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Scherer, collaborators seeking answers to mysteries of voice

How does airflow through the human larynx become sound? How are the wide ranges of pitch and loudness in our voices created, and when does a voice sound “natural”?

The questions may seem basic, but the answers are still unknown. Finding them is among the goals of a long-term research project led by Ronald Scherer, communication disorders.

Scherer and collaborators from Purdue University and the universities of Toledo and Cincinnati are in the third year of a second, four-year grant from the National Institutes of Health to study phonation using aerodynamic and acoustic models. The \$2.5 million in grant funding is divided among the four participating universities.

Phonation refers to the vibration of the vocal folds in the larynx that modulates the air from the lungs, creating sound. The two vocal folds move back and forth very quickly as air passes, and the changing airflow creates sound, but how that happens remains a mystery, Scherer says.

He and his fellow researchers are trying to solve it with the help of different models. They include computer animation—also involving Comer Duncan and Lewis Fulcher, professors of physics and astronomy at BGSU, and their students—as well as “M5.”

M5 is the fifth in a series of models constructed to measure airflows and pressures in a simulated larynx. This one, Scherer says, is the most sophisticated model of its kind in the world, a Plexiglas larynx enlarged seven and a half times with pairs of “vocal folds” frozen in a snapshot of phonation.

Air is pulled through the model, and pressure is measured at various taps so researchers know the pressure on a fold at each point of its vibration. Measurements are taken with differing angles between the folds—nine different pairs can be inserted to cover the range of phonation from 40 degrees convergent to 40 degrees divergent—and varying distances between them. Those distances are governed by shims inserted on the sides of the “larynx.”

Recorded air pressures are used in computer models of phonation, whose dynamics must be studied to see how the process works normally, Scherer says. And empirical, physical modeling is imperative for measuring those pressures, he notes, saying that the project has compiled the most complete collection of laryngeal pressures found anywhere.

Unlike researchers who have used incorrect equations in the past, “we are using empirical pressures to drive the computer models,” according to the project director. Calling it a benchmark pressure distribution model that others can also use, he adds, “I’d say that’s the most important progress so far.”

Scherer also lauds a finding by research assistant Meena Agarwal about the false vocal folds, which are located above the true folds. In research for her doctoral degree, Agarwal found that the false folds, in a certain position, may help the true folds with phonation, reducing resistance to airflow and helping the true folds’ vibration to produce a louder sound.

“It’s an amazing finding,” although further modeling work remains to be done, says Scherer.

To his knowledge, Agarwal’s research is the only systematic study of the effects of the false vocal folds. Her analysis of the false folds in singers has indicated that they may aid singing if somewhat closer together. But if they’re too close, the false folds can produce a

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low-pitched, rough voice that can be a sign of a problem, Scherer points out.

Potential applications for performance and pathology can be found in the larger project as well.

“How come some people have big, bright voices? Are they creating sounds that other people don’t?” he asks. The answers, he says, have to do with laryngeal flow right above the glottis (the opening between the vocal folds). Scherer adds, too, that aspects of auditory perception have to be considered along with phonation when discussing voice quality.

Because problems with laryngeal tissue—including nodules, polyps, cancer and even paralysis of a vocal fold—will redistribute airflow and change pressures, the research needs to model such pathological tissue, he maintains. “All these conditions are challenges relative to modeling. A goal of the grant is to meet these challenges,” Scherer says, expressing hope that funding will be renewed past 2006.

The researchers, he continues, would also like their study to answer the question of how individual surgical procedures will affect the voice. Why else do the work, he asks, if not to help such professionals as surgeons, singing coaches and speech pathologists.

“We need to help solve the practitioners’ problems,” says Scherer, who works with voice students in music and is a consultant to supervisors in BGSU’s Speech and Hearing Clinic. “It’s from research and the needs of the clinic and teachers of voice, whether it’s singing or acting, that tell us what our research agenda should be.”

Environmental health professor named Fulbright Scholar

Gary Silverman, director of the Environmental Health Program, has received a Fulbright Fellowship at the School of Engineering in Work Safety and Environmental Hygiene in the Technological Institute of Costa Rica (ITCR). He will be involved in program assessment and development, teaching and research there this winter and spring.

Silverman’s association with the institute began through his work with the National Environmental Health Science and Protection Accreditation Council, the organization that recognizes BGSU as having one of the 24 accredited environmental health programs in the country.

The ITCR wants to build an academic program in environmental health to meet its charge to produce much of the environmental workforce needed to help align Costa Rica’s national environmental and economic goals. Silverman will evaluate the existing academic program at ITCR and help it reach standards comparable to those met by accredited programs in the United States.

According to Silverman, the need to build workforce capacity in Costa Rica reflects a global demand for well-prepared environmental health professionals—a demand also reflected by the outstanding job market for graduates from BGSU’s Environmental Health Program. By endorsing his Fulbright Fellowship, Costa Rica clearly identifies the link between environmental quality and economic development, he said.

In addition to working on academic program development, Silverman said he looks forward to working with Costa Rican students and faculty, teaching and initiating research.

This is Silverman’s second Fulbright Fellowship. During 1996, he was assigned to the National Institute of Public Administration in Kuala Lumpur, Malaysia. There he worked with government officials teaching about linkages between economic development and environmental quality.

He holds a doctorate from the University of California, Los Angeles, and has written for

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many publications and participates in numerous professional organizations.

The Fulbright Program, created by former U.S. Sen. J. William Fulbright of Arkansas, was launched in 1946. It has since expanded into seven distinct programs, allowing visiting scholars to come to America as well as sending U.S. faculty and professionals abroad. The Bureau of Education and Cultural Affairs in the U.S. Department of State sponsors the program with assistance from the Council for International Exchange of Scholars.

Silverman said that in addition to having the personal fulfillment of contributing to environmental development, he appreciates that the fellowship program gives the United States an opportunity to build bridges and mutual understanding around the world.

IN BRIEF**Earn Rec Center discount with WellAware**

The following WellAware programs will be offered this week. Consult the Web site for more information about WellAware: www.bgsu.edu/offices/ohr/wellaware/index.html

- Nov. 15: "Caring for Yourself While Caring for Others," a support group, noon-1 p.m., 108 Hanna Hall.
- Nov. 16: "Smoking Cessation," with Carrie Belair of the Wellness Connection, noon-1 p.m., 318 Bowen-Thompson Student Union. Call 2-9355.
- Nov. 17: Brown Bag Luncheon, "The Health of Native American Women," with Lynda Dixon, communication studies, noon-1 p.m., Women's Center, 107 Hanna Hall. Call 2-7227.
- Nov. 17: Outdoor Ethics Workshop, "Leave No Trace," 9-11 a.m., 315 Union. Register at 2-2146
- Nov. 17: Safety Training, "Asbestos Awareness," presented by Environmental Health and Safety, 10:15 p.m.-12:15 a.m., 1007 Business Administration Building. Register at 2-2171.
- Nov. 18: Men's Issues Brown Bag Lunch, "Where Have All the Good Men Gone?," presented by the Counseling Center and the Transformation Project, noon-1 p.m., 320 Saddleire Student Services Building. Call 2-2081.
- Nov. 18: Safety Training, "Asbestos Awareness," presented by Environmental Health and Safety, 1-3 p.m., 1007 Business Administration Building. Register at 2-2171.
- Nutrition Counseling by dietetics graduate students, free by appointment. Contact kaplans@bgsu.edu (put "nutrition counseling" in the subject line) or call 352-8279.
- Free Hearing Screenings, College of Health and Human Services. Call 2-2516 for an appointment.
- Walking at Lunch, Eppler South Track, noon-1 p.m. weekdays.

Join the fight against heart disease and stroke

BGSU team captains are needed for the 2005 Wood County Heart Walk, to be held Feb. 12 in the Perry Field House.

Those interested in serving as a team captain should contact Brady Gaskins at 2-7481 or email him at gaskins@bgsu.edu.

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'Comedy of Errors' opens Nov. 18 Thursday

The BGSU Department of Theatre and Film presents William Shakespeare's classic "Comedy of Errors" Thursday-Saturday (Nov. 18, 19 and 20), and at 2 p.m. Sunday (Nov. 21) in the Eva Marie Saint Theatre.

The Bard of Avon meets the Age of Aquarius in this interpretation of Shakespeare's silliest comedy, set in 1968 Haight-Ashbury and directed by F. Scott Regan, theatre and film.

Tickets, \$10 for students, senior citizens and other adults, and \$5 for children 12, can be reserved by calling the theatre box office at 2-2719.

BG@100 conversion reaches milestone

The BG@100 project team has been completing data-mapping sessions throughout the past few months. These sessions can be long and tedious but constitute a critical step in the conversion to PeopleSoft. The sessions are nearing completion, and with the decisions reached in the process, the analysis and design of conversion programs can begin.†

During the last week of October, the first legacy data related to benefits was successfully converted from the legacy system to the PeopleSoft test system.

CALENDAR

Monday, Nov. 15

College of Arts & Sciences Distinguished Faculty Lecture, "Making Modern Men: Visual and Spatial Education at the Bauhaus," by Katerina Ruedi Ray, director, School of Art, 4 p.m., Bowen-Thompson Student Union Theater.

Music at the Forefront, Cleveland Composers Guild, 8 p.m., Bryan Recital Hall, Moore Musical Arts Center. Sponsored by the MidAmerican Center for Contemporary Music, College of Musical Arts.

Tuesday, Nov. 16

Office Supply Show, hosted by Office Depot, 9 a.m.-noon, 228 Bowen-Thompson Student Union. Call 2-8410 for more information.

Center for Family and Demographic Research Fall Workshop Series, "America Factfinder: Obtaining Census Data from the Web," with instructor Amy Wenmoth, noon-1 p.m., 128 Hayes Hall. Call 2-7279 for more information.

Arts and Sciences Forum Lecture, "Lambamena: From Malagasy Textiles to Contemporary Art," with Rebecca Green, art history, 12:30-1:15 p.m., 201 Bowen-Thompson Student Union.

Musicians Guild Concert Series, 7 p.m., 228 Bowen-Thompson Student Union.

Movie, "Van Helsing," 9:30 p.m., Bowen-Thompson Student Union Theater. Sponsored by UAO.

Wednesday, Nov. 17

Brown Bag Lunch, "Native American Women and Health Issues" presented by Lynda Dixon, communication studies, noon-1 p.m., 107 Hanna Hall.

PCA/CITE Grant Application Review Workshop, noon-5 p.m., 201 Bowen-Thompson Student Union. Sponsored by Partnerships for Community Action and the Center for Innovative and Transformative Education. Call 2-7316 for information.

Faculty Artist Series, with Penny Thompson Kruse, violin, and Robert Satterlee, piano, 8 p.m., Bryan Recital Hall, Moore Musical Arts Center.

Thursday, Nov. 18

Visiting Artist, Paul McMullan, ceramic artist, Siena Heights University, demonstration of his working process from 10 a.m.- 5 p.m. and a lecture at 9 p.m., 204 Fine Arts Center.

Men's Issues Brown Bag Series, "Where Have All the Good Men Gone?" noon-1 p.m., 320 Saddlemire Student Services Building. Call 2-2081 for more information.

Arts and Sciences Visiting Writers Series, with Alik Barnstone, poet, translator, critic and editor, University of Nevada-Las Vegas, 7:30 p.m., Prout Chapel.

Jazz Lab Band I, directed by Jeff Halsey, 8 p.m., Koberger Hall, Moore Musical Arts Center.

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Friday, Nov. 19

Women's Professional Development Series, "Money Matters," presented by Valerie Faley, marketing coordinator, Bowen-Thompson Student Union, 12:30-2 p.m., 107 Hanna Hall. Call 2-7227 for more information.

Apollo Night, presented by the Gospel Choir, 7-9 p.m., 101 Olscamp Hall. Tickets are \$5 in advance and \$7 at the door. Email Summer Donaldson at summerd@bgnet.bgsu.edu for more information.

Movie, "Van Helsing," 7 and 9:30 p.m., Bowen-Thompson Student Union Theater. Sponsored by UAO.

Collegiate Chorale and University Women's Chorus, 8 p.m., Kobacker Hall, Moore Musical Arts Center.

Saturday, Nov. 20

Wind Ensemble, University Band and Concert Band, 9 a.m., Kobacker Hall, Moore Musical Arts Center.

Swimming vs. Notre Dame, 1 p.m., Cooper Pool.

Free Family Movie, "Finding Nemo," 3 p.m., Bowen-Thompson Student Union Theater. Sponsored by Off-Campus Student Services and the Bowen-Thompson Student Union.

Hockey vs. Wayne State, 5:05 p.m., Ice Arena.

Sunday, Nov. 21

Sounds of the Stadium, presented by the Falcon Marching Band, 3 p.m., Lenhart Grand Ballroom, Union. Tickets are \$8 for adults and \$5 for students. To reserve, call 2-8171.

Movie, "Van Helsing," 9:30 p.m., Bowen-Thompson Student Union Theater. Sponsored by UAO.

Monday, Nov. 22

Graduate String Quartet, 8 p.m., Bryan Recital Hall, Moore Musical Arts Center.

Continuing Events

Nov. 18-21

BGSU Theatre Production, "Comedy of Errors," by William Shakespeare, directed by F. Scott Regan, theatre and film, 8 p.m. Thursday-Saturday and 2 p.m. Sunday, Eva Marie Saint Theatre. Tickets are \$10 for students, senior citizens and other adults, and \$5 for children under 12. Reservations can be made by calling the box office at 2-2719.

Nov. 19-Jan. 18

Art Exhibition, "Design Migrations: UniGraphics' Best," by Paul Obringer, UniGraphics director, designer and instructor, Willard Wankelman Gallery, Fine Arts Center. Gallery hours are 10 a.m.- 4 p.m. Tuesday-Saturday and 1-4 p.m. Sundays.

Through Nov. 21

Art Exhibition, "INTERVENTIONS," featuring pieces from artists Ken Aptekar, ChanSchatz, Mark Dion and Ellen Harvey, Dorothy Uber Bryan Gallery, Fine Arts Center. Gallery hours are 10 a.m.- 4 p.m. Tuesday-Saturday and 1-4 p.m. Sundays.

Through Nov. 23

Planetarium Show, "Space Dreams: Our Quest to Explore the Universe." Shows are at 8 p.m. Tuesdays and Fridays, 7:30 p.m. Sundays and 2 p.m. Saturday (Nov. 20). \$1 donation suggested.

Through Dec. 3

Art Exhibition, painting by Neil Jussila, Little Gallery, BGSU Firelands. Gallery hours are 9 a.m.-5 p.m. Monday-Friday.

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FACULTY

Intervention Services. Assistant Professor (two positions). Call Eric Jones, 2-8256. Deadline: Dec. 1.

Educational Foundations and Inquiry/Leadership and Policy Studies. Assistant Professor. Call Patricia Kubow, 2-7380. Deadline: Jan. 3.

Popular Culture. Assistant Professor. Call Jeffrey Brown, 2-2982. Deadline: Jan. 5.

Arts and Sciences. Director, BGeXperience. Call the college office, 2-2659. Deadline: Jan. 10.

Human Movement, Sport and Leisure Studies. Visiting Assistant Professor/

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Instructor. Call Linda Hamman, 2-7234.
Deadline: Jan. 14.

Teaching and Learning. Associate/Full Professor. Call Trinka Messenheimer, 2-7395. Deadline: Jan. 14.
• Assistant Professor (two positions). Call Leigh Chiarelott, 2-7314. Deadline: Jan. 14.
• Lecturer. Call Leigh Chiarelott, 2-7352. Deadline: Jan. 31.

College of Technology. Dean/Professor. Call Jim Smith, 2-0623. Deadline: Undetermined.

Contact the Office of Human Resources at 419-372-8421 for information regarding classified and administrative positions. Position vacancy announcements may be viewed by visiting the HR Web site at www.bgsu.edu/offices/ohr.

Employees wishing to apply for these positions must sign a "Request for Transfer" form and attach an updated resume or data sheet. This information must be turned in to Human Resources by the job deadline.

CLASSIFIED

View job descriptions at:
www.bgsu.edu/offices/ohr/employment/BGSU_only/

The deadline for employees to apply for the following positions is 1 p.m. Friday, Nov. 19.

Administrative Assistant 2 (C-126-Re)—Faculty Senate. Pay grade 10. Twelve-month, full-time position.

Custodial Worker (C-122-Re)—Bowen-Thompson Student Union. Pay grade 2. Twelve-month, full-time position.

Programmer/Analyst 2 (C-125-Ve)—Office of Admissions. Pay grade 11.

Twelve-month, full-time position.

The following position is advertised on and off campus.

Secretary 2 (C-121-Ve)—Professional and Community Education, Continuing and Extended Education. Twelve-month, full-time position. Pay grade 7. Deadline: 1 p.m. Monday, Nov. 29.

ADMINISTRATIVE

View job descriptions at:
http://www.bgsu.edu/offices/ohr/employment/adm_staff/

Senior Associate Director (V-119)—University Dining Services. Review of applications will begin Nov. 15 and continue until the position is filled.

Corporate Relations Specialist (V-124)—Television Services-WBGU-TV. Administrative grade 10. Deadline: Nov. 26.

Server Administrator (V-121)—Information Technology Services. Administrative grade 16. Deadline: Nov. 26.

Assistant Director, Employment Advantage Program. Career Center. Administrative grade 14. Deadline: Dec. 3.

Coordinator (V-125)—Disability Services. Administrative grade 15. Deadline: Dec. 3.

Manager, University Dining Services (V-035)—Division of Student Affairs (Re-advertised). Two positions, administrative grade 12. Review of applications began Aug. 6 and will continue until the positions are filled.

Director, Office of Educational Outreach (04-100NF)—BGSU Firelands. Administrative grade 16. Review of applications began Sept. 17 and will continue until the position is filled.

OBITUARY

There were no obituaries this week.