

Dateline: RIT – The Podcast (April 24, 2008) (Season 2, Episode 12)

ANNCR: Welcome to Dateline: RIT with Mike Saffran.

HOST: Dateline: RIT (April 24, 2008)

Research by RIT associate professor of industrial and systems engineering Matthew Marshall has shown that sign-language interpreting is one of the highest-risk professions for ergonomic injury due to greater physical demands than some jobs typically thought of as high risk, such as assembly-line work. Dr. Marshall, what did you discover in your study?

ACTUALITY [MATTHEW MARSHALL]: We set out to analyze the biomechanics of interpreting. Here at RIT and NTID, we're in a great position to do that, and one of the reasons why we wanted to do it was to assess what the biomechanical demands are of interpreting to benchmark that against other known high-risk occupations—occupations such as manual-assembly operations, things that involve a lot of hand-intense work. There's been a lot of research that's looked at the biomechanics of those types of occupations—mainly because of the numbers being so large as far as the number of employees. Not so much attention has been paid to interpreting specifically. Certainly, there's been some research in the area, but not in the era of increased technology, with better instrumentation and that kind of thing, that we have in our labs. So we were able to look at interpreting using some equipment that has allowed us to measure velocity and acceleration of the wrist, and we were able to benchmark interpreting against these high-risk occupations and found that, in fact, interpreting had velocity and acceleration of the wrist that exceeded what would be considered a high-risk level. So that was an important finding alone. Most of us here at RIT and NTID appreciate what interpreters do, and just watching an interpreter you can appreciate the physical demand of the activity, but this proved it in a more quantitative, objective way.

HOST: When you describe wrist acceleration and velocity as root causes of ergonomic stress, is that related to repetitive-motion-type injuries that we hear so much about in other occupations?

ACTUALITY [MARSHALL]: Yeah, we're trying to avoid the onset of what are called repetitive-motion injuries. There's a lot of names for it—cumulative trauma disorders, work-related musculoskeletal disorders—all those are names that are used for these types of issues, and obviously we're trying to avoid that in any way we can, and in interpreting, specifically, because not only are we concerned about the interpreter, him or herself, but also the impact that a shortage of interpreters would have on the full participation of people who are deaf or hard of hearing in society. NTID and the interpreting department here have done a pretty good job of reducing the number of injuries—the incident rates are quite a bit lower, but we want to make sure that we keep them that way.

HOST: I understand there also may be a link between cognitive stress associated with

sign-language interpreting and ergonomic injuries.

ACTUALITY [MARSHALL]: Yes, that was the second aspect of the study, which was to evaluate what happens when somebody is exposed to what we call psychosocial stress—which means what parts of their job cause them anxiety and stress on a cognitive level, and how does that factor into the physical demands. And that’s a general problem that’s been studied in industry, and specifically with the back and the research has shown that when people are exposed to these stressors—whatever the source of the stress is—there tends to be an increase, in the biomechanics in the back, of the spinal forces. What we set out to do was to study this with regards to the upper extremity using interpreters as an example, and so we, in this particular study, had interpreters in two groups—one that was stressed and one that was unstressed—and found that the subjects that experienced stress also had a higher level of velocity and acceleration of the non-dominant hand, all other things being equal. In other words, they were interpreting the same material, but we just induced a higher level of stress and the biomechanics were significantly different—which was an important finding not just for interpreting but also as far as it relates to upper-extremity disorders in industry.

HOST: And lastly, what can be done to reduce the incidence of injury, and what’s next for your study?

ACTUALITY [MARSHALL]: Well, that’s a great question. One of the suggestions is that, well, maybe some of the physical demands could be controlled by considering the psychosocial factors of work, and that’s something that I know that the Department of Interpreting Services is very conscious of. Just as a simple example, having an interpreter who is maybe accustomed to interpreting a liberal arts course who is then maybe asked to fill in a math course in which they’re unfamiliar with the material, the context and all that. That would be a significant source of psychosocial stress. So one of the suggestions is that, well, if you can avoid those sorts of situations then it’s likely that you’re going to also help, to some degree, with the physical demands. Your second part of your question regarding how we’re going to extend this work, one of the things that we would like to do is to take it out of the lab and to analyze interpreters in the field to see as their daily demands change, how does the physical manifestation of the biomechanics change in response to that, and we want to look at that in the field as well just to verify the results that we found in the lab.

HOST: That’s RIT engineering professor Matthew Marshall describing research into ergonomic injuries associated with sign-language interpreting.

On the RIT campus this week . . . Chief Communications Officer Bob Finnerty introduces a familiar face as this year’s RIT Commencement speaker; and he counts down the days until this spring’s Imagine RIT festival . . . and News & Events managing editor Vienna Carvalho has highlights from the latest issue.

SEGMENT [BOB FINNERTY]: This is Bob Finnerty. Stanley McKenzie, RIT provost and chief academic officer, is the 2008 Commencement speaker. With 41 years of dedicated

service to RIT, Dr. McKenzie has played a major role in past commencements, often behind the scenes. McKenzie will speak at 10 a.m. Friday, May 23rd, at the Academic Convocation in the Gordon Field House and Activities Center. McKenzie will be stepping down as provost in June. He will be back in the classroom in the fall to teach literature, including Shakespeare. College commencement ceremonies May 23rd and May 24th will recognize graduates individually. . . . After more than nine months of planning, the university's first Innovation and Creativity festival is nearly here. On Saturday, May 3rd, more than 400 exhibits from students, faculty and staff will be on display as the campus prepares to show off its best work. There will also be the traditional fun festival fare such as food, carnival rides, music and inflatable games for the kids. The festival will be held from 10 a.m. to 4 p.m. on May 3rd, rain or shine. RIT hopes to attract 30,000 visitors to campus for the free festival. Parking will be available at RIT, as well as MCC, where shuttles will be available. For more information, visit rit.edu/imagine. . . . This is Bob Finnerty on the RIT campus.

SEGMENT [VIENNA CARVALHO]: This is News & Events Managing Editor Vienna Carvalho. In the current issue of News & Events . . . RIT's popular "painting with light" project, the Big Shot, will focus on Rochester's own Erie Canal. News & Events provides a preview of the photo spectacular and offers an invitation for faculty, staff and students to participate on May 8th. The Sam Patch, a replica of a 19th century packet boat, will be in the photo and models dressed in period costume will be posed along the deck. . . . Also in the current issue of News & Events, our student spotlight shines on College of Liberal Arts honors student Sam Brougher, whose philosophy on learning includes meeting as many people as possible and serving his community as an active volunteer. . . . And, read our Viewpoints essay written by Mike Morley, chairperson of RIT's Board of Trustees, who shares his thoughts on Diversity Day, which will be held on campus April 28th. . . . Read more about these stories and other RIT news in the April 17th issue of News & Events. This is Vienna Carvalho on the RIT campus.

HOST: This has been Dateline: RIT (April 24, 2008). I'm Mike Saffran on the RIT campus.

ANNCR: For more on these stories and other RIT news, visit www.rit.edu/news.
Dateline: RIT is produced by RIT University News Services.

NOTE: Dateline: RIT (April 24, 2008) audio podcast available at:
http://www.thetigerbeat.com/rss/podcasts/Dateline_04-24-08.m4a and
<http://www.rit.edu/news> (see "Latest Podcasts")

Archive of previous podcasts and podcast transcripts available at:
<http://www.rit.edu/news/podcasts>

© Rochester Institute of Technology. All Rights Reserved.