

Prospective Student Database: Technological Support for Assessing the Effectiveness of Graduate Recruitment Activities

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To the Editor:

As many of the readers of *CBE—Life Sciences Education* know, academic institutions compete to attract a finite number of graduate students. Prospective students make high-stakes decisions regarding graduate education, and educational institutions commit significant and sustained resources to recruit, retain, and train students. Approaches to manage recruitment and admissions would allow data-driven decisions concerning resource allocation. Applicant tracking systems are used in human resource management to provide a central applicant database and a set of processes and tools to help employers manage recruitment and hiring efforts (Gardner *et al.*, 2003; Ngai and Wat, 2006; Alshibly, 2011; Laumer *et al.*, 2015); however, academic institutions have been slow to adopt these tracking methods and instead depend on less sophisticated approaches for reasons of scale, expertise, and cost. We designed and created a Prospective Student Database that is purpose-built for tracking applicant movement through the recruitment and admissions processes in graduate education at The University of Texas MD Anderson Cancer Center UTHealth Graduate School of Biomedical Sciences. The system matches prospective applicants with students who have been admitted and, subsequently, with students who have enrolled at the institution. Admitted and enrolled students from one year can be queried against the list of prospective applicants from the current year and previous years using unique identifiers generated by the system (Codd, 2002). Thus, determination of prospective applicants who are admitted and which of the admitted applicants matriculate provides a clear understanding of recruitment outcomes.

The reporting feature of this database provides standard reports that inform recruiters and academic institutions about the success of recruitment activities by event, date, and year of matriculation (Figure 1; Wilson *et al.*, 2018). Tracking the effectiveness of different recruitment strategies and the utility of individual events enables institutions to direct resources toward successful approaches. As proof of principle, our recent work (Wilson *et al.*, 2018) that assesses our graduate school's initiatives on recruiting and retaining underrepresented minority students used this Prospective Student Database and a network of databases (admissions, student, and alumni databases) to track recruitment activities (Prospective Student Database), student metrics (admissions database), candidacy examination outcomes (academic affairs database), attrition (academic affairs database), and career paths (alumni database). Thus, this system can be used by recruiters, faculty, staff, programs, and administrative leaders in graduate education for a complete picture of applicant outcomes.

While the Prospective Student Database can be used as a stand-alone application, the real value of this platform is its scalability and adaptability as multi-user

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All Prospects By Events				
Prospect Person_ID	Last Name	First Name	Email Address	Current Institution
New Event				
1	Achala	Ihimd Imid Iddini	Ummud.uchulu@gmuul.com	
2	Alvaraz	Myryyh	BOBO95@maal.sfsa.ada	San Francisco S
3	Aravala Rablas	Binili	Baravalarablas@csastan.ada	CSU Stanislaus
4	Argaata	Deneel	D_irgiiti@i.picifc.idi	University of th
5	Rablatada	Lubikun	Lubikun@csastan.ada	CSU East Bay

Applicants By Date				
<input type="text" value="11/20/2017"/>				
Person ID	Last Name	First Name	Email Address	Former Institution
1134	Achala	Ihimd Imid Iddini	Ummud.uchulu@gmuul.com	
1135	Alvaraz	Myryyh	BOBO95@maal.sfsa.ada	San Francisco S
1136	Aravala Rablas	Binili	Baravalarablas@csastan.ada	CSU Stanislaus
1137	Argaata	Deneel	D_irgiiti@i.picifc.idi	University of th

Applicants Who Were Prospects			
<input type="text" value="11/20/2017"/>			
Date Stamp	Last Name	First Name	Prospect Event
11/20/2017	Achala	Ihimd Imid Iddini	New Event
	Alvaraz	Myryyh	New Event
	Aravala Rablas	Binili	New Event

Students Who Were Prospects			
<input type="text" value="11/20/2017"/>			
Date Stamp	Last Name	First Name	Prospect Event
11/20/2017	Achala	Ihimd Imid Iddini	New Event
	Alvaraz	Myryyh	New Event
	Aravala Rablas	Binili	New Event
	Argaata	Deneel	New Event

FIGURE 1. Example reports generated by the Prospective Student Database. Users can query the database and determine the effectiveness of recruitment events and activities by selecting one of the four “reports” generated by the database: “All Prospects By Events,” “Applicants By Date,” “Applicants Who Were Prospects,” and “Students Who Were Prospects.”

network-based application in academic and student affairs offices that links pre-existing student databases in a graduate school setting—all of which are important for complete programmatic assessment. To our knowledge, this is the first functional platform to track academic recruiting strategies/events by matching prospective applicants with admissions and matriculation outcomes. Thus, we expect that this system will be adapted by graduate programs that may not have the resources to purchase or develop sophisticated predictive analytic tools currently in use by undergraduate programs.

DOWNLOADING AND USING THE SAMPLE DATABASE

Access to the sample database is available by clicking the following link: <http://go.uth.edu/SampleProspect>

Briefly, follow these steps for a successful demonstration of the sample database. Detailed instructions are provided in a Word document titled “Steps for Successful Demonstration” and can be found by clicking the link.

1. Create a folder on your Windows computer: C:/Sample-Prospect.
2. Download and unzip the files provided using the link above.
3. Save the unzipped files under the new folder C:/Sample-Prospect.
4. Open the Sample Prospect Access Database (SampleProspect.accdb).
5. Click Process Prospects and Applicants and follow the step-by-step instructions to import the sample Prospect,

Admissions, and Student, which are provided as Excel spreadsheets.

6. Click the Return button to return to the workflow switchboard.
7. Users can now match prospect to applicants using the Match by Email or Match by Name buttons.
8. Once matches have been made, users can click on the Example Reports button for complete reports of recruitment activities.

In conclusion, graduate programs in STEM, with support from federal and private agencies, spend considerable resources to recruit a diverse student body, albeit with variable success (Antonio, 2002; National Science Foundation, 2014; National Institutes of Health, 2015; Gibbs *et al.*, 2016; Heggeness *et al.*, 2016; Mervis, 2016). Accurate reporting on outcomes is required for assessing the return on investments in recruitment and retention strategies. The Prospective Student Database can help programs address whether the success of mechanisms used to recruit students are proportional to cost, and whether the retention and outcomes of graduate students are linked to recruitment programming.

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