and ensure that each client has a good relationship with their mentor and is benefiting from the program in general. Adjustments resulting from the feedback will be made as necessary.

We will also monitor family involvement and enthusiasm for the program and adjust our family encounter component as necessary to ensure families are well-informed and happy with the participation of their children in our program.

We will evaluate and tune our program overall with the goal of developing an initiative that can be successfully replicated throughout the nation.