Statistical Discovery.™ From SAS.

Sophisticated analytics made easy

Students in the University of Michigan's Stephen M. Ross School of Business find JMP® statistical discovery software invaluable

Students arrive at the University of Michigan's Stephen M. Ross School of Business with greatly varied degrees of experience with statistics. Peter Lenk, a professor of operations management sciences and marketing, is responsible for teaching this diverse group of MBA students, many of them engineers or information specialists, but also a fair number who have humanities or liberal arts backgrounds.

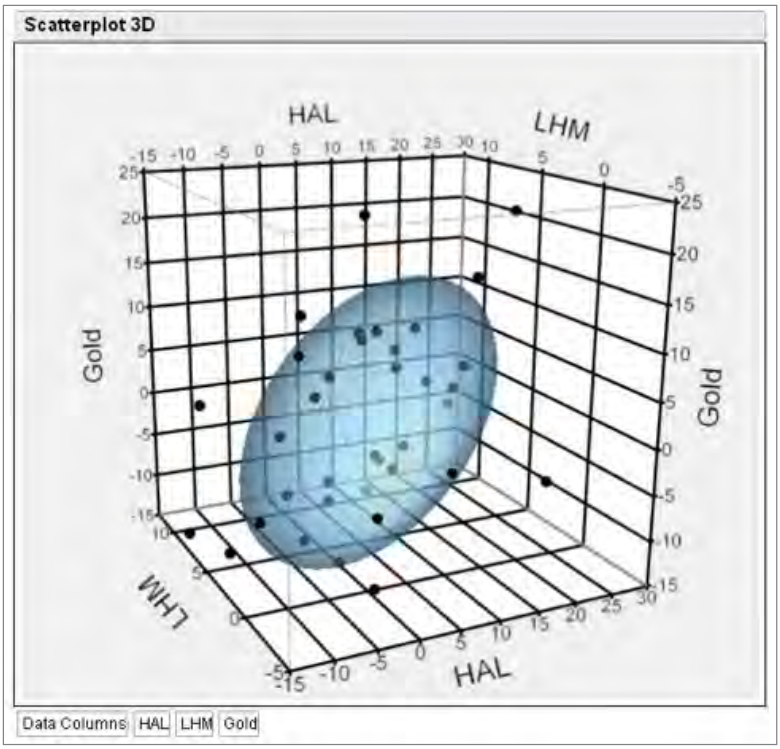
"I would say that my incoming students have had on average about three-quarters of a semester's course in statistics," says Lenk, a statistician to his core. "But some, of course, have had a great deal more."

Having a tool that's both accessible to the inexperienced user and sufficiently sophisticated for the advanced has enhanced Lenk's curricula.

"I think what's most brilliant about JMP," says Lenk, "is that it's great for both the novice and the advanced user.

"Whenever you teach with statistical software, you anticipate spending a lot of face-to-face time with students as they try to work through issues," he says. "That can be a delight, but it also requires a lot of extra hours."

But with JMP, no news has been good news. Lenk finds that fewer students come to him with issues. Instead, the discussions are about what the results mean, not about how to do the analyses.



Using the scatterplot matrix, students discover correlation among the monthly returns for Lockheed Martin stock (LHM), Halliburton stock (HAL) and the Gold Index.

Bottom line, Lenk says, "You don't spend your time teaching software, you spend it teaching statistics."

From classroom to real world

Lenk, himself a JMP user for less than two years, immediately saw its pedagogic potential.

His initial attraction was its user-friendly interface. Lenk doesn't get excited about just any statistical software because he has used many different packages – each with its own idiosyncratic behavior.

JMP is different.

"It's almost like artificial intelligence; it has a good human-factors quality to it. The people who designed JMP seem

"You don't spend your time teaching software, you spend it teaching statistics."

Peter Lenk
Professor of Operations Management Sciences and Marketing, University of Michigan

to have a really good feel for what you need to do as a statistician."

But not at the cost of accessibility.

"JMP doesn't overload the novice with too much information," Lenk says. "You don't have a ream of output to sort through. It's very intelligent about what it shows people."

Lenk's students, individually and in teams, delve immediately into JMP's analytics to explore data, surface business challenges, uncover patterns and examine possible solutions. They then go back into the world and apply these skills in their work environments.

"It's just so accessible," Lenk says, drawing a comparison between JMP's interface and that of the iPhone.

"You can do a lot of complex things with an iPhone very easily, and you can do a lot of complex procedures with JMP very easily," Lenk says.

"I really like the way JMP hides some things and then, if you want to explore them further later, you can. I like that kind of perspective."

Favorite features

Many of Lenk's MBA students attend classes part time while continuing to work, and they bring real-world data to the classroom. They use JMP, for example, to analyze customer satisfaction, sales trends and downtime for computer systems. Lenk points to several JMP applications that he finds particularly useful in these studies.

First of all, JMP is used for data exploration – determining up front the instructive value of the data and how it might elevate classroom objectives.

Lenk says his students particularly like the Fit Model platform. "Many of them have done some work in Excel, where they have to drag columns around and fit and refit. Then they use the Fit Model in JMP, with the stepwise regression, and they just really love it."

The Time Series platform is another useful feature, allowing students to go from simple smoothing models to seasonal ARIMA models and transfer functions.

Lenk is very fond of JMP's contextual red triangles, which guide the user to probe the data in the most logical manner.

CHALLENGE

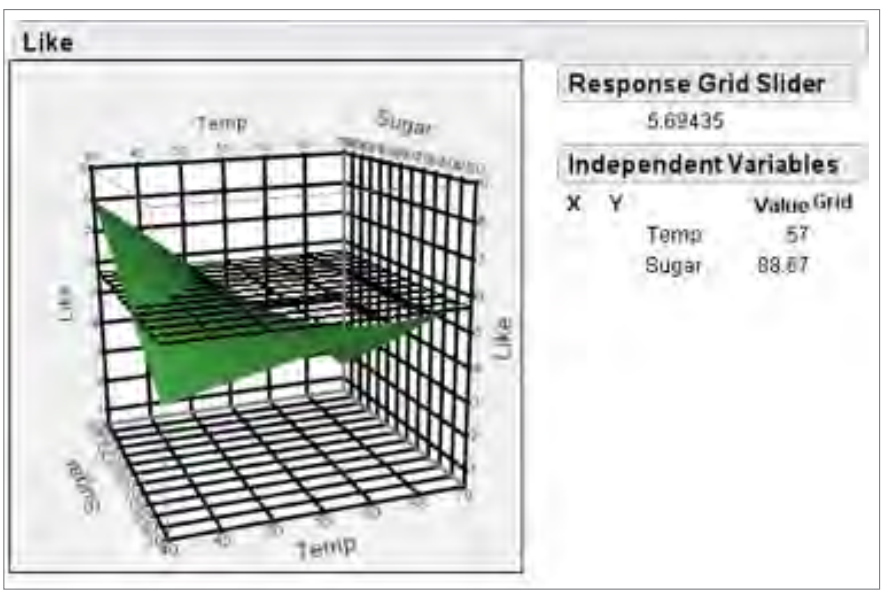
To make predictive analytics and statistics the foundation for action-based learning and practice for all MBA students and graduates.

SOLUTION

The Stephen M. Ross School of Business at the University of Michigan uses JMP® software for coursework and projects in introductory statistics, data mining and applied multivariate analysis, applied forecasting and applied regression.

RESULTS

Individual students and teams delve into analytics to explore data, surface business challenges, uncover patterns and examine possible solutions, and then apply these skills in their work environments.



Students sequentially analyze and explore product preferences by fitting a model using JMP, and then creating an interactive surface profiler using a red triangle drill-down option.

"I love those red triangles," he says. "The drill-down is so sensible." He says that JMP has an advantage over rival software packages. "With the others you must drill down before submitting the computations."

JMP lets users explore their data on the fly. Rather than planning the entire analysis process up front, users can take cues from JMP about different avenues to try. "You may want to start with a regression, and then look at some other features about that regression. And at that point, you expand the red triangle and select ways to drill down. You don't have to start over. You can add on to your analysis because your output isn't dead – it's still alive and hot."

Lenk finds JMP efficient and particularly valuable for the large data sets he uses in intermediate classes. "In the applied regression and data mining classes, we use data sets with 20,000 or more rows, such as financial accounting data provided by Compustat for all firms listed on the New York Stock Exchange over a 10-year period. Excel loads the data files slowly on even the newest, fastest desktop computer. There is a long lag between issuing a command and getting a result. That discourages students from doing analyses. In contrast, JMP loads files quickly and runs complex analyses with no noticeable lag, even on older laptops."

And Lenk identifies the help files as, well, helpful. If you need answers, they are readily accessible. He considers the JMP help files to be among the best ordered, best written and, consequently, among the most useful he's encountered.

JMP gives students more than direct access to a breadth of statistical analyses. No matter what educational credentials Lenk's students have, they gain the competence to interpret data, applying it in class and beyond.

On the job

Toby Hall is a vice president and chief actuary with Delta Dental and recently earned his MBA at the University of Michigan's Stephen M. Ross School of Business, where he learned to use JMP in Peter Lenk's applied forecasting class.

Hall says he immediately saw a number of ways he would be able to use JMP on the job.

"We sit atop an incredible amount of dental data," Hall says. "That data is used to generate rating formulas and forecasts.

"My plan is to really up the ante on our corporate forecasting claims, and I think JMP is the tool to do that."

He says he'll use SAS to extract the data, sort it and do some joining of different databases – essentially, the "backend heavy lifting of the data." He'll then hand it off to JMP for forecasting.

"JMP is the ideal tool for forecasting because we can do it in interactive mode," Hall says. "We can fit a model and see the output of step one before we decide what to do with step two."

Learn more at **bus.umich.edu**.

ONLINE

Free trial

Try JMP free for 30 days and start your journey of dynamic statistical discovery.
jmp.com/trial

Customer stories

See how other organizations get real work done with JMP.
jmp.com/success

Webcasts

Watch webcasts to see JMP in action and learn from world-renowned thought leaders.
jmp.com/webcasts

Get social with JMP®

Join the conversations.
jmp.com/social

SAS Institute Inc. World Headquarters **+1 919 677 8000**

JMP is a software solution from SAS. To learn more about SAS, visit **sas.com**
For JMP sales in the US and Canada, call 877 594 6567 or go to **jmp.com**