

Students Serve Community through STATCOM



Nilupa S. Gunaratna,
Department of Statistics, Purdue University

Five years ago, Purdue University statistics graduate student Nels Grevstad decided to use his statistical skills to help the local community. He teamed up with Ed Eiler, superintendent of the Lafayette School Corporation, who wanted to study the impact of the state funding formula on his corporation. Nels analyzed data on public school funding in Indiana, and his results were used by state lawmakers to change funding policies.

The success of this volunteer project soon was followed by the opportunity to work on another community project, which caught the attention of several other graduate students attracted by the idea of doing statistics as a community service. Together, these students formed Statistics in the Community (STATCOM), an entirely student-run service within Purdue University's Department of Statistics that provides free, professional statistical consulting to local, governmental, and nonprofit organizations.

In the five years since its start, STATCOM has worked with about 30 community clients and involves 35–40 active students every semester. Most are master's and doctoral students from the Department of Statistics, while a few are graduate students from other academic departments and senior undergraduate students in statistics or actuarial science. All students volunteer their time and work as teams on one or more projects, which now include P–12 outreach and undergraduate recruitment as well as consulting projects outside the local area.

Beyond the Classroom

A city government wants to assess residents' satisfaction with its services. A performing arts organization would like help identifying likely donors. An elementary school wants to know if students admitted under special circumstances are performing as well as their peers. A drug rehabilitation center wants to assess its clients' success in staying off drugs for six months after completing an educational

program. These are all examples of past STATCOM projects. In recent years, STATCOM has undertaken several major projects for the West Lafayette City Government. The projects have ranged from assessing parking concerns in a commercial area to setting priorities for the city's next strategic plan. Many governmental and nonprofit groups—from the local library to family support centers—need to assess performance, identify priorities, and decide where to spend limited resources. However, most of these organizations do not have the resources to hire a professional consultant. As a result, needed assessments may never be done, or decisions may be based on information gathered and analyzed in statistically unsound ways.

Graduate students in STATCOM work on all aspects of a project, from the initial contact to the presentation of results and follow-up. This usually involves one or more meetings at the client's institution, where students can talk to the client face-to-face and better understand both the client's needs and constraints. Because most clients have little or no training in statistics, these projects are often exercises in translating a client's problem into a statistical problem, solving the statistical problem, and translating the results back into a form that is both understandable and useful. In addition to a detailed written report, students generally give oral presentations on the results, allowing clients to ask questions and provide feedback. Several of these presentations have taken place at public meetings, giving students additional experience in communicating with the general public.

STATCOM's activities are not limited to consulting. In 2004, the group started an active P–12 outreach program that is interested in classroom experiences, state and local fairs, and other community events. Other graduate student teams have visited undergraduate classes to demonstrate the role statistics plays in society, provide examples of how statistics arises in other disciplines, describe potential careers in statistics, and recruit students for graduate study in statistics.

Benefits for All

The benefits of this program are clear: Community organizations get free consulting while learning to use statistically sound methods and enjoying an enhanced partnership with the university; the university receives increased interaction and visibility in the local community; and students gain satisfaction from the social value of their work. In the process, students also acquire practical, hands-on consulting experience in leadership, teamwork, and written and oral communication with nontechnical audiences. They also learn to manage a busy organization and team projects.

STATCOM offers less tangible benefits as well, particularly for senior undergraduates and junior graduate students. Joining a team leads to early involvement in the practice of statistics, often before students have completed the coursework necessary to join an on-campus consulting or technical assistance program. This is a strong motivator for students involved in coursework only and unsure of where their statistics education will take them. Newer students benefit from interaction with and mentorship from senior students, and the emphasis on teamwork leads to a greater sense of collaboration and community within the student body while fostering individuals' confidence in independent work.

What Makes It Work?

More than a third of the Department of Statistics' graduate students participate in STATCOM activities every year. There are several reasons why the program remains successful and continues to grow. Support from the leadership, the faculty, and the staff is naturally a major factor—and not just in terms of advising or funding for materials. Faculty and staff also refer potential clients to STATCOM, provide computer support, and assist with web site development and the use of publishing software to design publicity materials.

STATCOM is recognized as an integral and permanent part of the Department of Statistics. It is featured on the department's web site, and articles on its activities appear regularly in departmental publications. A community service award is given annually to a graduate student, and information on the program is a regular part of graduate student orientation. Also, students are encouraged by the faculty to get involved in STATCOM activities as a supplement to their education.

Though the faculty provides strong support, it does not get involved in the workings of STATCOM. This second aspect—student autonomy—is a major factor in the program's success. All participation is voluntary, and students do not receive academic credit or payment for their work. Some students participate in only one activity per year, while others take on leadership roles or join several teams. The absence of direct faculty supervision allows students to solve problems and explore new approaches to community service independently or through group decisions.

STATCOM also has a flexible structure, as leaders and experienced students graduate every semester. The structure was designed carefully to distribute responsibilities and involve many students



A STATCOM team presents survey results to the Tippecanoe Arts Federation's Board of Directors, which used the results to formulate their next strategic plan.



STATCOM students bring statistics to the Indiana State Fair.

in the decision-making process. While experience in teamwork is valuable in itself, it also accommodates busy schedules and allows students to take 'time off' and give priority to other responsibilities. Meanwhile, emphasis on interaction between newer and more senior students within teams and the larger group develops consultants' skills and builds expertise within the body of students, also helping to ensure continuity throughout time.

Are You Interested?

STATCOM was pleased to meet with ASA Past President Fritz Scheuren when he visited recently. He asked what could be done to start service-oriented consulting programs at other colleges and universities. Starting such a program requires a supportive academic department and faculty as well as a core of graduate students who are interested and willing to take the lead. Students will have to decide what they hope to gain and what their mission will be, determine how to organize themselves, and develop procedures for conducting projects with community clients.

The STATCOM group at Purdue University welcomes the opportunity to work with students at other institutions who are interested in doing similar work. Our past five years of experience could be a valuable resource for any student group that would like to get involved in their community. We also are glad to share the materials we have developed along the way, including a procedures handbook that details STATCOM's organizational structure, client interactions, legal issues, and documentation; publicity materials, including a tri-fold color brochure for potential clients; a template for an initial meeting handout; a confidentiality form required for all student consultants; and sample reports to clients.

In addition to developing partnerships with interested newcomers, we also are looking for others—especially student groups—already engaged in statistical consulting as community service or service learning. Such ongoing relationships would help us improve our own model of a community consulting service. Anyone interested in learning more should email statcom@stat.purdue.edu or visit www.stat.purdue.edu/external_relations/statcom. ■