

Computer Equipment Upgrade for Speech, Voice, Hearing, and Sign Language Laboratory

**School of Communication Science and Disorders
College of Communication & Information**

and

Voice Area of the College of Music

Contact: Richard Morris (rmorris@fsu.edu)

Project description

The main purpose of the project is to update the equipment used to teach laboratory portions of several undergraduate classes in the School of Communication Science and Disorders (SCSD). The equipment in the laboratory space, 018 DIF, is approximately 15 years old. The operating system of the computers in the computer lab is no longer supported by Microsoft and the computers are too old to allow updating the operating system. The projector in the space broke and was replaced by an older unit that the College of Communication and Information had. Thus, the computers and projector need to be updated.

The physiologic measuring equipment, the spirometer and electroglottograph (EGG), in the laboratory is also older and does not interface easily with contemporary computer software. The EGG will be used in an undergraduate laboratory activity and a graduate project by students in SCSD. In addition, College of Music students studying voice pedagogy at the undergraduate and graduate level will use the EGG equipment. The students studying voice in the studio of Professor Okerlund will also use the EGG equipment as a component of their singing lessons.

Impact of this project on instruction

The new computers will allow updates in the software used during laboratory sections of four courses in the SCSD. In addition, newer computers will allow videos to be used in the laboratory for the three levels of American Sign Language (ASL). The projection system will also be used to show videos during the laboratory sections of SPA 4302L. These videos assist the students in learning clinical audiology techniques. The proposed updates and enhancements to the technology in 018 Diffenbaugh will bring the teaching of these courses at Florida State University to current practice levels at other universities. The ability to project the sign language videos will allow Dr. Smith to circulate among the students in the small group, laboratory environment and assist them as they are practicing the ASL language skills demonstrated on videos.

The physiologic equipment will enhance the teaching of the Anatomy and Physiology of Speech and Hearing undergraduate course and the Voice Disorders graduate course in SCSD. At the undergraduate level the students will learn how to use the equipment to measure normal

respiratory and voice function. At the graduate level the students will learn to use the equipment to help differentially diagnose respiratory and laryngeal aspects of voice disorders. These measurements are used at advanced Ear, Nose, and Throat Clinics and Hospitals.

As noted above Professor Okerlund will use the EGG equipment to help undergraduate and graduate vocal pedagogy students better understand the physiology of voice use during singing. He will also use the equipment to illustrate physiologic aspects of voice use during his lessons with both undergraduate and graduate singing students.

Courses that will integrate the new computers and equipment:

SPA 1140 Beginning American Sign Language – 30 students Fall; 30 students Spring

SPA 2150 Intermediate American Sign Language – 30 students Fall; 30 students Spring

SPA 2160 Advanced American Sign Language – 30 students Fall; 30 students Spring

SPA 2510 Deaf Culture – 30 students Fall; 30 students Spring

SPA 3801 Applied Research in Communication Science and Disorders – 8 students Fall; 15 students Spring

SPA 4101 Anatomy and Physiology of the Speech and Hearing Mechanism – 90 students Fall

SPA 4011 Acoustics for Speech and Hearing – 90 students Spring

SPA 4112 Clinical Phonetics – 90 students Spring

SPA 4302L Introduction to Clinical Audiology Laboratory – 90 students Spring

MVV 5651 Voice Pedagogy – 15 students Fall

MVV 6661 Voice Pedagogy – 5 students Fall

MVO 5055 Voice Pedagogy – 30 students Summer

Singing Voice Studio – 14 students Fall, 14 students Spring, 14 students Summer

Project plan

Spring 2017 – Review equipment selection and make purchases.

Summer 2017 – Develop protocols and schedules for using computers and equipment.

Fall 2017 – Integrate spirometer, EGG equipment and computers in SPA 4101 laboratory sessions. Integrate computer use into SPA 1140, SPA 2150, SPA 2160, and SPA 2510. Integrate EGG equipment use in the voice studio of Professor Okerlund.

Spring 2018 – Integrate EGG equipment use in SPA 5211. Integrate computer use into SPA 1140, SPA 2150, SPA 2160, SPA 2510, SPA 4112, and SPA 4302L. Integrate EGG equipment use in the voice studio of Professor Okerlund.

Subsequent years – Continue to use and develop use of the computers and other equipment in the School of Communication Science and Disorders laboratory sections of courses and in the voice studio of Professor Okerlund.

Relationship of this project to other university activities

The respirometer and the EGG are portable and can be used during some speech pathology evaluations and treatments at the L. L. Schendel Speech and Hearing Center. These would enhance the experience for some students completing SPA 5055r and SPA 5528Lr. It may be that other vocal performance instructors in the College of Music will be interested in using the EGG in their voice studios.

Plan for ongoing support

The College of Communication and Information has historically provided IT support for the equipment in 018 Diffenbaugh. This support has included software updates and maintenance and equipment maintenance. The School of Communication Science and Disorders has historically supported the activities in 018 Diffenbaugh by replacing disposable items such as spirometers and supplies such as alcohol wipes and Hyde-Out to cleanse equipment.

Description of the project team

Richard J. Morris, PhD, CCC-SLP is a Professor and the Director of the Undergraduate Program in the School of Communication Science and Disorders. Kristen R. Smith, Ph.D. is a Teaching Faculty I and Director of the American Sign Language Program in the School of Communication Science and Disorders. Toby Macrae, Ph.D., CCC-SLP is an Associate Professors and the director of the Graduate Program in the School of Communication Science and Disorders. David Okerlund, M.F.A. is an Associate Professor in the College of Music. Selena Snowden is a Teaching Faculty III and Director of the Audiology Clinic in the School of Communication Science and Disorders.

Budget and budget explanation

<u>Item</u>	<u>Number</u>	<u>Cost/unit</u>	<u>Cost</u>
Epson 1440 1080p 4400 lumen	1	\$1,700.00	\$1,700.00
HDMI cable for projector	1	\$100.00	\$100.00
Mount for projector	1	\$100.00	\$100.00
Dell Optiplex 3240 computer 22" screen, 15 Quad core CPU, 8GB memory, 256 SSD, graphic card	30	\$1,220.00	\$36,600.00
Glottal Enterprise EGG EG2-PCX2	1	\$4,287.00	\$4,287.00
NDD Easy on-PC Spirometry Kit (2700-3k)	1	\$2,820.00	\$2,820.00
			<hr/>
			\$45,607.00

Hey Kristen,

The Dell website still has some issues but I've managed to configure a Dell Optiplex 3240 All in one computer with the following specs:

22" Screen
Keyboard + Mouse
i5 Quad core CPU
8GB of memory
256 SSD (faster than traditional hard drives)
Dedicated graphic card
4-year warranty
Total: \$1220.00

As for the projector, any ESPON projector will do just fine as long as it's 1080p and it has HDMI. I found several ESPON projectors in the range of \$2,000. Therefore, I would budget the projector at \$2,000 including the mount (\$100) and HDMI cable (\$100).

Thanks,

Aldrinique "Al" Ferdinand
Systems Administrator
College of Communication & Information
Florida State University
850.645.0181
al.ferdinand@cci.fsu.edu

Mr. Morris,

Martin does not get this address so I hope that it is Ok if I answer your email. I have copied him on this response if you would like to reach him directly.

The EG2-PCX2 package which comes with all the software and hardware you need to use it right out of the box costs \$4,287 plus shipping. The web page below will show you everything that comes with the system.

<http://www.glottal.com/Electroglottographs.html#acc>

If you need a formal quotation please just let me know and I will be happy to assist you.

Have a great weekend,

Marcia

Marcia Rothenberg, VP

Glottal Enterprises Inc.

1201 East Fayette Street, Suite #15

Syracuse, New York 13210 USA

Phone: (315) 422-1213

Fax: (315) 422-1216

marciar@glottal.com

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Model	Description	Shipping/Stock	Price	Cart
2700-3	<p>PC Software with Handheld Flow Sensor Kit with Flow Sensor</p> <ul style="list-style-type: none"> • Trade-in your old Spirometer with purchase, receive a \$100 Rebate and FREE box of Spirettes! <p>GSA Contract Holder</p> <p>Be the first to review this item.</p>	<p>Factory Direct Shipping Information</p>	<p>Retail: \$2,312.50 \$1,850.00</p>	<p>ADD TO CART Qty <input type="text"/></p> <p>Add To Wish List Scheduled Ship (?)</p>
2700-3K	<p>PC Software with Handheld Flow Sensor Kit with Flow Sensor and Accessories</p> <ul style="list-style-type: none"> • Trade-in your old Spirometer with purchase, receive a \$100 Rebate and FREE box of Spirettes! <p>GSA Contract Holder</p> <p>Be the first to review this item.</p>	<p>Factory Direct Shipping Information</p>	<p>Retail: \$3,525.00 \$2,820.00</p>	<p>ADD TO CART Qty <input type="text"/></p> <p>Add To Wish List Scheduled Ship (?)</p>

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The ndd Easy On 2700-3 and 2700-3K PC Guided Spirometry System and Kit is an ideal tool for measuring lung volume and strength in pediatrics, occupational health environments and primary care. Designed for use with a PC running on Windows XP SP3, Windows Vista, Windows 7, and Windows 8 (32 and 64 bit), the ndd Easy On PC Spirometer is simple to operate and highly accurate. Easy On PC Guided Spirometry System includes software to conveniently guide spirometry as well as to provide a real-time inspiratory and expiratory curve. The ndd TrueFlow requires no contact between sensor and sample and is resistant to the result-altering influences of humidity, barometric pressure and alternate sources of contamination.

The Easy On 2700 series offers a unique test selection that may be taken with or without tidal breathing. Intended for quick, easy use, the ndd Spirometry System requires no calibration, cleaning or maintenance and is simply plugged into the USB port of a PC. The ndd Easy On also offers lung age evaluations, ethnic correction factors and country specific predicted values.

Also See:

- [Medical Spirometers](#)
- [Nebulizers](#)
- [Fingertip Pulse Oximeters](#)