ST. OLAF STUDENT-MUSICIANS FIND THAT THE COMBINATION OF MUSIC AND SCIENCE STRIKES JUST THE RIGHT CHORD.

MUSIC + [SCIENCE + MATH] = BALANCED LIVES

BY CAROLE LEIGH ENGBLOM

EXPERTS ARE FOND OF TELLING EDUCATORS these days that the United States needs to produce more scientists and mathematicians if it wants to compete globally in the 21st century. At the same time, amid pressures to cut costs, experts on child development urge local school boards to keep funding choir, band and orchestra programs because the practice of music is important to intellectual growth.

At St. Olaf, both pursuits are encouraged and valued, which is why the college boasts so many singers and musicians who also are majoring in science and math.

James McKone '08 of Mason City, Iowa, is passionate about music. At age 10 he began playing the clarinet, and, like every student who majors in music at St. Olaf, he also plays piano. McKone, who has a double major in music and chemistry, says he chose St. Olaf because it provided him the opportunity to pursue both his interests and his professional ambitions. In addition to serving as principal clarinetist in the St. Olaf Orchestra, he also is conducting research in biochemistry, attempting to make "never-before-seen molecules that can function as structural models for small but important bits of biological organisms."

This year, 19 of the 91 "Orchies" in the St. Olaf Orchestra are majoring in mathematics and the natural sciences, which includes biology, biomedical studies, biomolecular science, chemistry, computer science, neuroscience, physics, psychology and statistics. Five of those 19 Orchies are also music majors. Twenty-nine "Bandies," a full one-third of the St. Olaf Band, are majoring in math or science, with six also majoring in music. Twenty-four students in the 75-member St. Olaf Choir have majors in mathematics or science, and four are carrying an additional music major.

"Music and science complement each other because I can approach them in different ways," says McKone. "I treat music as an art. It allows me to express myself and engage in community in a way that is both sustaining and healing. I find science stimulating in a more intellectual way, although the most meaningful moments, the 'eureka' moments, in either context feel strikingly similar."

Music and science have gone hand in hand since the days of the Greek philosopher and mathematician Pythagoras of Samos in the 6th century B.C.E. He believed that through mathematics everything could be predicted and measured in rhythmic patterns.

"Both music and math are languages, and I think they require the same sort of thought processes," says Heather Wood '07, a music and mathematics double major from Albuquerque, New Mexico. Wood plays the harp, and sometimes percussion, in the St. Olaf Band and St. Olaf Orchestra. "There are often many ways to solve a math problem or play a piece of music, but part of the fun lies in discovering an elegant solution," she explains.

St. Olaf is known not only for its outstanding music programs established more than a century ago, but also for its top ranking among the country's baccalaureate liberal arts colleges in the number of mathematics and statistics majors who go on to earn Ph.D.s. The college ranks fourth in medical sciences and sixth in chemistry, physics and the life sciences as a feeder for Ph.D.s.

The principal second violinist in the St. Olaf Orchestra, Brianna Hirst '08, is majoring in math and statistics, and most of her classes are mathematical. Music allows her to express herself in ways that numbers cannot. "I go to the practice room to be creative and I leave all numbers at the door," says Hirst, who is from Minot, North Dakota. "Each discipline challenges one side of my brain so by the end of the day, I have had a full brain workout."

"The science and math programs seem present in the Christiansen Hall of Music almost as much as in the science building," says St. Olaf Orchestra Conductor Steven Amundson. "I am always amazed at the numbers and quality of science and math students who play in my orchestra. These and other non-music majors, many of whom chose St. Olaf because of the high-quality music program and their ability to access our ensembles, are no small part of the reason for our success."

Ryan Christensen '07 came to St. Olaf from Big Timber, Montana, intent on pursuing a career in medicine. By combining his biomedical studies concentration with a music major, Christensen discovered "a much deeper appreciation for history and the humanities. I found that music greatly enhanced my liberal arts experience."

"We make music together, we support each other and we grow together. All of us share an interest in playing music for a greater good."

— ANNA HELGEN '09, ST. OLAF BAND TROMBONIST, PHYSICS AND MATHEMATICS MAJORS

Nineteen students in the 91-member **ST. OLAF ORCHESTRA** are majoring in mathematics or the natural sciences, including (L–R, back row) Matthew Beckmann '07, Kristin Henry '07, Keeley MacNeill '08, Kirsten Peterson '08, Heather Wood '07, Christina Koch '09, Brianna Hirst '08, John Groerich '08, Molly Schaus '08, James McKone '08 and Erin Manlove '07; (front row) Emma Hornick '09, Rebecca Dyer '09, John Bergan '08, Allison Wagner '08, Suzanne Hintz '08 and Briana Griffin '10.

One-third of **ST. OLAF BAND** students are majoring in mathematics or science. Among them (L-R, back row) Brienna Lise Carlson '09, Christopher Roberts '10, Kate Virkler '09, Anna Helgen '09, Lauren Cassat '07, Dan Larson '10, Megan Ehresmann '10, Maria Hedberg '07; (front row) Leanne Barck '10, Molly Boes '08.

Twenty-four **ST. OLAF CHOIR** members are math or science majors, including (L–R) Katherine Oyster '08, Becky Blessing '07, Matthias Hunt '07, Bethany Johnson '07, Joey Paulsen '07, Nathan Eckberg '08, Jake Leibold '07, Meredith Sorenson '07, Ryan Christensen '07 and Tyler Johnson '09.

Through private study of voice, piano and organ, as well as singing in the St. Olaf Choir, Christensen has been challenged in ways he never thought possible. "I have learned much more about myself and what I want to contribute to creation," he says.

St. Olaf inspires this love of music making. St. Olaf Professor of Music Dan Dressen believes music is a calling, a divine gift that should be honored. Professor of Music and St. Olaf Band Conductor Timothy Mahr '78 takes the sanctity of music one step further. "I, along with many of the band members, encounter our Creator at the core of our music-making and believe in the power of this gift to transform our lives," he says.

[CONTINUED ON PAGE 51]

A CONSERVATORY EXPERIENCE

St. Olaf's reputation for outstanding music is world-renowned. Students receive a conservatory music experience in a liberal arts environment, meaning that music majors have two-thirds of their coursework in music and the remainder in general studies. The demands placed on a student-musician's time and talent is extraordinary because performance standards are very high. Nonetheless, there is room in the Music Department both for serious musicians who intend to make music their careers and for those who want to make music for the fun of it.

"Music at St. Olaf encompasses all levels of talent, ability and commitment," says Erin Manlove '07, a math and physics double major from Rapid City, South Dakota, and assistant principal violist in the St. Olaf Orchestra. "St. Olaf has worked out very well for me because my professors understand the value of a balanced life."

Sean Johnston '09, a mathematics major from Minnetonka, Minnesota, was looking for a college where he could continue to play trombone while studying math and science. "The music program at St. Olaf is so accessible to non-music majors that I didn't need to double major in order to play in the band," he says.

The college also has a well-established track record of distinguished programs in science and mathematics. More than 40 percent of St. Olaf students graduate with a major or concentration in these academic disciplines. Undergraduate research at St. Olaf is among the best in the nation, and the college is consistently included within elite groups of grant recipients rewarded for excellence in scientific research. Now, looking to carry its nationally recognized programs well into the 21st century, St. Olaf has broken ground on a state-of-the-art Science Complex currently scheduled to open in the fall of 2008.

"The new Science Complex will be more than just a beautiful new building with the latest in equipment," says St. Olaf President David R. Anderson '74. "It has been carefully designed by our math and science faculty around our curriculum and the way we teach at St. Olaf today. It will promote the kind of active, interdisciplinary learning — among science and non-science majors alike — that will keep St. Olaf a national leader in science education."

VOCATION + AVOCATION

Student-musicians who intend to combine their love of music with careers in math, science or medicine have found St. Olaf to be a perfect fit. Music always has been an integral part of Becky Blessing's life. Back home in Morgan Hill, California, her mother, Mary, is an Episcopal priest at St. Philip the Apostle Church in Santa Cruz County. "I spent most of my childhood singing and dancing in the aisles to entertain myself," she explains. Music is one part of Blessing's interdisciplinary fine arts major, and mathematics is her second major. Blessing, a senior who sings in the St. Olaf Choir, intends to use the arts to teach middle school mathematics. As part of her senior distinction project, she's developing lesson plans using dance, theater and visual art in addition to music as a way to teach children the mathematical concepts of algebra and geometry.

Molly Boes '08 of St. Paul is using her music major and biomedical studies concentration to pursue a career as a music therapist. "Music is at the core of my science major," says Boes, who plays bassoon in the St. Olaf Band. "In that profession, the whole therapeutic approach is looked at from a musical perspective."

Senior Ryan Christensen considers medicine to be a perfect blend of music and science. "Clinical knowledge will help our patients, but that is nothing unless we are effectively communicating with the people we care for by touching their souls," he says. A member of the St. Olaf student-led Emergency Medical Technician (EMT) team and a volunteer EMT technician at home in Montana, Christensen believes "this communication is enhanced by a musician's sensitivity. One of the finest cardiovascular surgeons I work with at the Billings Medical Clinic is an accomplished concert pianist."

"It's interesting to study science in a place where music is such a large part of so many students' lives," says Jon Groerich '08, who came to St. Olaf from St. Louis, Missouri. "Many professors tie music into their science lectures." Groerich, who is majoring in biology, plays principal oboe in the St. Olaf Orchestra and calls music his avocation. "I'm still on the fence about my vocation," he says. "I guess I will have to see where God leads me."

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