



## Finding Patterns and Making Predictions: A Dialogue on Mentored Student Research and Engaged Learning Abroad

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During the week of April 7-11, 2014, a team of five undergraduate researchers and two mentors from Elon University in Elon, N.C., traveled to Hong Kong to conduct oral history interviews with inductees at the Internet Hall of Fame (IHOF) Induction/International IT Fest 2014. Coverage of IHOF is one of the many joint initiatives of the [Pew Research Center's Internet & American Life Project](#) and the [Imagining the Internet Center at Elon University](#).

This essay presents an overview of the planning and research processes used by Elon University School of Communications students who interviewed and recorded inductees to the 2014 Internet Hall of Fame. The essay concludes with a dialogue between a professor/mentor, Anthony Hatcher, and one of the student researchers, Mia Watkins, who conducted follow-up research based on the interviewees' responses. Watkins' commentary on various stages of the process also appears throughout the essay.

### **About the Imagining the Internet Center**

A central purpose of Elon's Imagining the Internet Center is primary source data collection in order to create a permanent, ongoing archive and interactive history of the rapidly evolving world of digital communication, specifically the origins and development of the Internet. These data include video interviews with Internet pioneers involved in significant discoveries and innovations. The Center maintains that learning from past achievements can inform future public policy.

The mission of the Imagining the Internet Center is "to explore and provide insights into emerging network innovations, global development, dynamics, diffusion and governance" (Imagining the Internet, n.d.). In addition to preserving firsthand stories on video, data collection methods also include: written and verbal surveys of innovators and stakeholders; creating timelines of communication; assembling a searchable database of past predictions concerning the future of technology and communication, as well as statements by modern communication pioneers dating to the 1960s; and assembling biographies of internet innovators.

Center Director and Professor of Communications Janna Anderson has sent teams to gatherings around the globe to conduct, record, and archive interviews with internet pioneers such as Vint Cerf, Timothy Berners-Lee, and many others who created the tools and infrastructure now used in daily online communications. Much original research is published by Pew and the Center, including journal articles and books, such as Anderson's *Imagining the Internet: Personalities, Predictions, Perspectives* (Anderson, 2005).

### **Incorporating Undergraduate Researchers**

While reading about internet pioneers and stakeholders is a valuable and enriching experience, hearing from them in their own voice both personalizes and enhances students' understanding of their groundbreaking work. Pew and Imagining the Internet use Elon Communications students for most of this important video documentation. Previous destinations and events covered by Communications students include the Global Internet Governance Forum sessions in Athens, Rio de Janeiro, Sharm el Sheikh, Vilnius, Nairobi and Baku; the IHOF in Geneva and Berlin; and the Internet Society's 20th Anniversary Global INET conference in Geneva.

### **Benefits of Experiential Learning While Abroad**

While the independent study in Hong Kong was not classified as a “study abroad” course, it took on the trappings of a short-term service learning study abroad class. Students performed a public service through oral history documentation, further developed both soft and technical skills, and adapted to a foreign environment over the course of five intense days of work and travel.

Outcomes of study abroad programs have been well documented in the literature. For example, Black et al. (2013) studied student impacts concerning culture, collaboration, communication, and value of knowledge. Study abroad outcomes and benefits naturally vary by length and intent of specific programs, such as a semester or just a few weeks, whether language immersion is a goal, or whether the intent is to engage in service learning. Dwyer (2004), for example, found a correlation between length of stay and degree of impact. Specifically, the study found that study abroad had a significant impact on students in regard to intercultural and personal development, academic attainment measures, continued language use, and career choices. Most importantly, the study illustrated that this impact can be sustained over a period as long as 50 years. While Dwyer demonstrated that “‘more is better’ holds true when it comes to the duration of a study abroad experience” (p. 151), short term exposure also holds value for students.

Retention of material learned through experiential travel abroad programs also tends to be significant. Students participating in programs affiliated with the American Institute for Foreign Study (AIFS) reported on a survey that they “retained significant increased knowledge of another culture; awareness of political, social, and economic events in the world; and increased interest in transnational issues” (2013, p. 11).

Acquiring new skills can also be a desirable outcome, and time spent abroad should be stressed to future employers. According to AIFS, “Employers are taking a more proactive interest in the outcomes of education abroad experiences as they struggle to find a globally competent workforce that meets their needs” (p. 3). Harder et al. (2015) interviewed job recruiters to measure the impact of study abroad on employability. Consistent among all respondents was the importance of the interpersonal leadership and communication skills for prospective employees. These identified skills—including the willingness to learn, self-confidence, motivation, integrity and industriousness—were enhanced through study abroad experiences. Respondents also placed considerable emphasis on the need for written and verbal communication skills.

To enhance study abroad experiences, the National Society for Experiential Education (NSEE) highlights Eight Principles of Good Practice for All Experiential Learning Activities (NSEE, 1998). Chief among these involves the importance of preparedness and planning. According to the NSEE website, it is important for students to enter a study abroad experience with enough foundation to support a successful experience. From the earliest stages of the planning phase, all participants should make clear the identified goals, objectives and activities for the program. These goals should be reiterated on a frequent basis throughout the program; however, participants should also remain flexible

enough to allow the experience to unfold.

### **Research Objectives for Students' Coverage of the 2014 Hong Kong IHOF Ceremony**

The focus of this endeavor—coverage of the 2014 IHOF Induction/ International IT Fest in Hong Kong—involved interviews with inductees and participants, and archiving these conversations. Specific objectives were to:

- Interview 25 to 40 participants in Hong Kong between April 7-9, 2014. Participants were asked to talk on camera about their roles in Internet leadership and were encouraged to share anecdotes focusing on their work in the evolution of the Internet. They were also asked about concerns and hopes for networked communications, as well as possible action steps toward a positive future.
- Edit videos into narratives ranging up to 18 minutes in length.
- Upload videos and transcripts to the [Imagining the Internet](#) website for reference and research purposes.

### **Selection of Student Researchers for IHOF Coverage in Hong Kong**

The 2014 Hong Kong IHOF team consisted of five Elon Communications students (including the second author of this article, Mia Watkins), a staff member experienced in video production (assistant director for video production, Aaron Moger), and a Communications faculty member with a specialty in journalism (the first author of this article, Anthony Hatcher). Moger oversaw the technical aspects of recording and logging interviews, while Hatcher handled logistics, advising, grading, scheduling, and prepping student interviewers.

Student team members were nominated to cover IHOF by departmental faculty members based on the students' demonstrated talent, both in class and in Elon student media (which includes a weekly newspaper, *The Pendulum*, and a weekly live student newscast called *Elon Local News*, both with active website and mobile updates). Because Elon Communications students are cross trained in print, online, video, and graphics, outstanding print and broadcast students are equally welcome on *Imagining the Internet* documentation trips. Center Director Janna Anderson made the final selection based on faculty recommendations and students' skill sets in the areas of interviewing, shooting, editing, logging, and posting videos. In addition to Watkins, student team members for Hong Kong were Jason Puckett, Addie Haney, Brian Mezerski, and Skyler Cowans. Faculty leaders are selected by Anderson on a rotating basis.

### **Preparation and Planning through Student Mentoring**

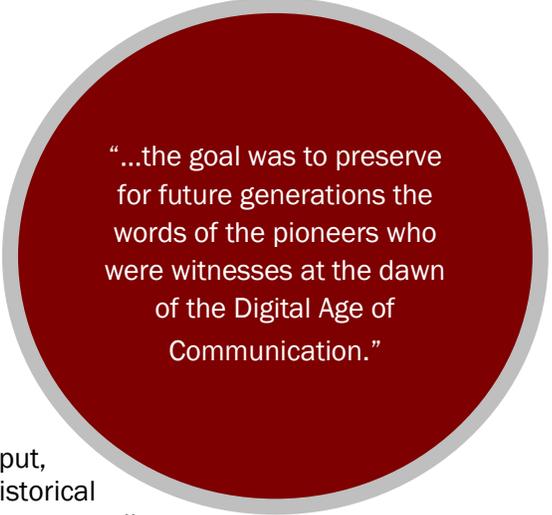
Consistent with NSEE principles for experiential learning activities, preparedness and planning were key to the success of the April research expedition. The five students enrolled in a 2-credit COM 491 Global Communications Research Independent Study to work independently with a faculty mentor and to participate in weekly preparation classes during the spring semester. These planning meetings equipped students with the necessary tools, both physical and intellectual, to use the precious few days available to interview participants and document this important event.

During each session, students met for an hour with Moger, Hatcher, and Anderson. The one-hour sessions consisted of hands-on instruction by Moger with the technology and equipment. Anderson filled in history and context for the event, and Hatcher provided coaching on effective interview techniques. Students learned about Internet issues, background on the people they would be interviewing, how to operate the gear, and proper research workflow. They also did preparatory readings and participated in creating the question set used in the interview process. Each of the five students previously had a working knowledge of the cameras, lights, light stands, microphones, and editing software. Still, there was a learning curve for shooting in the conditions in Hong Kong. For example, Moger instructed students in the proper use of the directional microphones in order to

keep extraneous noise to a minimum. This would be vital, because the interviews would take place in a cramped area of a busy business and tourist hotel. Lighting would be crucial, and students were trained to shoot away from windows, in both dark and bright rooms, and to get the proper color balance for dark and light skinned interview subjects. A backdrop with the Imagining the Internet Center logo was used for interviews, and proper positioning of this banner was emphasized. Students were shown how to properly frame a shot in a manner that would show the banner and reveal enough of the subject, while keeping unnecessary clutter from the background. Finally, students practiced editing quickly on the software, as well as uploading to the website.

Anderson supplied appropriate readings and lectured the students on the importance of the interviews they were to record, the history and chronology of the development of the internet, and the relevance of the online archive. These readings and talks gave students the context and terminology necessary to communicate effectively with the interview subjects.

Finally, Hatcher coached students in the oral history method of coaxing stories and specific information from participants. Oral history interviews, which are conversational, differ from journalistic interviews, which are often confrontational. Journalism seeks answers to questions, but the process can be friendly or antagonistic depending upon the interview subject and the circumstances. Oral history, or personal narrative, is a collection of memories and personal stories of historical significance through firsthand interviews with participants who were present at a specific event or who lived through a particular time frame. Oral history takes place when an interviewer asks specific questions of a subject and records the answers verbatim, via audio, video, and/written transcript. Oral historian Donald Ritchie (2003) writes, “Simply put, oral history collects memories and personal commentaries of historical significance through recorded interviews. An oral history interview generally consists of a well-prepared interviewer questioning an interviewee and recording their exchange in audio or video format” (p. 19).



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As Barbara W. Sommer and Mary Kay Quinlan defined the practice, “An oral history is created in a recorded interview setting, using a structured and well-researched interview outline, with a witness to or a participant in a historical event. Its aim is to collect and preserve the person’s first-hand information and make it available to researchers,” (2002, p. 1). This second definition applied directly to the work at the 2014 IHOF as the goal was to preserve for future generations the words of the pioneers who were witnesses at the dawn of the Digital Age of Communication.

Students were told not to leave loose ends and to ask follow-up questions. Nonaggressive yet assertive techniques were employed to keep conversations informative and focused. Examples of written and video interviews were used to illustrate how to complete concise interviews that do not leave viewers wondering about details.

### Student Perspective: Mia Watkins Comments on Her Initial Apprehension

Every meeting covered a specific topic for the trip: flight plans; location; interviewing tips; and honorees awarded into the 2014 Internet Hall of Fame. Every meeting, my mind was divided among taking notes, processing my understanding of the Internet Hall of Fame, and envisioning the team cramped on the limited sidewalk spaces of Hong Kong. Every meeting, my heart raced. I was a cinema major in the midst of talented broadcast journalism majors, and although I had a journalism

background from work in high school, my nerves consumed me. So did the excitement. I knew this project would take me on a different road in my academic journey - a detour experience that gave me skills I wouldn't have learned anywhere else. I relaxed near the end of our meetings, accepting the adrenaline rush, as it was just a sliver of energy I would feel when we went to Hong Kong. Communication was the key to success, order, and sanity.

#### **The Research Experience: Data Collection in Hong Kong**

According to Center Director Anderson, the academic mission of this experience was to “learn about key issues tied to the future of networked communications” and “carry out a successful information-gathering mission to the Internet Hall of Fame Induction.” Students were tasked with recording the points of view of the Internet engineering and policy community through the process of recording, editing, packaging, and posting documented interviews on the Imagining the Internet website and YouTube site in order to both help inform policy decisions and to serve as a historic documentation of the event.

By the time the team reached Hong Kong, students were practiced in the art of interviewing, had studied the backgrounds of those who would receive awards at IHOF, and were well versed in operation of the video equipment and editing software we carried with us. Students had a carefully prepared slate of incisive questions to get the backstory of landmark inventions and their inventors, and the approach worked well. Participant responses were somewhat controlled by a uniform five-question interview format devised for award recipients, used in past Imagining the Internet projects (see Appendix). Although much of the questioning format was prescriptive, students demonstrated a willingness and ability to adapt on the fly. Whenever an interview subject trailed off into an anecdote, students brought the conversation back to the themes laid out in the research objectives, while incorporating those stories that enriched the narrative into the final video edit.

Each day of the conference, which offered informational sessions and conducted business prior to the Hall of Fame presentation, Hatcher and the students approached inductees and carefully informed them of the purpose of the on-camera interviews. A time for the interview was agreed upon and scheduled in many cases, while some of the subjects were interviewed on the spot. A flier prepared and distributed at the hotel informed participants of the procedure.

The interviews were then conducted with subjects on camera, with students off camera asking the scripted questions in a direct, but nonthreatening oral history style. Occasionally, follow-up questions beyond the five scripted questions were asked, but only to expand upon or clarify an existing point relevant to the research. Among the luminaries whose detailed histories were recorded were:

- Karlheinz Brandenburg, the driving force behind MPEG-1 Audio Layer 3 (MP3) and MPEG audio standards, whose work has been crucial to the early years of Internet audio coding.
- John Cioffi, known as the "father of DSL." It was his work that made the digital subscriber line possible, accounting for about 98% of the world's more than 500 million DSL connections.
- Susan Estrada, founder of CERFnet, one of the original regional IP networks, in 1988. She also assisted in establishing the first commercial Internet traffic and authored the best-seller *Connecting to the Internet* (1993).

Students took advantage of the rare down time in between interviews to begin rendering footage for later editing. In the evenings, students collaborated with Hatcher, Moger, and each other to edit the longer pieces down to the preset 18-minute time limit, retaining the essence of what was said. All of the interviews were considered to be a “success,” in that each honoree gave an accounting of his or her story of discovery, as well as offering a prediction about the future of the Internet and communications.

On the long flight home, students continued to edit on the plane (in between naps), and during a six-hour layover in the Vancouver, BC airport, they edited some more. By the time the team returned to Elon's campus, where their classes would resume after an all-too-brief weekend, a minimal amount of editing remained. In the end, 31 interviews were logged over three days and eventually posted upon return for free use by both scholars and the public on the Center's website.

### **Student Perspective: Mia Watkins comments on the experience of covering the 2014 IHOF**

The silence that filled our workroom overnight vanished under the sounds of clicking tripods, camera shutters, and microphone checks. For efficiency, team members used a shared Google spreadsheet of the Internet Hall of Fame inductees we would be interviewing. Some were scheduled, most were not. Half of our team stayed to conduct interviews while others raced to wrangle the inductees we needed. We all participated in both sides of the plan. My first day in the interview room, I felt my nerves return as I sat opposite of the inductees, my sweaty palms holding the questions. My nerves stayed with me throughout the week, switching from anxiety to elation. It was one of the few things keeping me alert, as I had to switch roles in our project while fighting off jetlag at the same time. When we weren't interviewing, we consumed ourselves with editing our videos and updated our university on our travels. There were times our team took turns in resting from the field and computer work. In a short amount of time, this became normal. Our work lasted a week, but in the moment it felt eternal. I couldn't have been more honored to work beside an amazing group of peers, a synergy rarely experienced.

### **Direct Benefits of this Short-Term Abroad Experience**

Even though the time spent away from campus for IHOF amounted to less than a week, there were three major payoffs for students. One, students were able to practice the craft of interviewing with internet legends and professionals. The Elon team was the sole provider of 31 historical interviews with major technology figures from around the globe, so they had to get it right the first time. This is as "real world" as it gets.

The second benefit is related to the first. Student learned to do professional work on a short deadline. Turnaround time between the interview and posting a final product online was very short, in editing conditions that were cramped, semi-public, and far from ideal. Students went with the flow, at times improvising and setting up a video shoot when a new interview subject became available on short notice. One of the students even rescued the live Web streaming of the event by repairing IHOF's equipment just as the induction ceremony got underway.

The third benefit was cultural. No member of the Elon research team spoke Cantonese, and there were occasions when those with whom the team interacted spoke no English. This was not an issue at IHOF, but created interesting situations in restaurants, on public transportation, and in other public settings. Seeing and experiencing Hong Kong, including the Big Buddha and mountaintop monastery, enlightened the team to conflicts with mainland China and revealed a world previously unknown to them outside of news media accounts and popular entertainment representations. The students were able to see beyond stereotypes during their stay in Hong Kong, interviewing people from all over the world.

### **Beyond the IHOF: Post-Travel Research with Mia Watkins**

Upon the group's return, Mia Watkins conducted further research and wrote a paper about themes that emerged from the interviews. This involved Mia enrolling in another independent study with mentor Dr. Anthony Hatcher. The outcome of this 2-hour undergraduate research experience was a paper titled, "The ongoing concerns in internet evolution: Internet leaders describe problems and make predictions." Watkins presented her findings in 2015 at two undergraduate research conferences, the National Council on Undergraduate Research (NCUR) in Spokane, WA, and Elon's

annual Spring Undergraduate Research Forum (SURF). As a solo student researcher, Watkins was also the principal coder and transcriptionist of the interviews. Hatcher proofed the transcripts and mentored Watkins in shaping a focused paper based on the IHOF event.

The following sections contain a dialogue between Mia Watkins and her research mentor Anthony Hatcher. Watkins discusses her anxiety and her determination to complete a successful research project. Hatcher then offers a response from the professor's perspective of working with Mia on the coding of the transcripts of the interviews to find patterns in the responses.

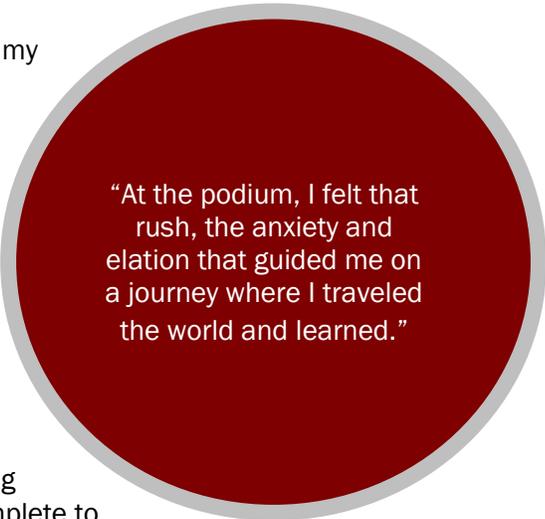
**Mia Watkins:** I had always wanted to engage in undergraduate research—as it was one of our Elon Core Experiences—but had no idea where to find it as a cinema student. My peer team members were unable to participate due to studying abroad, other projects, and graduation, but I was assured that I wouldn't be alone. The meetings that once consisted of seven people in the beginning of the Hong Kong trip were now down to two: me and Dr. Anthony Hatcher.

The first task in our research was transcribing all 31 interviews conducted at the Internet Hall of Fame. The videos ranged from two minutes to seventeen minutes. This task I had to conduct by myself. I am an ambitious person by nature and will take on a challenge that comes to me, but I wished I had more help from my professor when I worked on them. My time was extremely limited due to my demanding fall semester schedule. I often found myself transcribing late at night or getting up early in the morning before my day started. I had combined the world I was consumed with in Hong Kong and the world that consumed me on campus, and some days I had to choose one over the other. However, this was the toughest mountain to climb; once the transcripts were finished, the rest of the project began to smooth itself out.

Spring semester brought out organizing our research and submitting it to conferences. I am thankful to Dr. Hatcher, who helped me navigate the undergraduate research world, directing me into the paths I needed to go and the tasks I needed to complete to bring the information to light. We were living remnants of our Hong Kong team, which gave me strength in times I felt my nerves return at NCUR and SURF. I had ten minutes to present at each. I only had ten minutes to condense a week in Hong Kong, three months of transcribing—a year's worth of work, ten minutes to share the memories and work my team had made. At the podium, I felt that rush, the anxiety and elation that guided me on a journey where I traveled the world and learned.

**Anthony Hatcher:** Mia is a visual artist and a cinema major with a journalistic ability to ask questions and record responses. She expressed both enthusiasm and frustration during the arduous task of transcribing 31 video interviews without the aid of machines or software. The time factor alone was daunting, and many of the interviewees mumbled, spoke accented English, or spoke rapidly, adding to the stress of creating an accurate record. The video responses to the five questions were being posted online, but having a transcript would aid future researchers and historians who wanted to parse the responses and glean knowledge from Internet pioneers.

I sympathized with Mia, and my assistance in the transcription phase came after her initial attempts. She highlighted the interviewees she had the most trouble understanding, and those were the ones I listened to most carefully. I found few errors in Mia's work, and the lines and words that needed correction typically fell into two categories: either a word or phrase was difficult to understand for



“At the podium, I felt that rush, the anxiety and elation that guided me on a journey where I traveled the world and learned.”

technical or dialect reasons, or a word was unknown or unfamiliar to Mia and she typed a word that resembled its pronunciation.

As she indicated above, Mia's ambition led her to pursue a research project, and this one was a trial by fire for her. Experiential learning, an eye and ear for detail, and background reading for context were all necessary for successful accomplishment of our goals. Mia rose to the occasion, and learned something new about research – and about herself – at every step, to Hong Kong and back. One pitfall of such “adrenaline rush” projects is that once students return, they reenter their normal school lives, often postponing or neglecting the required follow-up work. This has happened to other Imagining the Internet teams, and Mia was determined it would not happen to her. So was I. Part of my job was to make certain Mia's enthusiasm and persistence did not wane to the point of inactivity.

Mia's high level of daily productivity and the camaraderie we shared contributed to her success. The frequent meetings between the two of us upon our return were instrumental in finishing the transcriptions that ultimately led to her research findings. We identified and discussed patterns in the responses, allowing her to report on these Internet leaders' optimism and pessimism about the future of the Internet.

### **Conclusion**

As Harder et al. (2015) noted in research discussed earlier, job recruiters and potential future employers should be made aware of study abroad experiences, particularly those that involved service or utilization of a particular skill set. The short time Elon University Communications students spent in Hong Kong was not only an important service to the study of internet history and technology, but offered students an opportunity to function at a high level to create usable video interviews for archiving.

Of course, given the international nature of this project, there were also significant challenges that arose, which ranged from the physical to the intellectual. From our eastern United States starting point, flight times were long, and we had a short stay at our destination. Although all team members were legally adults, there was still a measure of responsibility—and liability—on the part of mentors to keep students safe and healthy. Additionally, of the five days allotted for the journey, interview participants were available for only two of those days. Using email and paper fliers for promotion, coupled with physically tracking down interview subjects in hallways and meeting rooms, the team was able to log 31 quality interviews. The interviews themselves, apart from the technical aspects, went smoothly as the students relied on their coaching and background knowledge to have meaningful conversations.

The process of heavy preparation prior to leaving for any such task-oriented trip away from campus cannot be overestimated. This preparation consisted of: practice with equipment and software; coaching in the oral history interview method; reading and studying relevant literature for historical context; and determining workflow order in Hong Kong while still on the Elon campus. Cultural sensitivity was also stressed in mentoring discussions, as students were made aware of customs and traditions not only in our host country, but in the native countries of the various Hall of Fame inductees. We were all gregarious Americans, and the students were under 22 years old. Our interviewees would be middle aged and older, and perhaps more reserved. Through roleplaying and verbal practice, students learned to be simultaneously courteous and probing. Additionally, a specific dress code of business attire was mandated in order to convey a seriousness of purpose.

Mentoring in this case meant a great deal of faculty/student interaction. Mandatory attendance at each preparatory session led to successful completion of the research goals. The bond and familiarity between the mentors and the students grew with each campus session and solidified

once away from campus. At the IHOF, meals were taken together, and breakfast was used as a planning session for the day, just as dinner was used for debriefing. Communication was vital, with cell phone coverage and frequent check-ins a must. In short, discipline was required for: a) keeping work at both a high level of quality and on time; and b) keeping the team safe, healthy, and in contact. Such interactions breed both familiarity and mutual respect, extending beyond classroom walls. Students who are prepared by mentors prior to departure to understand the high expectations placed upon them, and who are positively reinforced for their behavior and accomplishments while abroad, will often meet or exceed those expectations and successfully complete designated goals.

This was a fruitful field research collaboration, one that can serve as an example of communication and coordination for other student/professor teams. The cultural benefits of living in Hong Kong for a week and meeting internet luminaries who will appear in tomorrow's history books will remain with these students forever. Over the 48 hours of shooting and editing, students gained a great deal of confidence in their work. Much of this confidence, however, came from the weeks of meetings and study on campus prior to arrival. Had the students not been prepared intellectually and instructionally with equipment, the operation would have failed.

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## **Appendix**

Each respondent was asked the same five questions in the same order:

- 1) Your role in Internet leadership: What role do you play or did you play that led you here? Describe your influence on the global Internet.
- 2) Top past moments: Briefly describe one of the breakthrough moments or movements of the Internet in which you have been a key participant – tell a quick anecdote or share some key details of your involvement in Internet evolution.
- 3) Weather analogy TODAY: Briefly describe the state of the Internet today by starting out with one of the following weather terms – Is it sunny, partly cloudy or stormy – and – briefly – tell WHY?
- 4) What's next? – your fears and hopes: Internet evolution and change is taking place rapidly – it brings challenges and opportunities. Fear first – What is your greatest concern for the future – what is the most serious threat to the Internet as an open global communications resource? Next, tell about hope – What is your greatest HOPE for the future of the Internet?
- 5) Action – WHAT ACTION can be taken now or soon to ensure the best possible future? Explain.