

## Telephone Survey Methods

Our CATI survey lab has 93 stations, making it among the largest university-based survey units in the country.

Our state-of-the-art voice-over-Internet protocol (VOIP) telephone system uses Asterisk open source technology. This allows us to record 100% of the phone calls for quality control purposes. Our system also facilitates live monitoring during shifts and allows clients to conduct real-time monitoring remotely by appointment.

With 93 CATI stations, the number of interviewers on staff often exceeds 200, depending on survey load, which fluctuates throughout a given year. At any point in time, 20 – 30% of the interviewer staff are fluent in both Spanish and English, as are some supervisors. The UFSRC is one of the largest employers of students at the University of Florida, although over half of the interviewing staff is non-student. This gives us the benefits of having an interviewing force that is educated and enthusiastic while maintaining continuity without risk of “gaps” during school breaks (as often happens with university-based centers that rely entirely on student labor). Our interviewer corps is ethnically diverse and balanced by gender.

The telephone facility operates 7 days a week, on weekdays from 9 a.m. to at least 9 p.m., and the toll-free phone number that we have been using for more than a decade (1-888-536-2434) rings straight to the supervisor desk. Thus that phone number is usually answered by a human and incoming calls can be quickly turned over to an interviewer to conduct the appropriate interview for a particular study (even if the caller doesn't remember the survey name, any sample phone number can be looked up in our Scheduler software).

Since 1999, the UFSRC has used Sawtooth Technologies sample management software WinCati, along with the Ci3 questionnaire authoring system. Ci3 allows for the coding of extremely complex questionnaires. WinCati is a sample management program based on the Sybase database engine. It operates in client/server mode so that stations make queries to the database rather than passing active cases to workstations. This system centralizes the survey databases, minimizing data loss and making system backups and system administration more efficient.

WinCati provides flexibility to interviewers, supervisors, and sample administrators. Through WinCati, interviewers can interact with individual records in many ways. They have the option to go through a survey in practice mode, in order to familiarize themselves with the survey, or data collection mode, to make actual phone calls. They can also read the history on a call by clicking on an “attempts” button. The ability to record and read call histories helps interviewers prepare for the call by identifying the best approach to use with respondents.

Interviewers can also retrieve specific cases, such as when respondents call in on our toll-free line wanting to complete the interview. Each case is assigned an ID number, which is used by interviewers to retrieve cases on their computer.

When the call is complete, an interviewer selects the disposition code they feel best represents each call outcome or situation. WinCati offers the coding schemes suggested by the American Association for Public Opinion Research,<sup>1</sup> but disposition codes can be customized for specific studies. Interviewers are required to leave notes explaining the outcome of each call attempt. This detail on the attempt history helps the next interviewer complete an interview or more

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properly code the disposition of the call. The accurate coding of dispositions is vital to calculating response rates.

Project managers directly access and edit survey sample, specifications, and questionnaires from WinCati Supervisor, including a full suite of reports and data analyses. These reports allow the project manager to view survey productivity and identify the status of particular cases, such as

- Sample – Reports the distribution of most recent call disposition.
- Quota – Reports the distribution by quota, such as county targets.
- Disposition – Reports the distribution of final dispositions and response rate once cases have been coded for final dispositions.
- Callback – Reports the distribution of callbacks by date assigned.
- Interviewer Productivity – Reports the productivity for a survey overall or by any defined time period.

WinCati assigns status and priority codes, which can be customized to meet the demands of various protocols.

WinCati's capacity for specifying a number of attempts and scheduling those calls at various times of day and days of the week ensures the systematic contact required by even the most demanding protocol, with attempts at different times on different days of the week and in different weeks, always within a window based on the respondent's local time.

A key component of the UFSRC management is our locally developed Java-based lab management software called Scheduler. This software tool sets the UFSRC apart from most telephone survey facilities in both the public and private sector. This software, written by UFSRC programmers, provides a fair and objective review of interviewer performance. Scheduler runs in the background and interfaces with WinCati to create an environment of ongoing, unobtrusive monitoring while optimizing the assignment of interviewers to various projects. It handles many of the urgent tasks that typically fall to supervisors, so that they are free to focus on the more important issues of interviewing technique and nurturing new interviewers.

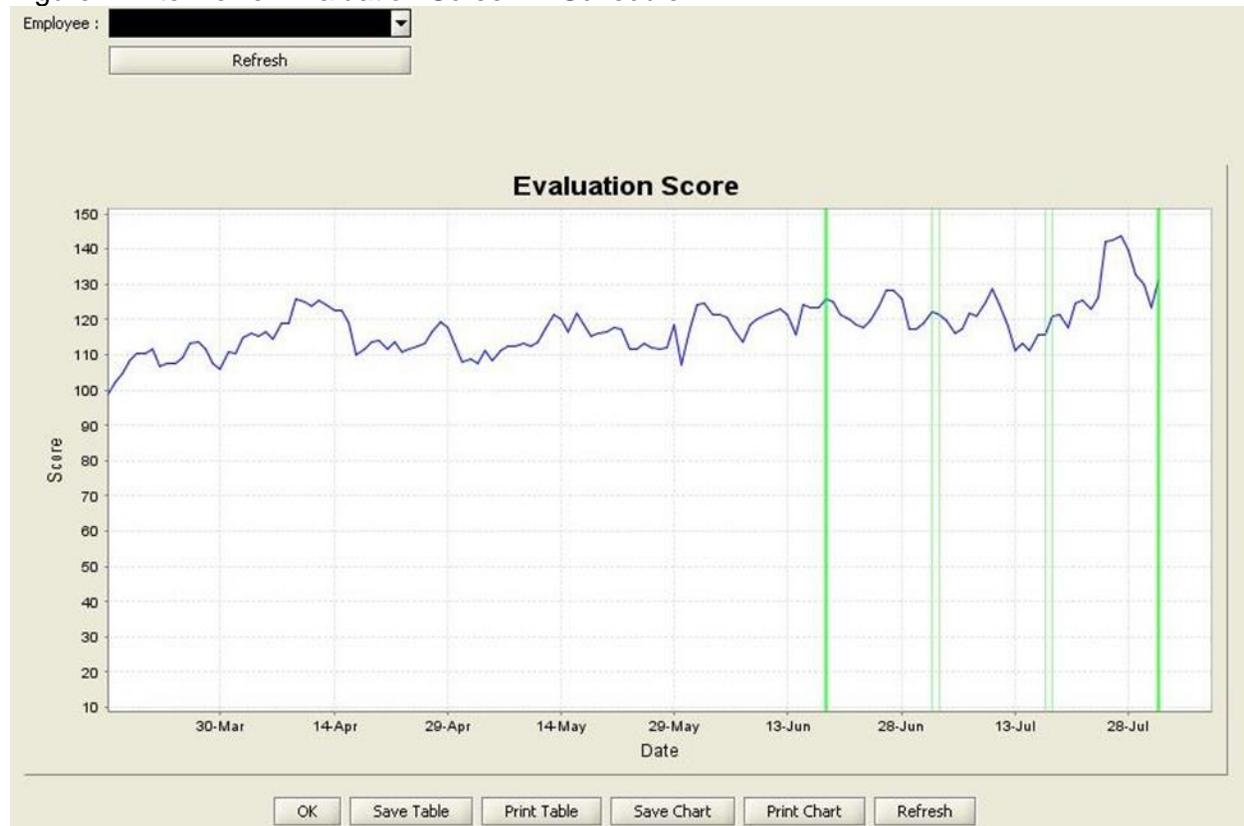
As is often the case with software, the set of reports available in WinCati does not fit all our survey needs. Like most sample management packages, WinCati does not yet incorporate many of the lab management tools necessary for scheduling, monitoring, and evaluating interviewers. Thus we developed our unique Scheduler software in order to provide a set of custom reports on many aspects of interviewer productivity, attendance, and coding accuracy. It also provides real-time monitoring of station inactivity.

Over the past eight years, Scheduler has become central to our lab management philosophy and is a critical part of our technical infrastructure.

WinCati allows for optimum management of sample and study parameters, but it does not determine staffing levels related to survey deadlines, nor does it assist with tracking interviewer time records and productivity across surveys (WinCati does calculate productivity for an individual survey, but this is based on WinCati time, not necessarily the time the interviewer is paid for). Scheduler operates by reading data from the WinCati Sybase tables (which record what happens on each call) and combining those data with data from Asterisk call recordings, employee schedules, and employee roles—all in real time.

A screen shot of the Scheduler interviewer evaluation screen is shown in Figure 1. This process allows project managers and interviewers to know where an interviewer stands in meeting expectations for productivity and triggers a human interaction if necessary.

Figure 1. Interviewer Evaluation Screen in Scheduler



In the past, lab staffing was determined by a staffing supervisor who spent many hours reconciling interviewer schedules with the demands from each project. This process was made more complicated by the roles required for each survey, such as refusal converters and Spanish-speaking interviewers. When several surveys are fielded, they create a complex set of competing demands that are difficult for a human to sort out. We incorporated general scheduling rules into Scheduler and fine-tuned them into a more complex and efficient set of rules. This results in constantly updated and efficient allocation of lab staff based on sample availability of each active survey in the field, interviewer schedules, deadlines, and productivity. Scheduler allocates interviewers four days in advance and then recalculates interviewer assignments at the beginning of each shift. Interviewers are able to view their schedules and cancel or add shifts online through Scheduler.

Prior to implementing Scheduler at the lab, there were 5 to 15 minutes of unproductive time at the start of every shift as interviewers looked up their assignment on a printed sheet or received their assignment from a shift supervisor. This is eliminated with Scheduler. When interviewers arrive for their shift, they immediately login to a workstation. Scheduler sees their assignment and automatically logs them into the assigned WinCati survey. Scheduler compares their arrival time to their assignment and keeps an attendance score. Interviewers “bank” attendance by adding available open shifts to their schedule.

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Scheduler also logs interviewer productivity and idle time and then calculates a productivity score. This is a weighted average of their productivity on each survey compared to all other interviewers who have worked on the same survey. Productivity is a weighted average over their past 45 days of work. Currently, general interviewers are required to maintain a score of at least 84% of the lab average, while refusal converters must maintain a score of 107%. The higher requirement for refusal converters is due to a combination of higher expectations given a higher hourly rate and expected higher hit rates due to pre-screening of telephone numbers disposed as ineligible.

The Asterisk system records all phone calls; recordings are kept for six months before being purged. Scheduler randomly selects calls and assigns them to a pool. The calls are then listened to and evaluated by evaluation supervisors. The supervisor enters fields for each call determining whether the coding was correct. Cases that are not complete are evaluated on disposition coding. Certain types of miscoding block interviewers from the system until they meet with an evaluation supervisor, such as eligible cases coded with a terminal disposition like disconnected number. Some patterns of behavior, such as short interviews or short calls, are automatically sent to the top of the pool.

Scheduler also contains a budget module. Scheduler generates and inputs interviewer time records into the University of Florida PeopleSoft system and therefore maintains accurate records of both expenses and revenue. This enables project managers to track costs and productivity in real time. It also ensures very accurate expense records.

The UFSRC lab management system is integrated so that most of the repetitive and tedious aspects of lab management are incorporated in Scheduler. The software is more vigilant and objective for administering these aspects of management than human supervisors who can't be in more than one place at one time. This leaves more time for project managers and supervisors to attend to aspects of the lab that are not routine, such as idiosyncrasies of each survey and special interviewer circumstances. Scheduler ensures a complete and systematic set of data that UFSRC lab managers use for quality assurance and control measures.

Phone numbers are dialed at various times of day, both weekdays and weekends. Generally only 20% of calls will be made during the day, but we can accommodate respondents who prefer a call at that time. Lab staffing at the UFSRC is adjusted to accommodate the studies at a given point in time. The UFSRC routinely extends operating hours to accommodate interviews in other time zones, such as surveys in and around Pensacola, FL (which is in the Central time zone) or national surveys involving interviews in the Midwest and West Coast. Our Scheduler lab management program can easily accommodate the shift assignments based on the time zone.

### **Monitoring Interviews and Ensuring Data Quality**

One of the strengths of telephone interviewing at the UFSRC is the ongoing system of unobtrusive monitoring and feedback to interviewers. Our standard practice is to record all phone calls. Because interviewers must sign on with a password, interviewers can be locked out of the system until concerns are discussed with a supervisor, so that the data collection process is protected. Clients have the ability to monitor from a remote location through Super View, which provides a mirror image of what is happening on the interviewer's monitor, so that the viewer can see what answers are being recorded as they listen to the call.

### ***Evaluation Monitoring Program***

The Asterisk system records all phone calls. Scheduling software randomly selects calls for evaluation by a supervisor. Supervisors currently review approximately 1,000 calls a week. These are primarily to ensure proper coding of cases and to create a vigilant environment that interviewers know is there to encourage quality data collection and discourage any attempt at cheating. This ensures quick identification of potentially fraudulent cases.

For the most part, dialing rates more than two standard deviations faster than the lab average indicate improper dialing or improper interviewing technique. Improper dialing includes “fake” dialing or disconnecting the phone call before five rings. Improper interviewing techniques result in shorter surveys, thus more dialing per hour. Supervisors heavily monitor fast dialers for misdialing, pace, abbreviation of questions, and failure to probe or clarify.

Interviewers with dialing rates more than two standard deviations lower than the lab average are also monitored heavily. They may have low dialing rates because they choose not to dial at an average pace or because they have exceptionally or consistently long interviews. If the latter is the reason, they may be encouraging or engaging in personal conversation with respondents, thereby introducing bias to the data. Interviewers who discuss personal issues with respondent are spoken to immediately. If they engage in personal conversation again, they must speak with the field director.

However, such data suggesting a fast or slow dialing rate is only a starting point for further examination of an interviewer’s performance, which is not automatically assumed to be negative. By turning to the recordings, a fair and accurate assessment can be made. For example, with health surveys such as BRFSS, sometimes respondents try to use the interview as an opportunity to complain about their health or medical care, which slows down the interview. Even if the interviewer attempts to move through the questionnaire as quickly as possible, a respondent’s insistence on adding comments to many items can cause the interview to run long, even though proper interviewing technique was followed.

### **Real-time Shift Monitoring**

All shift supervisors are required to monitor the interviewers working during their shift. The monitoring system allows supervisors to tap phone calls undetected as they occur, listening to what both the respondent and interviewer says. For health plan evaluation (CAHPS) studies, we listen to at least one call per interviewer per month, with a goal of 5% of all completed interviews being monitored. Shift supervisors use Super View to open a mirror image of what is happening on the interviewer’s monitor. This two-way monitoring allows supervisors to see what answers are being recorded as they listen to the call. Supervisors can verify whether or not interviewers are reading the questions as they appear on the screens.

New interviewers (those employed less than one month) are given the highest priority on the monitoring schedule, followed by interviewers who had a low score on previous monitor reports. Shift supervisors receive e-mails from the evaluation supervisors (who assess recorded interviewers) listing interviewers who received low overall monitoring scores. The evaluation team specifies areas where the interviewers are having problems, advising supervisors what to listen for. Interviewers with low dialing rates, poor cooperation rates, and any other problems are also included in these lists.

Each call is scored on a set of criteria, including

- Survey questions are being asked as they appear on the screen
- Execution of the respondent selection procedure

- Probing for answers
- Proper clarification
- Handles feedback properly
- Timing and pace are appropriate
- Quality of the interviewer's voice is appropriate
- Overall impression of the interview

Interviewers are rated on a scale of one to five on each category. The interviewer is then given an overall score from the average of the categories. There is an "additional notes" section where the supervisor includes detailed comments justifying their ratings for each category. Screen names and thorough explanations of what happened during the interview are noted in the record. The interviewer name, supervisor name, survey name, date, and shift are also entered on each monitor record. Supervisors discuss monitor reports with interviewers each shift, commending interviewers with high scores and offering suggestions for improvement to interviewers with low scores. Interviewers also receive feedback via e-mail throughout the workweek.

This method has proven the most reliable way to detect interviewers who do not read verbatim, rush respondents, take shortcuts in probing, or complete interviews after respondents terminate the call. Once monitoring priorities have been met for a shift, the supervisor then randomly monitors other calls.

#### Coding Confirmation

The outcome of each dialing attempt is coded with a disposition. Accurate coding of each case is essential to data integrity, since those codes become the basis for calculating rates of response and cooperation. To ensure accuracy of disposition coding, Scheduler software samples a set of disposed cases for each interviewer and puts them into a pool to be reviewed by the evaluation team. Interviewers having trouble or who are found to miscode cases are targeted for further review.

#### Tracking Interviewer Performance

Interviewer evaluation is thorough across a range of parameters and is constantly updated through a combination of Scheduler software monitoring (tracking of attendance and other statistics), evaluation supervisors who listen to recorded calls, and monitoring of live interviews during the shift. Scheduler produces an interviewer productivity score based on a weighted average of productivity compared to other interviewers by survey. Those who fall below a set score (84% for general interviewers and 107% for refusal converters) are automatically locked out of the system until they meet with a supervisor.

Scheduler software tracks all cases where an interviewer has been blocked from the system. If this happens more than three times, their case is reviewed by the field director who will consider the circumstances and recommend additional training or perhaps that their employment be terminated. Given the transparency of the process, interviewers often quit before their case is elevated to the field director.

### Verification

Since the early days of telephone surveys, verification procedures—redialing 5% of the phone numbers to validate the interview—were an integral part of quality assurance. However, newer technology raises questions about the cost-benefit ratio of the practice. We do not use verification because an ongoing, unobtrusive method of effective monitoring is created and maintained at the UFSRC through our standard practice of universal call recording, collecting interviewer data through Scheduler software, and monitoring of both recorded interviews and live interviews during the shift. Our primary concern is respondent burden, not the monetary cost to the UFSRC, because when we have been contractually required to perform this procedure, respondents are often confused or upset, and unhappy at being called yet again.

### Remote Monitoring by Clients

The UFSRC can provide survey research clients with the ability to monitor calls made to respondents on their project from a remote location outside of our call center. Survey clients will be given a secure login to a website maintained by the UFSRC. From this site, they will be able to select a call in progress, provide a phone number for our system to call, and then listen to the audio of the call from their own phone.

### Procedures for Investigating Suspected Fraud

Although data falsification happens rarely, all researchers need to be aware of the potential and develop systems to deal with the issue. At the UFSRC, our integrated system of universal call recording and ongoing monitoring and feedback creates an environment that prevents falsification. However, our stated policy is that if an interviewer is suspected of falsifying data, supervisors conduct an investigation that may include calling back respondents who reportedly completed surveys with the suspect interviewer in the previous two weeks. If multiple respondents claim they never completed a survey with the UFSRC during callback verifications and the computer record points to attempted falsification, the interviewer is terminated. All data collected by that interviewer is discarded. Interviewers who attend the University of Florida are reported to the student honor court for falsifying data. This information is recorded on their permanent university file, which is subject to review by all colleges and departments.

### ***Telephone Interviewer Professional Development***

Telephone interviewers play a key role in the data collection process. They must be friendly enough to obtain cooperation, while maintaining scientific integrity by reading the questions exactly as worded and following specific procedures for recording data. At the UFSRC, we take numerous steps to ensure thorough training and development of qualified, skilled interviewers.

### Hiring

The hiring process begins with a telephone screening of all prospective interviewers. The initial telephone screening provides us with a basic understanding of the applicant's qualifications. We inquire about previous phone and computer experience, past employment, year/major in school, and availability. This conversation gives us an opportunity to gauge how articulate, confident, friendly, and professional the applicant is over the phone. The applicant is rated on these criteria over a scale of excellent, very good, good, fair, or poor. Applicants who receive ratings of "very good" or "excellent" are then scheduled for an in-person interview.

During this visit, similar questions are asked and careful attention is paid to the applicant's demeanor. We discuss more detailed information about the job, such as the pros and cons of working as a telephone interviewer. We provide examples of difficult respondents and offensive refusals. We make it clear that this job is not for everyone.

### General Training

New interviewer training takes place in three phases: initial training session, mentor session for their first three shifts of work on a training survey, and participation in a refusal workshop. The initial training session takes approximately three hours and is conducted by the training supervisor. About 14 interviewers are trained at one time, and training begins with an hour-long PowerPoint presentation that reviews lab rules, policies, the honor code, and a basic understanding of surveys and interviewing techniques. We explain survey structure (i.e., introductions, respondent inclusion and exclusion criteria, question types) and interviewing techniques (i.e., probing, clarifying, pacing), and further facilitate learning by offering examples.

A disposition dictionary is provided in training manuals, giving detailed descriptions of each disposition and how they should be used. Careful attention is brought to dispositions that finalize records. In-depth focus is given specifically to refusals and callbacks. When scheduling callbacks for records, interviewers are trained to probe for a specific date, time, and contact name. Interviewers are also trained on how to leave detailed messages in the notes section of the WinCati callback screen, explaining what was said during their interaction with the respondent. An online system using recordings of actual calls has been developed for training purposes. Interviewers must correctly code these cases to pass the module.

During the initial training, interviewers also learn about and sign an honor code, in which they pledge not to disclose any data they collect during their work at the UFSRC.

Trainees are paired off with experienced interviewers for one-on-one training using practice surveys and role-playing, which introduces new interviewers to common problems, helps them anticipate strategies for dealing with challenging respondents, and shows them how to read questions, including voice intonation and inflection. The trainer first demonstrates then critiques the trainee. The role-playing exercise is repeated until the trainer is confident that the trainee will be able to conduct surveys with minimal data collection errors.

During their first three shifts, new interviewers are required to work on the monthly Florida Consumer Sentiment Index survey under the direction of a mentor, an experienced interviewer capable of answering questions and addressing any difficulties or irregularities that may arise while interviewing. New interviewers spend an hour of their first shift observing their designated mentor before starting to interview. This helps the new interviewer listen for good rebuttals and proper interviewing technique. Mentors are required to complete evaluation forms rating the mentee on categories such as reading verbatim, probing, feedback, clarification, voice tone/pace, and professionalism. The mentors also make notes on work ethic and whether or not the mentee follows lab rules and policies. The mentors review all ratings and comments with their mentee at the end of the shift, providing feedback to the new interviewer to understand shortcomings and improve performance.

Once a new interviewer is mentored three times, the mentor supervisor reviews the mentor evaluation forms and feedback and decides whether the new interviewer should continue to be mentored or immediately move to the next step by taking a test on coding cases and basic interviewing technique. Once an interviewer receives 95% or above on the test, they are graduated from the mentor program and available to train and work on other client surveys. After the first two weeks of work, a new interviewer is required to attend a three-hour refusal workshop dealing with reluctant respondents as well as further developing the interviewer's rebuttal technique. The workshop includes refusal coding and background information on the UFSRC that may be useful when providing feedback for respondents. Role-playing situations

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are conducted over a speakerphone, providing examples of effective and not-so-effective rebuttals.

New interviewers have a one-month probation period to develop their technique and raise cooperation rates. Our involvement of experienced interviewers in training utilizes peer pressure to establish high standards as the community norm and provides novice interviewers with a network of experts from whom they can seek advice in their early months on the job.

#### Study-specific Training

Our Scheduler software ensures that only interviewers who have been trained in a survey (including passing a written test) can work on that survey. For large or demanding studies, the training department develops a PowerPoint presentation that encompasses all aspects of the survey, from respondent selection to survey and sample design, as well as specific survey needs on probing and question explanations. The training is held in groups of about 14 interviewers, at various times to ensure that all can attend. Practice interviews are incorporated into this training. Trainees are then given a test on basic knowledge of the survey. The test questions encompass areas such as for whom we are doing the survey, why we are doing the survey, the population being sampled, types of questions asked in the survey, and any special features of this instrument. For example, if a protocol calls for within-household respondent selection via the household enumeration method, then the training will include detailed instruction on these procedures, including explanations to the respondent. It should be noted that on a random-digit-dial (RDD) survey, this method increases the likelihood of refusals as respondents sometimes consider the method unnecessarily intrusive. We understand this tendency and will make adjustments in our training to counteract that possibility.

Each survey also has a “tip sheet” that can be open on the computer screen while they are interviewing so that they have access to a summary of what was covered in training. This on-screen aid will include items such as a pronunciation guide for technical medical terminology or contact numbers that respondents can call for more information.

#### Incorporating Feedback from Interviewers

Interviewers are encouraged to make detailed notes regarding problems they encounter while interviewing and suggestions for improving survey introductions, refusal rebuttals, survey screens, or programming paths. These notes are given to the shift supervisor, included in shift reports, reviewed daily by the field director, and forwarded to the project manager. This facilitates constant quality control at every stage of survey implementation, including data collection, and involves every employee. While suggestions on survey screens or programming paths would be passed on to the client for possible consideration in future iterations, interviewer suggestions on refusal rebuttals and selling the survey can be immediately implemented into ongoing training at our facility.

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<sup>1</sup> [http://www.aapor.org/AAPORKentico/AAPOR\\_Main/media/MainSiteFiles/StandardDefinitions2011\\_1.pdf](http://www.aapor.org/AAPORKentico/AAPOR_Main/media/MainSiteFiles/StandardDefinitions2011_1.pdf)