Data visualization: ATS launches interactive tool

By Deborah H. C. Gin

The Association of Theological Schools (ATS) is pleased to announce the formal launch of its first space for data visualization. The tool allows engagers to slice and view the data in a variety of ways to address questions that are meaningful to them.

Which data do you want to explore?

Summary Of Enrollment   Summary Of Schools

Enrollment By Year   Enrollment By Gender

Enrollment By Degree   Enrollment By Race

Glossary

What do we hope to accomplish with this tool?

For the first time, ATS is making information from the Annual Data Tables (ADT) available in one location, across years and at the click of a button (assuming you've "favorited" the page). That click provides access to three types of visualizations and a variety of slicers, such as primary denominational family, country, and ecclesial family of the school, all of which will be familiar to the user; additional new school slicers include denominationality (whether or not the school is affiliated with a denomination) and Carnegie classification (based on the classification system the Carnegie Commission on Higher Education has used for decades). Data can also be visualized by a few characteristics of the student, such as race and gender.

After several iterations—considering multiple institutional data variables—we chose to focus on a common concern for all schools, regardless of ecclesial family, denominationality, endowment-/tuition-driven status, and other school contexts: ENROLLMENT. Ultimately, our intention in succeeding years is to add more data variables such as school finances, faculty, and others. As with all its work with data and research, ATS uses a protocol to vet and re-vet its reports and tools to ensure confidentiality of sensitive information, and it will not make sensitive raw data available that have not been de-identified.

How did we get here?

The idea of data visualization has been percolating since ATS brought research in-house—hiring its first two named research staff five years ago—but work to make data visualization a reality has been underway the last two years and reflects the values of humility and hospitality that guide the work of ATS research. Humility in approach reminds us that the work of research needs multiple voices, and a commitment to hospitality requires that we find ways to provide greater access to data.

More than a year ago, in a significant step toward bringing in other research perspectives, the ATS Board of Commissioners approved a major update to the data-sharing policy so individuals could request access to institutional data. The first request for data under the new policy provided important analysis of enrollment data by denomination (See Kristina Lizardy-Hajbi's article "Student religious and denominational affiliation trends in ATS schools" and her article in this issue). Data visualization represents another important move toward providing users with access and with the ability to "play with" the data directly.

Readers should keep in mind that much of the institutional data provided annually from schools has already been publically available—mainly through the ADT but also in the Strategic Information Report (SIR) sent to

each school, as well as the <u>Institutional Peer Profile Report</u> (IPPR) that is available upon request. Some of the data are also available through other public venues (e.g., IPEDS data through the National Center for Education Statistics).

We initially explored a few data visualization options and finally landed on PowerBI because of its compatibility with Microsoft products and its cost-effectiveness. We recognized that we'd be practicing the best stewardship if we could use skills that were already available to us through ATS staff.

What questions can the data address?

The most obvious question the visualizations address is: what is the enrollment for ATS schools this year? However, data visualization can address many other types of questions. Beyond current enrollments for specific schools, data visualization helps us:
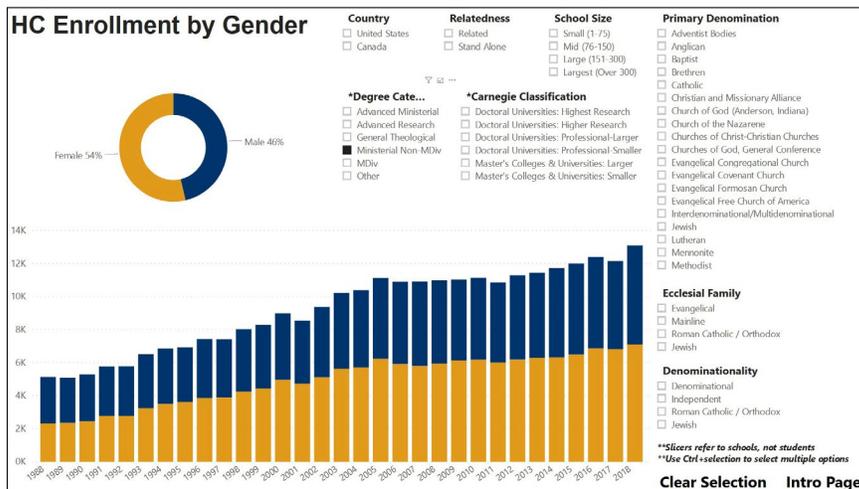
- **See trends.** What does the 30-year picture of enrollment look like for groups of schools? Are there more or fewer schools that are trending up since the downturn in 2008?

- **Explore trends according to type of school.** How do enrollments compare between mainline denominational schools and mainline independent schools?

- **Look at the intersection of gender/race/degree category and any of the school slicers.** What is the picture of growth in racial/ethnic students or white students? How does this trend line differ for evangelical, mainline, and Roman Catholic/ Orthodox schools?

- **Drill down to a specific degree category and explore all of the above.** What does the 30-year trend line look like for the MDiv, MA Professional ("non-MDiv ministerial"), or advanced professional (e.g., DMin) degree types? Are any of these growing overall? For those that are growing, what is the gender or racial composition? Is it the same for schools in all ecclesial families?

- **Click on one year or multiple years.** Have we seen the pattern of growth/decline of recent years elsewhere in the 30 years?

- **And much, much more!**

Of course, the questions that the data address prompt other, deeper questions that we encourage you and others at your school to engage such as:

- Is this what we see in our school? Do we know what our trend lines are? Where can we find them for our specific school? (Hint: check your SIR)

- What does it mean for our school that our trend lines do/don't align with the trends of our "group(s)"?

- What does it mean for our school that growth can be found in certain segments (by school type, degree category, student race/gender), but not in others?

- What do the data tell us for the possible future?

- Who else at our school needs to wrestle with these data?

While we look forward to hearing how users interact with the data, we offer a couple words of caution. First, users should be aware that in order to create an accurate history of the 30 years, we included all schools that were active that year; however, not all those schools are listed in the "by school" visualization. Schools, of course, have left and entered the Association over the 30 years, but the list of schools reflects only those that are currently active.

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Second, it is important for users to simultaneously look at trend lines and specific enrollment counts. Trend lines may look dramatic for a particular school or with a particular slicer, but trends tend to be exaggerated when counts are smaller (i.e., a 45 degree slant from one year to the next may represent only three students).

Finally, users must always keep in mind that data like these tell only a part of the story. At ATS, we firmly believe in the benefits of mixed-methods research and encourage users of this tool to practice mixed-methods approaches to their data interpretation as well. Each "dot" is an individual, and that individual has a story. So it is good to have both the overview that these big-picture data provide and the on-the-ground context that personal realities provide.

What if you're not a researcher but want to dig deeper?

While we hope all users will find the data visualization tool at least interesting (even fascinating), we recognize not all will have the time or expertise to dig deeper. So we have the following suggestions:

- Connect with your school's senior-level administrator of the SIR and encourage a more fulsome conversation about your school's report with various groups of faculty, administrators, and board.

- Be on the lookout for ATS webinars related to enrollment data of ATS schools; these are tentatively planned for next academic year.

- Remember the new data-sharing policy; though raw data can't be downloaded directly from these data visualizations (we've locked them down for security reasons), individual researchers can request full datasets. Connect with a researcher or two and take them to lunch to figure out how they might use ATS data to answer that burning question you have about theological education. Chances are, if you're wondering about it then others are too!

And remember to bookmark the ATS data visualization page and return to the data often (first time loading may take a minute)!
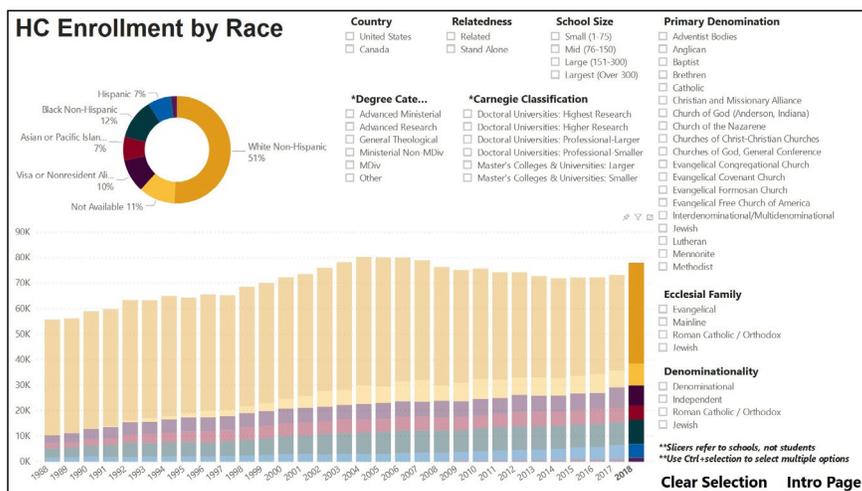
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