 SRC Bulletin

It is by now widely known around campus that Mary Thompson, SRC founder, Co-Director, and longtime member of the Department of Statistics and Actuarial Science, was recently elected a member of the Royal Society of Canada. On behalf of all her friends who read this Newsletter, congratulations Mary on this well deserved recognition.

The SRC welcomes a new call centre supervisor, Lindsey Skromeda, who has replaced our out-going (in every way!) supervisor, Jeremy Meissner. Jeremy has decided to attend Teacher’s College and we wish him every success. Lindsey comes to the SRC with experience working with Tracy Peressini on the “Families First” Project at Renison College. Her responsibilities included data collection and office management. Lindsey has a B.A. in Sociology from UW. The transition to a “new leadership” in the call centre has gone very smoothly, thanks to Lindsey’s hard work and diligence.

The new logo for the University of Waterloo Survey Research Centre appears in this edition of the Newsletter. Thanks to Matt Regehr of UW Graphics for the design work.

John Goyder
Editor, SRC Newsletter

Web Surveys

Web surveys of students on campus are exploding. This Fall 2006 term alone has seen:

- Survey of students entering the Faculty of Engineering, conducted by Steve Spencer, Department of Psychology, assisted by Jennifer Peach. It was concerned with issues around women in engineering. An e-mail contact was sent to all incoming first year Engineering students, seeking to recruit them for a study in which they were asked to complete on-line a ten minute task, three times a week, on three different occasions over the term. Incentives valued at $1.00 were given for each task, and could be in the form of an ITUNE, a chocolate bar, or a Tim Horton’s certificate. Participants completing the whole study also received $10.

- Survey on academic integrity. All UW students, both undergraduate and graduate, plus faculty. Part of a North American wide project run out of Duke University.
Survey on opinions about a universal bus pass (i.e., collect a fee from all students as part of registration, the University makes a lump sum payment to Grand River Transit, and then every student has unlimited free bus travel). Sample of 2,000 UW students, and also a sample from Conestoga College. The design includes a random draw for participants to win small prizes. Administered by the UW SRC.

Survey on volunteering, sample of 2,500 UW students. Part of a larger project co-ordinated by Steve Brown, Department of Political Science at WLUS, including students at Laurier, University of Guelph, and Conestoga College. Incentives: five free downloads of tunes, and at UW only, gift coffee mug to each participant. Administered by the UW SRC.

This cluster of activity makes a good “natural laboratory” within which to study the effect of repeated surveying on response rates. Prior to the intensification of web surveying, a representative response rate for a well conducted project would be in the low 'forties (e.g., survey by Mick Couper, at University of Michigan, conducted in 1999, 41%, reported in Public Opinion Quarterly, Summer 2001). This assumes several reminder e-mails and some sort of prize or reward as incentive. Couper’s respondents were given a free commemorative University of Michigan book celebrating a successful football season. There were two reminder e-mails following the initial e-mail contact. A 2001 UWSRC survey on the universal bus pass also had 41% (three follow-up e-mails, and random draws for small prizes). It is much harder within the general public population to know the consequences for response rates of repeated surveying, since it will be unknown how many requests people are receiving.

We asked Keith Warriner for some information on his project, since the incredibly high response rate seemed of wide interest to local survey researchers. Thanks to Keith for preparing the piece. Ed.

**Mail Survey Gets High Response Rate**

By Keith Warriner, Department of Sociology

With survey response rates falling faster than the Bush administration’s popularity, a recent mail survey of Waterloo west side residents bucked the trend by achieving an overall 85.6 percent response rate. This is considerably higher than what is viewed as very good for response rates by mail surveys of the general public, while being comparable to the very high response rates found for heavily resourced Statistics Canada telephone and face-to-face surveys. Yet this was achieved on a shoestring budget and the efforts of just a tiny research team.

Background on the Waterloo West Side Survey
Since the early 1990s the lands on the west side of Erbsville Road adjacent to Wilmot Township in the City of Waterloo have been the subject of progressive urban planning. These lands sit atop the Waterloo Moraine, repository
for much of the groundwater used to supply the population of the Region of Waterloo. The raised, rolling topography is characteristic of many moraines while being constituted of impermeable clays beneath which lie the reservoirs of clean water. In conjunction with this terrain are found woodlands, wetlands, ponds and cold water creeks suitable for sustaining a wide ranging ecology. These lands support a number of protected regions including Forested Hills Environmentally Sensitive Policy Area, the Laurel Creek Conservation area, and a portion of the recently designated Laurel Creek Environmentally Sensitive Landscape.

Notwithstanding the ecological significance of these lands, residential development has been ongoing. Currently there is hot debate over three new subdivisions proposed for the east side of the Wilmot Line. On the west side of Erbsville Road, however, subdivisions comprising more than twelve hundred homes have already been built. Planned since the 1980s, these subdivisions by no means reflect the routine development approvals found elsewhere. All of the new westside neighbourhoods have been the focus of considerable research and planning by the City and Region of Waterloo with the goal of preserving the natural environment and sensitizing west side residents while encouraging stewardship. The planning for these neighbourhoods has resulted in a number of progressive urban design features intended to protect the environment and to facilitate its enjoyment. These include wide, naturalized buffers preventing encroachment into the protected woodlands, along with an extensive series of trails directing pedestrians around the forest and along designated routes within it, as well as a series of stormwater management ponds to send runoff to the stormwater system and prevent flooding and streambank erosion and ongoing biomonitoring of the area’s ecology. In addition, new residents are provided with an extensive information brochure explaining the ecological features of their neighbourhoods and the steps taken during planning to protect it. A further innovation with respect to these developments is their modified “new urbanism” design. New urbanism principles emphasize neighbourhood planning on a more human scale intended to promote community. In contrast to the alienating, car dependent suburbs prevalent since the 1960s, new urbanism emphasizes smaller scale development and engagement among residents. This is aided by designing lots with narrower frontages along with homes with front porches positioned closer to the sidewalk. Streets are laid out in a traditional grid system, rather than as cul-de-sacs which isolate people from their neighbours. In new urbanism design there is the goal of promoting interaction and participation among residents, less reliance on cars, more walking and more utilization of neighbourhood features, such as parks, shops and greenspaces.

West Side Survey

It was against this backdrop that the need for a survey of westside residents was determined. To what extent was the planning vision for Waterloo’s westside being realized? Were residents aware of the environmental features of their neighbourhoods and supportive of steps to preserve them? Were people enjoying the trails and greenspaces? Was there less dependency on driving and more walking? Did people know their neighbours? Was there a strong sense of community? What role did the natural environment play in terms of neighbourhood involvement, interaction and the building of community spirit? Were new urbanism goals being realized?

The survey was undertaken by Keith Warriner, of the Department of Sociology and School of Planning, along with Master’s student Anna Marie Cipriani, who also happens to be an environmental by-law enforcement officer for the City of Waterloo. Prior to the survey being administered Ms. Cipriani undertook unstructured interviews among a number of westside residents, along with field observation. These, along with the survey findings, will constitute the data for her thesis in the School of Planning. As well, in order to allow a comparative perspective with respect to residents of traditional urban and suburban neighbourhoods in the K-W area, a number of questions from the westside survey were replicated in the 2006 KWAMAS administered a short time prior to the westside survey.

Warriner has been doing mail surveys on environmental issues since his days as a graduate student. Environmental topics are considered by many respondents to be relevant and important, and university sponsorship adds credibility, so these surveys have the potential for achieving high response rates. Nevertheless, even in such cases attention to detail is the key for being either very successful or getting something like a 40 percent response.

Dillman’s Total Design Method (TDM) has long been the gold standard for the design of mail surveys, and the westside survey adhered closely to TDM principles. These procedures include an advance letter, a survey package containing a cover letter, survey booklet and addressed, stamped return envelope, five day reminder postcard and two
run follow-ups. In addition, consistent with findings on the effects of survey incentives (Warriner, et al., Public Opinion Quarterly, Winter 1996) every household in the sample of 600 was sent a $5 bill. This was included at the time of the initial mailing while stating that it was provided in recognition of the inconvenience caused by being in the sample not as a condition for completing the questionnaire. Research shows that unconditional a priori cash rewards increase response rates, and it appears also to be the case that such gifts lead to earlier responses, obviating the need in some cases for sending follow-ups. Since each full follow-up to the westside survey cost approximately $4 in printing, postage and supplies, the cash advance was nearly covered whenever it reduced the need for a follow-up by one and was a net savings if it eliminated the need for two follow-ups.

In other ways the survey was never sparing nor stinting. The questionnaire, costing $1.65 each, was printed in booklet format on good paper and included a high quality, full colour cover. The nineteen page (247 variable) questionnaire itself contained several full colour charts and photographs. In accordance with sound survey methodology all letters were on university letterhead and signed personally by the PI, and all mail outs and returns used only first class stamps. Mailings were all carefully timed, first delayed by a month due to the unexpected call of the federal election which created a concern that some respondents might consider the survey an imposition during a national election, and then such that all mailings would arrive on a Monday with less likelihood of being set aside due to activities scheduled for the weekend. Finally, in addition to the mail version of the questionnaire, all respondents were given the option of completing a web-based version developed and administered by SRC Manager Kathleen McSpurren. While web surveys on their own have notoriously low response rates, they are increasingly being used to complement other survey methods. Conceived largely as alternatives to standard survey modes, web returns may contribute to a net increase in response rates by appealing to a younger, more techno-focussed respondent who would otherwise not complete a mail survey. In any event, in terms of survey design the web version adds another facet to the Total Design Method, and in the case of the westside survey resulted in a total of 67 returns, or 11.6 percent of the response rate.

The initial mail out took place on March 3, 2006, with the final return received May 17th. The return rate and pattern can be seen in the following table.

<table>
<thead>
<tr>
<th>Target sample</th>
<th></th>
<th>600</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-deliverables</td>
<td>23</td>
<td>3.8%</td>
<td>Web returns¹</td>
</tr>
<tr>
<td>Eligible sample</td>
<td>577</td>
<td>100.0%</td>
<td></td>
</tr>
<tr>
<td>Initial mailing</td>
<td>389</td>
<td>67.4%</td>
<td>62</td>
</tr>
<tr>
<td>1st Follow-up</td>
<td>65</td>
<td>11.3%</td>
<td>2</td>
</tr>
<tr>
<td>2nd Follow-up</td>
<td>40</td>
<td>6.9%</td>
<td>3</td>
</tr>
<tr>
<td>Total returns</td>
<td>494</td>
<td>85.6%</td>
<td>67</td>
</tr>
</tbody>
</table>

¹ - As a subtotal of all returns

Clearly the vast majority of respondents completed their survey on the first wave. Assuming a traditional 40 percent response rate to the initial mailing of a quality designed mail survey, plus 10 percent to the first full follow-up, it can be estimated that about $1,800 was saved in follow-up costs in the case of the westside survey as a result of fewer mailings. This is less than the $3,000 expended in prepaid cash incentives, but on the other hand the two researchers were exempted, to a degree, from the time and costs of doing follow-ups. In the case of a larger survey with more salaried personnel the savings would be proportionately greater. But more importantly, at well over 80 percent, the initial return was far above even the optimistic projection of the researchers of closer to 70 percent. Why such an excellent response? First, there are good grounds for expecting a high response rate, even these days, to a survey on environmental issues, especially on a very salient topic in connection with one's own neighbourhood and...
administered by a respected, local university. And of course the prepaid cash incentive helps to create a bond between the researchers and the public. Despite this the researchers are still puzzled by the higher than expected response. The attention to detail and compulsion to leave no stone unturned in terms of the scrupulous administration of the survey appear as features benefiting this particular success.

Finally a note on survey costs. University surveys drawing on the efforts of students who will benefit from the data in terms of the completion of their programs always have a distinct advantage over those in the commercial sector which must pay far higher labour costs while also turning a profit. But university surveys are expected to set the standard in terms of both sound methodology and high response rates. In this case total survey costs were $10,802 consisting of $2,685 (25%) in printing, $2,807 (26%) in postage, $3,000 (28%) in cash incentives, $2,000 (19%) in additional hourly labour and $310 (3%) in supplies. These represent costs of around $19 per contact and $21.86 per completed return, and may reflect current baselines for good mail surveys likely to achieve acceptable response rates.

**Speakers and Seminars**

Sharon Lohr, from Arizona State University, was a guest of the Department of Statistics and Actuarial Science and the Survey Research Centre on October 27th, 2006. Her talk was on inference from multiple frame surveys. A multiple frame survey uses more than one sampling frame, and must deal with the probable overlap between the two. One example Sharon gave was surveying the homeless, where one frame might be those sleeping at a shelter, the other those who visited a soup kitchen. Significance testing for such a survey poses difficulties, and much of the talk concerned the statistical techniques needed. Sharon Lohr is author of the widely known text *Sampling: Design and Analysis* (Duxbury, 1999).

Cam Davis, below (left), meeting with students

Sharon Lohr, above

Cam Davis, Senior Vice President with Decima Research, spoke on November 17th 2006, describing the panels of respondents for web surveys now being used by commercial survey firms. He noted that such panels tend to become populated with "professional respondents." Contrary to the classical "middle class bias" common to surveys, these participants are often poorer people from outside the work force. There was a good discussion period, and a good lunch at the University Club afterward!
**SRC Courses**

In Spring Term 2006, both STAT 890 and SOC 697 were offered, with each attracting a mix of students from several corners of campus. Both courses are interdisciplinary, open to both Master's and Ph.D. students from all departments on campus, so long as they have some preparation in social science methodology/statistics. STAT 890 covers statistical issues in the sampling design for surveys, and techniques for data analysis. SOC 697 is about how to frame survey questions, and how to conduct the data collection.

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**STAT 890, Spring 2006**

Left to right, front: Jun Liang, Mary Thompson, Mi Yan, Laura Ma, Kristen Maddalena. Back: Hui Zhao, Joe Colaiacovo, Karen MacAlpine, Zhaohui Li, Enayetur Rabieem, Charlotte Grieve, Cesar Ortiz, Grace Yi

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**SOC 697, Spring 2006**

Left to right: Marina Korotkikh, Joe Colaiacovo, Andrei Furnica, Hillary Arnold, Marlene Santin, Emily Pomeroy, Monica Hwang, Suzanne Davis, Karen MacAlpine. Not in picture: Walid Bahamdan, AlOjari Ahmed

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SOC 697 will be offered in Spring 2007. STAT 890 will next be offered in Spring 2008. See the SRC website <www.src.uwaterloo.ca> for course details.