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## The Department of Preventive Medicine at the Keck School of Medicine of USC: Soto Studio Uses Wirecast to Produce VOD Lectures for Master of Public Health Online Program and Flipped Classrooms

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From its small 14x20 foot greenscreen studio—on the University of Southern California’s (USC) Health Sciences campus in Los Angeles—Soto Studio uses Wirecast live production and streaming software to produce an impressive array of high-quality video lectures and webcasts for the Department of Preventive Medicine at the Keck School of Medicine of USC.

### The Initiative:

Established five years ago, Soto Studio was launched by the Southern California Clinical and Translation Science Institute (SC CTSI). Funded through the Clinical and Translational Science Award from the National Center for Advancing Translational Sciences (NCATS) under the National Institutes of Health (NIH), Soto Studio is used by SC CTSI and various departments to produce video lectures that enable a flipped classroom teaching style.

Now under the operation of Preventive Medicine, Keck School of Medicine students, staff, and faculty can view video of lectures on demand (VOD) in their free time prior to their class or seminar. Class time can now be spent having lively discussions, problem solving and other group activities that reinforce understanding of the material.

Soto Studio produces on average 20 finished hours of HD video lectures and webcasts weekly to support various distance learning, academic, research and public outreach initiatives including:

- Preventive Medicine campus-based curricula: USC’s Master of Public Health (MPH) online degree program, Global Health, Environmental Science, Public Health, Bio-Statistics, Epidemiology, Environmental Health, and Health Behavior
- SC CTSI educational offerings or services: eJournal Club and Mock Grant Reviews using online video conferencing, clinical and translational research (CTR) curriculum, and training of presentation skills for Institutional Career Development Scholars
- Online curriculum for the USC Mrs. T.H. Chan Division of Occupational Science and Occupational Therapy

**“Our goal is to produce videos of our college lectures that offer the same high-quality production standards that viewers have come to expect from a TV newscast. Wirecast makes it easy for us to go beyond just showing static images or PowerPoint slides on-screen accompanied by a voice-over. We can now produce videos that feature the professors interacting with their slides and other visuals, interviewing their guests, and other dynamic presentation formats.”**

– Gary San Angel, Distance Education Specialist  
/ Media Technology, Department of Preventive  
Medicine at the Keck School of Medicine of USC,  
Los Angeles, CA

#### The Background:

To make the lecture videos more engaging, effective learning tools, Soto Studio uses Wirecast’s many inherent video production capabilities to:

- ✓ Perform single or multi-camera switching
- ✓ Key still or moving video images into the greenscreen background behind on-camera presenters
- ✓ Roll in program opens, closes and music tracks
- ✓ Create real-time transitional effects
- ✓ Display titles, lower third supers and full-screen text
- ✓ Key in over the shoulder or full-screen graphics into the greenscreen
- ✓ Roll-in pre-produced video clips, such as short films and animations
- ✓ Incorporate screens from desktop software and websites

Video lectures for the MPH online program are delivered to their Learning Management System and integrated into each course, while lectures intended for on-campus students are uploaded to a local (Sonic Foundry) Media Site server as well as a Vimeo cloud-

based server that enables password protected access on demand.

Video programs for SC CTSI may be viewed on demand via Ustream, YouTube and Vimeo. Occasionally, lectures and presentations for SC CTSI are delivered as live webcasts. Longer-format content is often chunked into smaller segments in post production for easier distribution and viewing.

#### The Challenge:

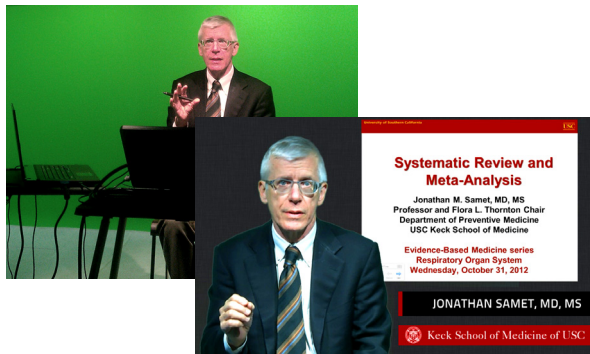
A key challenge faced by Soto Studio is that the videos feature professors who typically teach full-time while working on their own scientific research projects. Due to limited schedule availability, professors are unable to wait for technical set-ups, production delays or trouble-shooting.

It’s particularly difficult to expect these busy professors to go back to square one—and deliver their on-camera presentation a second time. Technical problems also dampen their enthusiasm and confidence in the production technology if the equipment is prone to failure. In addition, the professors are extremely deadline driven and want the final recordings completed sometimes by the end of the business day.

Another challenge is that the professors are not professional on-camera talent. While they’re comfortable speaking in front of a class, the reality is that many would feel intimidated in a large, conventional TV studio and uneasy about delivering their presentations directly to a camera, especially with the video crew watching.



Carolyn Barnes and Shubha Kumar, MPH Online Studio



Jon Samet recording in the studio

However, Soto Studio's small, quiet, intimate space puts the professors immediately at ease so they can deliver their talks without looking nervous or uncomfortable—something that high-def cameras pick up and magnify.

#### The Solution:

With its simplicity and reliability, Wirecast enables an easy-going production environment. When paired with Desktop Presenter, professors can refer to any on-screen visuals they may need—their slide deck, professional software, videos, graphics and websites—and these visuals are cut directly into the video program. Presenters may put their personal laptops on an adjustable table in front of them, and see how the program looks on the on-set confidence monitor.

Besides the on-camera talent, no one else is present in the studio during shooting. Presenters typically stand in front of the green screen so that—when videos or graphics are keyed into the background—they appear to be in any place or setting that suits the story they want to tell. Or presenters can sit in front of the green screen and using a mouse or SMART Podium, annotate slides and highlight key points in their presentations. Camera moves, such as zooms and pans, help make the program much more dynamic.

Rather than typical bright studio lighting, there's an overhead lighting grid with adjustable Philips Selecon LED spotlights that cast soft, even lighting onto the set without blinding anyone or generating heat. A single Sennheiser MKH 8060 Short Shotgun Microphone is mounted on a boom stand positioned 12-inches overhead so they unobtrusively pick up the sound of a single presenter or two-person interview. It also helps to

ease jitters that each camera is hidden behind a teleprompter and, the teleprompter monitor is flanked by two confidence monitors, each on rolling stands to provide flexibility and mobility for viewing.

Once shooting begins, the crew sits in a small, nearby video control room where they can see production sources on the monitors—including the studio cameras and Desktop Presenter screens—and switch the show from the Wirecast interface. At the end of the recording session, Soto Studio has a completed recording ready to hand off to the professor to use for their class the next day.

**“Wirecast is the ideal solution for our unique production challenges because it’s extremely easy to operate, compact and reliable. The greenscreen keying happens instantaneously, and it’s very fast and easy to download imagery from the web or grab screens from third-party software and websites for use in our video programs. While Wirecast is so affordable that we can keep a second system on-hand for back-up, we’ve rarely if ever needed to use it.”**

— Gary San Angel, Distance Education Specialist  
/ Media Technology, Department of Preventive  
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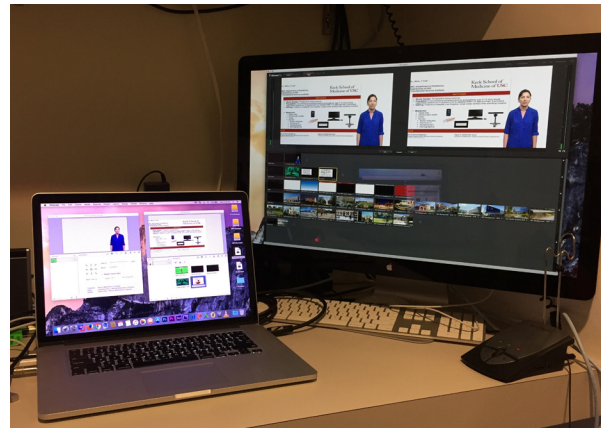
#### The Set-up:

The Department of Preventive Medicine relies on a very streamlined, cost-effective workflow that's comprised of the following gear:

- Wirecast live video production and streaming software from Telestream
- Telestream's Desktop Presenter software for grabbing imagery from desktop computers and websites

- 15-inch Apple MacBook Pro Retina display laptops with 16GB of RAM, a 2.5 Intel Core i7 processor, and 1TB flash storage (including one main and one back-up)
- One Panasonic AG-HPX370 Series P2 HD ENG-style camcorder
- Two additional Panasonic GH4 DSLR (4K-capable) cameras (to be acquired this year for 3-camera shoots)
- One Blackmagic DeckLink Pro in a Sonnet Technologies' Echo Express Pro Thunderbolt Chassis that connects sources and feeds up to four signals to a MacBook Pro laptop via a Thunderbolt 2 I/O connection
- One Sennheiser MKH 8060 Short Shotgun Microphone with MZF 8000 filter module
- One Sennheiser ew 112 G3 Wireless Bodypack Microphone System with Sanken COS-11D Lavalier mic
- Atomos Samurai Blade recorders used to record the HDMI output of the laptops and backup from the Panasonic P2 camera
- Two JVC DT-R24L4D Production Confidence monitors, each attached to a Displays2Go MB 1030SLV Rolling TV Stand (and configured to receive an auxiliary output from Wirecast)
- Philips Selecon CYC/Fresnel/PL1 LED spotlights suspended with Matthews Scissor Clamps for overhead suspended ceilings
- Three Lowel Blender LED Light Kits for extra fill and floor mobility
- A 14x12 foot custom made green screen cyclorama with Digital Green Paint from Composite Components Company (can be covered by drapes when not needed by productions)
- SMART Podium 524 Interactive Pen Display with SMART Notebook (that are used for slide annotation and as an interactive white board)
- Tandberg 6000 MXP Profile Video Conference Unit (for H.323 endpoints – local view is sent through Wirecast allowing any background behind presenters)
- Sonic Foundry MediaSite ML Recorder (used for live streaming and archiving of Wirecast and Desktop Presenter feeds)
- Prompter People Proline 24" Widescreen Teleprompter

Live video can stream directly out of Wirecast to websites, like Ustream and YouTube Live, as well as simultaneously record right onto the laptop, or, in Soto Studio's case, onto Atomos Samurai Blade recorders.



The Set-up

#### The Signal Flow:

The video and audio signals feed into a BlackMagic Design DeckLink Pro, which in turn feeds them into the MacBook Pro laptop running Wirecast and Desktop Presenter via a high-performance Thunderbolt 2 interface. Audio captured by the Sennheiser MKH 8060 Short Shotgun Microphone is captured directly by the Panasonic P2 camera, and then via the DeckLink Pro directly into Wirecast.

#### The Results:

**“Wirecast makes it possible for us to produce compelling video lectures, complete with greenscreen keys, digital video effects, lower third supers and other broadcast-quality enhancements. The workflow is fast, simple and straightforward, with real-time streaming and recording. Wirecast is tailor-made for distance learning, flipping the classroom and many other educational applications where budgets and space are at a premium. We are quite fortunate to have found Wirecast, which has proven to be a robust, feature-rich, affordable solution that satisfies our unique production needs.”**

– Gary San Angel, Distance Education Specialist /  
Media Technology, Department of Preventive Medicine at  
the Keck School of Medicine of USC, Los Angeles, CA

**“As a top tier university, we believe that high quality video is key to providing our students—including those in the traditional classroom as well as online learners—a top tier educational experience that engages and enlightens them. As Director of the**

**Online MPH Program, and a member of the faculty that regularly delivers lectures via video, I can attest to the quality of the videos produced by Soto Studio using Wirecast. Because the online videos turn out so professional, our faculty often end up using them in their campus-based teaching as well. Since Soto Studio gives faculty members great creative flexibility and presentation options to produce videos that address their unique teaching needs, more and more of our colleagues across campus are interested in using this powerful video resource to better reach and educate their students.”**

– Shubha Kumar, PhD, MPH, Director of the Online Master of Public Health Program at the Keck School of Medicine of USC and Director of Distance Education for the USC Institute for Global Health

#### **A Final Word:**

To defray its on going operational and maintenance costs, Soto Studio charges the entities that use its facilities and services according to a rate card. As part of its future roadmap, Soto Studio hopes to acquire 4K studio cameras, as well as IP cameras that can be deployed to face to face classroom settings and remotely controlled over an IP network so Wirecast becomes a virtual master control room bringing the Soto Studio recording technology into everyday classrooms.

For more information, please visit:

- Preventive Medicine Soto Studio at USC Health Sciences Campus: <http://sotostudio.usc.edu/>
- Department of Preventive Medicine: <https://pm.usc.edu/about.php>
- The USC Master of Public Health (MPH) online program: <http://mphdegree.usc.edu/>
- Institute for Global Health: <http://globalhealth.usc.edu/>
- Southern California Clinical and Translational Institute: <http://www.sc-ctsi.org/>
- Wirecast by Telestream: <http://www.telestream.net/wirecast/overview.htm>

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