

# *4 Questions*

## to Help You Reengineer Your Engineering Admissions Process





For engineers, the adage “If it ain’t broke, don’t fix it” simply doesn’t ring true. Indeed, engineers fix things, but not necessarily things that are broken. If an existing structure or system is reasonably operational, engineers still see the opportunity to make it run faster, smoother, more efficiently and with greater impact.

The same principle applies to engineering school admissions. Although many engineering programs have admissions tools which have “worked” for years, it remains incumbent upon them to continuously update and refine their processes to ensure that they’re meeting their strategic goals and adapting to the continually shifting dynamics of the higher education sector.

Perfecting the admissions process begins with how any engineer or problem-solver would tackle a challenge: asking the foundational questions. These are the difficult questions; the questions which won’t only make you keenly aware of the problems but will also provide you with the key incentives and insights that motivate you to action and form the basis of your solutions.

In this ebook, you’ll learn about the four overarching questions facing engineering admissions offices today, while discovering the unique solutions that will reengineer your admissions process.

# Question 1:

## Are you meeting your enrollment goals?

If you're an admissions director or officer these days, you're likely feeling increased pressure. According to the Inside Higher Ed-Gallup 2017 Survey of College and University Admissions Directors, 34% of U.S. colleges met new student enrollment targets last year by May 1— down from 37% in 2016 and 42% in 2015.<sup>1</sup>

Meanwhile, among the science and engineering (S&E) fields, one of the most precipitous declines in international graduate student enrollment between Fall 2016 and Fall 2017 was seen in engineering: from 96,300 to 89,000, the National Science Foundation's (NSF) Science and Engineering Indicators 2018 report revealed. During the same timeframe, the number of international students in the U.S. fell 2.2% at the undergraduate level and 5.5% at the graduate level, NSF found.<sup>2</sup>

With today's decentralized admissions process, big picture reporting can pose a challenge. Institutions looking to track engineering admissions and enrollment trends, both within a school itself and throughout the academic community, struggle to bring data from disparate sources into a single location to evaluate overall progress.

Yet information that previously required going to multiple colleagues and pulling from multiple solutions is now available in a unified view. EngineeringCAS™ drives awareness of all an institution's engineering programs through a streamlined application process and communication tools that enable targeted, personalized communications to those interested in the program; decreases decision-making times by providing a processing team to scan transcripts and package application components as an extension of a school's staff and provides insight into enrollment trends and performance both on a specific campus and in comparison to other institutions through robust analytics and reporting tools.

Another empowering tool is Liaison's HigherYield™ solution, which combines ETS's GRE® Search Service and TOEFL® Search Service with Liaison's Enrollment Marketing Platform (EMP™) and campaign services, providing access to a robust database of prospective applicants from around the world who have indicated an interest in advancing their studies. Recruiters can select from a multitude of search criteria — such as demographics, geographic data, academic disciplines and test scores — to cost-effectively segment and launch campaigns to expand and diversify their applicant pools. HigherYield enables more effective utilization of GRE Search Service and TOEFL Search Service list purchases.

## The EngineeringCAS Application Process in 7 Steps



### STEP 1

The applicant completes the online application.



### STEP 2

Transcripts are sent to EngineeringCAS, either via physical mail or electronically, and then attached to the application.



### STEP 3

References are submitted via the recommendation portal.



### STEP 4

All approved materials are posted to the applicant's file.



### STEP 5

The admissions team has access to a complete application and each of its supporting components.



### STEP 6

You complete your unique workflow, from scheduling evaluations, interviews, rubric scoring and reviews to making and communicating final decisions.



### STEP 7

You notify the student of your admissions decision.

## Question 2:

### Are you reaching international applicants?

The decline in international student enrollment has particularly significant implications for engineering programs. As of last year, 62% of all international students in graduate programs were enrolled in S&E fields, according to NSF. But across the S&E disciplines, international graduate student numbers dropped 6% from 2016 to 2017. By comparison, international enrollment fell 5% in non-S&E fields during that period. On a broader scale, total graduate enrollment in S&E has risen steadily in the U.S. during the past 15 years, peaking at 668,000 in 2015 — a 74% increase from 493,000 in 2000. Enrollment in S&E associate's degrees has risen at an ever faster rate, with 136% growth from 2000 to 2015.<sup>2</sup>

Yet the falling international student enrollment threatens to disrupt the momentum in total S&E enrollment in America, and recent federal immigration policy changes could be a major contributor to that trend. Under regulations implemented in August, anyone who remains in the U.S. past the date of their visa's expiration is designated with unlawful presence status, which could result in a possible 10-year ban on re-entering the country.<sup>3</sup>

The threat to international student enrollment isn't just a threat to diversity in the classroom environment — it's a potentially severe blow to the ingenuity of the American

workforce, particularly in S&E professions. Asian and foreign-born individuals make up a much higher proportion of the S&E workforce than they do the general population: Asians make up 6% of the U.S. population age 21 and older, but fill 21% of S&E jobs, NSF found.<sup>2</sup> Further, according to the Silicon Valley Competitiveness and Innovation Project - 2017 Report, more than half of America's tech workers are foreign-born.<sup>4</sup>

"We have a research engine that needs to be fueled, and that fuel is really our graduate students," said Geraldine Richmond, a member of the National Science Board and chemistry professor at the University of Oregon. "So, as we continue to try to attract the best and brightest in our country, we also seek to attract the best and brightest from these other countries."<sup>5</sup>

Conveying the urgency of a possible domestic brain drain due to decreasing international student enrollment, Michael Morell, a founder of the tech recruiting firm Riviera Partners said there are "more jobs than we can fill with the current slate of talent."<sup>5</sup>

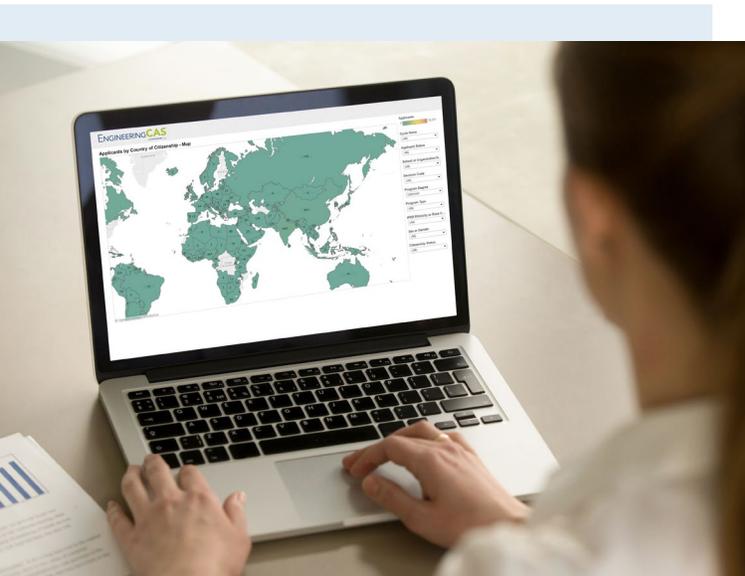
International enrollment also affects the educational and professional experiences of domestic students. As American and international engineering students alike prepare to enter a global economy, they only stand to benefit from exposure to peers from different cultures, societies and nations.

That's precisely why today's engineering schools need to be using a global platform for admissions, explained International Federation of Engineering Education Studies (IFEES) Secretary General Hans J. Hoyer, who also serves as Executive Secretary of the Global Engineering Deans Council (GEDC).

"It's crucial that undergraduate and graduate engineering programs alike are aware of the groundbreaking tools Liaison is providing to expand their reach, including internationally, in the admissions process," Hoyer said. "IFEES and GEDC are proud to partner with Liaison on helping engineering schools adapt to an evolving enrollment landscape."

Specifically, EngineeringCAS expands academic programs' international reach by adding them to a global platform in which students can easily research their options, and then apply to one or multiple programs; eases international applicants' process of filing required documents by partnering with leading providers of complementary technology, which work with Liaison's admissions and enrollment management software and services to deliver a seamless experience for end users, and raises international students' awareness of American engineering schools' new or longstanding programs.

"EngineeringCAS helps graduate programs have exposure to and awareness of a larger, more diverse pool of applicants domestically and internationally, with research aspirations that better align with the strengths of the programs," said Thomas G. Loughlin, executive director of the American Society of Mechanical Engineers (ASME), a Liaison partner. "Through it, we'll advance the discipline by driving awareness of programs and disseminating data that can be used to further evolve our field."





## Question 3:

### Are you spending enough time nurturing and finding best-fit students?

A recent Council of Graduate Schools (CGS) survey of 625 institutions found that U.S. graduate programs received approximately 2.2 million applications for admission for study beginning in Fall 2016. With acceptance rates averaging about 22.2% for doctoral applicants and 48.7% for master's and other programs, that's a lot of applications to review.<sup>6</sup>

Liaison's integrated applicant services mean you can leave administrative tasks like transcript authentication, application completion verification and GPA calculation to EngineeringCAS. The platform will also take care of test score evaluation.

Reducing the administrative workload means your staff is free to focus on more strategic admissions work and to work on building relationships with applicants. Getting to know individual students better and understanding their motivations and goals can help you better assess potential fit.

With EngineeringCAS, you can quickly determine which applications are complete and which require additional components, then send automated notifications to applicants, saving your admissions team time while moving students through the pipeline. You can also easily capture the data necessary for holistic review, allowing you to evaluate students across a broad range of variables. Reviewers can evaluate applications online, whenever and wherever it's convenient.

Multiple reviewers can access applications simultaneously, reducing bottlenecks and speeding time to decision.

Various deans, as well as associate directors of enrollment and operations at engineering schools and other academic programs, have estimated that Liaison's CAS solutions have not only increased their applicant pools by more than 10%, but they've also reduced application review time by approximately 75%.

Matt Cipriano, an associate director of enrollment and education operations at Weill Cornell Medicine, is in this group. Before implementing a CAS, the school's application review process "literally took weeks on end, with people working 80 hours a week to prepare applications for review," according to Cipriano. Once he joined a CAS, that changed for the better. "We didn't have to spend that time processing applications to get everything where it need to be or sending requests for letters of recommendation out — all those things were handled by the software itself or by Liaison's services team," he explained. Cipriano and his colleagues were thrilled that they "would end up with everything in hand immediately" and with WebAdMIT™, the robust admissions management software that serves as a backend of each CAS, centralizing the review process, there was no need to wait to collect and consolidate reviewer feedback either.

## Question 4:

### Are you aligned with the right partners to build a class reflective of today's society?

Norman Fortenberry, executive director of the American Society for Engineering Education (ASEE), emphasizes that the engineering profession's top priority should be retention, citing a 40% attrition rate in the field stemming from students who begin studying for engineering degrees but don't complete their programs.<sup>7</sup>

A shortage of diversity in the engineering workforce, against the backdrop of today's increasingly diverse American society at-large, represents another significant concern for the profession. The NSF found that as of 2014, African Americans comprised 2.6% of engineers in the U.S., while Hispanics constituted 6.6% and women accounted for 14.8%.<sup>8</sup>

Fortenberry underscores the engineering field's practical and powerful impact on society as the calling card which will help academic institutions, and ultimately the profession as a whole, attract the best and brightest minds.

"The quality of human life is directly tied to engineering," he said. "If you look at everything that is not growing on a tree — and even some things that are growing on trees — they're the result of engineering. We need to communicate that message to potential students better. Demographics are telling us that's particularly important for women and underrepresented minorities, but many white males are looking for relevance in what they do as well. We have to explain the human relevance of engineering as a profession if we are to attract and retain more students."

Further, in today's increasingly global economy, Fortenberry stresses the importance of communication across cultures, boundaries and borders.

"We're working on projects now where design drawings begin in Singapore; then the drawings travel to Japan, then the United States and then production starts in Germany, so being on the same page about what's happening every step of the way is crucial," he said.

EngineeringCAS is responding to the contemporary imperative to embrace diversity and multiculturalism by working with underrepresented minority groups, ensuring that Liaison's CAS solution substantively solves some of the engineering field's most pressing problems.

Along these lines, EngineeringCAS partners with organizations which represent the needs and perspectives of a diverse

applicant pool — including but not limited to Women in Engineering ProActive Network (WEPAN), the National Society of Black Engineers (NSBE), the American Society of Agricultural and Biological Engineers (ASABE), ASEE and ASME. Overall, Liaison has developed customized services with over 30 professional associations, streamlining admissions for a wide range of disciplines and fields.

Darrin Drollinger, executive director of ASABE, said EngineeringCAS is "a tremendous opportunity to highlight graduate-level agricultural and biological engineering programs across the nation. Being a part of this effort from the start was important to us, and we're thrilled with how it simplifies the application process."

"For ASEE members, EngineeringCAS simplifies the admissions process, ensuring that prospective students are aware of all of the programs available to them and making it easy to apply to those that will best help a student meet his or her goals," echoed ASEE's Fortenberry. "In addition to its member benefit of freeing office staff to focus more on promoting student success, the new service offers insight into enrollment trends and the changing demographics of our applicant pools. With EngineeringCAS, we're better prepared to build a diverse class of students, attracting and retaining those with the unique perspectives that will solve society's most pressing issues."

From the vantage point of an engineering school with significant ambitions, the primary objective is to "seek bold solutions with global impact to address society's most pressing needs," said Erick Jones, Ph.D., associate dean for Graduate Studies at the College of Engineering at The University of Texas at Arlington (UTA).

"As we align our student recruitment and enrollment efforts with our vision of life-enhancing discovery, innovative instruction and caring community engagement, we are rethinking how we engage graduate engineering candidates," Jones said. "We want to attract the brightest minds to join us in tackling challenging issues, so we are happy to partner with EngineeringCAS to make researching and applying to our graduate programs a better experience for students. We're looking forward to making it easy to apply to UTA by removing potential barriers for applicants."

# EngineeringCAS: A Multifaceted Solution Which Addresses the 4 Foundational Questions

EngineeringCAS offers engineering programs big-picture reporting capabilities through access to previously scattered information in a unified view; helps American schools raise awareness among an international applicant pool by adding their programs to a global platform; introduces a streamlined process that substantially cuts down on application review time and leverages partnerships that maximize diversity.

For applicants, the benefit is clear: EngineeringCAS facilitates their process for researching and applying to multiple programs of interest, offers a modern application experience that guides them through the application process and provides 24/7 access to real-time application status updates.

And for academic programs, EngineeringCAS is a risk-free proposition. The service is available at no cost to the programs themselves. This is the platform which will help you reach your enrollment goals, provide a better applicant experience, streamline your admissions process and build a better class. This is your vehicle for reengineering your admissions process to meet the shifting needs of your institution, and of the engineering field as a whole. Extend your reach to a broader applicant pool today with EngineeringCAS.

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[Learn more at engineeringcas.org](https://engineeringcas.org)

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## About Liaison

For nearly three decades, Liaison has streamlined the process by which higher education institutions manage their application processes and market their programs to prospective students. More than 31,000 programs on over 1,000 campuses nationwide reach prospective students, minimize administrative tasks and create exceptional experiences for applicants across the full enrollment cycle — from first interest to first day on campus — through our admissions management and enrollment marketing solutions. Across our Centralized Application Services (CASs™), we process over 2,500,000 applications per year.

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