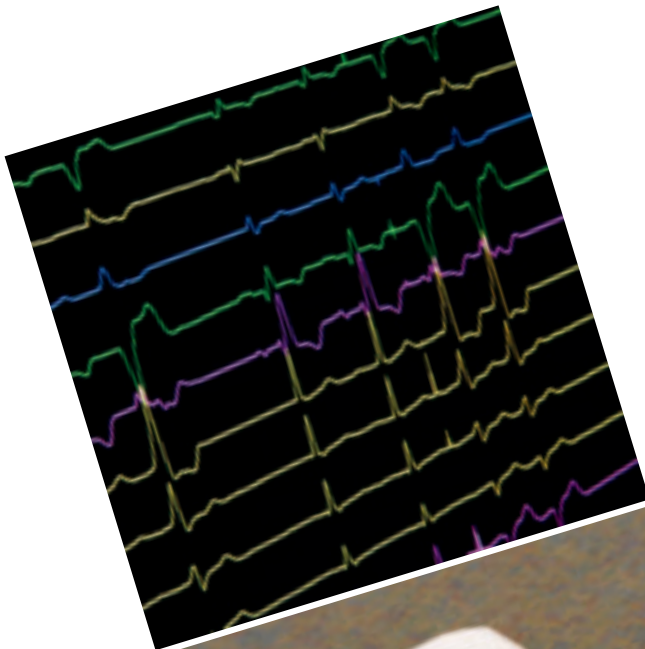


# Learning Links

From the Cleveland Clinic Office of Civic Education Initiatives - Fall 2009



"It was definitely a holistic experience in that not only did it change my critical thinking, my logical skills, and my scientific perception, but it changed my character and my nature too."

— Jaimin Shah  
2009 Science Intern  
Mentor High School



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### LearningLinks Fall 2009

**McKenzie Merriman**  
Editor, Writer, Designer

**Megan Opatrny**  
Editor, Writer, Designer

**Clare Wittenberg**  
Editor, Writer, Designer

**Neil Lantzy, Yu Kwan Lee,  
Willie McAllister, Steve Travarca,  
Ken Baehr, Tom Merce, Don Gerda**  
Contributing Photographers

**Rebecca McKinsey**  
Contributing Writer

**David Middleton**  
Creative Learning Mentor

**Bryan Pflaum, MFA**  
Creative Learning Mentor

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Dear Reader,

The Office of Civic Education Initiatives was created to fulfill Cleveland Clinic's commitment to promoting education everywhere the institution has a presence. As participants in the Creative Learning Internship Program, we have worked with creative and medical professionals who have taught us a great deal about creativity and healthcare. They have shown us how we can use creativity to communicate, solve problems, and inspire others. This internship has given us the opportunity to share our ideas and collaborate with one another as we developed our projects, from conception to completion. This summer, we became writers, researchers, editors, producers, and designers. Our mentors gave us the freedom to make decisions but were always ready to help us out whenever we needed it. We learned from them – and from each other – as we created educational programs and materials designed to help the Office achieve its objectives.

We are eager to share what Cleveland Clinic and the Office of Civic Education Initiatives have to offer the student inside each of us, and we have created the newest edition of *LearningLinks* with just that in mind. Our experiences this summer have helped us grow as people, and have opened up possibilities for our futures that we never imagined. We encourage you to read on, get involved, and explore the possibilities for yourself. What you discover will most likely amaze you.

Sincerely,  
2009 Creative Learning Interns

McKenzie Merriman  
Trinity High School

Megan Opatrny  
Laurel School

Clare Wittenberg  
Westlake High School

Megan Opatrny

McKenzie Merriman

Clare Wittenberg



# Q&A

with Rosalind Strickland

## **What were your expectations for this internship program when it started five years ago?**

My goal was to create a national model for high school internships that would go beyond the traditional “shadowing/observation” and provide students with real-world, hands-on learning opportunities that not only underscore the importance of science, math, health and wellness, the arts and innovation, but better prepares students for learning and working in the 21st Century. These internships have made a strong case for the value of informal education and how it can enhance the learning process.

## **How do you think the opportunities available to interns have expanded since the start of the program?**

The program has opened many doors for the interns and they have enjoyed many successes beyond the internship. Interns have presented their research nationally and internationally. Collectively, they have garnered more than \$17 million in college scholarships. Several interns have had their research published in peer-reviewed medical journals. Artwork from the eXpressions™ Program has been on the cover of books and national magazines. Interdisciplinary creative projects have won national and international awards. Interns can apply for memberships in professional societies formerly only offered to those in the field of study.

## **What are some changes you have noted in the program over the past few years?**

As the program has grown, so has its popularity. Healthcare is a fascinating career option that is not too well understood. The fact that students from other states and countries have taken an interest in what we are doing speaks volumes about our program. It has also been a life-altering experience. Colleges and universities are very impressed with what our students accomplish in the internship. Students emerge from the program more focused, confident in skills and their future careers and with a new self-awareness regarding their own talents and potential.

## **As it has progressed and grown, has the program met your expectations?**

The program has far exceeded my expectations from the student growth and knowledge gained during the summer to the sharing of groundbreaking research across numerous disciplines throughout the academic year. We have been able to inspire a new innovative path of learning for not only students, but teachers as well, and engage a diversity of learning styles that encourage and nurture self-discovery. It has been rewarding to see so many teachers, principals and superintendents eager to join us and pioneer innovative approaches to blended-learning.

# eXpressions™

Where Research and Creativity Meet

ART • LANGUAGE • MATH

**The connections between science, art, language, and math have been growing stronger over the past few years thanks to the efforts of Cleveland Clinic's Office of Civic Education Initiatives (OCEI). Through its eXpressions™ line of programs, high school students have been breaking down old barriers, using their own projects and talents to educate and inspire each other.**

## Starting with Science

OCEI's Summer Internship Program, launched in 2005, is an intensive, nine-week paid internship that allows high school students to explore a

wide variety of healthcare careers. Offering internships in areas such as pharmacy, respiratory therapy, nursing, and medical laboratory, students gain a fuller appreciation for the world of medicine, and learn that there is a whole support system behind every physician and surgeon.

Over the summer, each intern conducts an authentic research project. With a medical professional providing mentorship, the intern takes a lead role in testing a hypothesis, gathering data, and compiling results. Some students have been able to observe groundbreaking surgeries as a part of their projects; others have presented their findings at national and international conferences and have been published in medical journals.

"What was great about this experience," says 2009 Science Intern Jaimin Shah, "was that instead of just shadowing a doctor, which is a

temporary thing that lasts a week or a month, we actually have research that we have to take with us forever, up to the day that we go to medical school."

## Connecting Students and Subjects

Before heading off to medical school, interns return to their high schools. And the eXpressions™ Art Program, launched in the fall of 2005, allows these science-minded students to share their research projects with peers who are studying art. "By explaining the research they conducted at Cleveland Clinic, and by describing the 'big picture' of their findings, interns reinforce their learning from the summer and gain a fresh perspective on what they've accomplished," says eXpressions™ architect and director Bryan Pflaum, MFA, "And the art students, in turn, gain valuable information

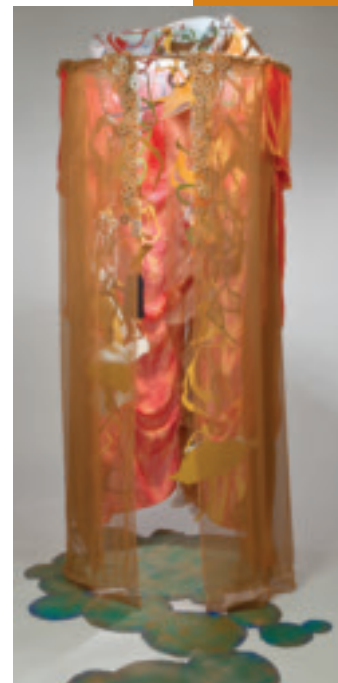
## Collecting Echoes

Slip up the blood vessels' hollow slits  
And imagine where the arteries meet  
And behold the heart—just picture it

'Til it stops. You zoom out, but get caught  
In a jam of tacky plaque—it's a clot.

(above)  
"Collecting Echoes" (excerpt)  
Elizabeth Beam  
Gilmour Academy  
Gates Mills, Ohio

(right)  
See *What You Swallow*  
Meagan Gehrke  
Brecksville-Broadview Heights  
High School  
Broadview Heights, Ohio



*Reign on Me*  
Ryan Chavez  
Everglades High School  
Miramar, Florida



and creative inspiration from their peers' presentations."

From here, the artists brainstorm and experiment with ways to represent the scientific research they are learning about. This creates a link between two worlds typically thought to be so different: the statistical, precise world of science and the free, creative world of art. Submissions have included nine-foot sculptures, flash animations, and photography, as well as stunning paintings and drawings and musical compositions. "For a lot of students," says Westlake High School art teacher and eXpressions™ veteran, Christine Filmer, "it's one of the best pieces of art in their portfolio."

Submissions are judged by a panel of professional artists, art educators, and scientific

researchers; and exceptional pieces are awarded ribbons, published in a booklet, and displayed in the annual eXpressions™ exhibition each January. Award-winning art from the program has also been exhibited at Great Lakes Science Center, appeared on the cover of a national medical journal, been featured in a Cleveland Clinic television PSA, and earned international recognition in the Telly- and Videographer Awards competitions.

In 2007, eXpressions™ expanded to provide similar opportunities to language arts students.

In addition to presenting to art classes, summer research interns now present their projects to language arts and foreign language classes, inspiring student writers to compose pieces of literature that creatively interpret the research. Through the creation of their written pieces, students learn about scientific issues and medical research topics that they may not have known about if it weren't for eXpressions™.

And the latest addition to the eXpressions™ line of programs was launched this year. The eXpressions™ Math Program begins in January, after the fall Art and Language competitions have concluded. The students who participate in Math have a slightly different challenge. Either as individuals or in teams, participants choose a research project, an award-winning artistic interpretation of that research, and an award-winning literary interpretation of the research. Then, by examining these three projects – the research, the art, and the language – math students must demonstrate how mathematics plays a part in each of the three pieces.

Language and math submissions are judged by a panel of content specialists. And just like the



*Tree of Life*  
Keturah Walker  
Shaker Heights High School  
Shaker Heights, Ohio

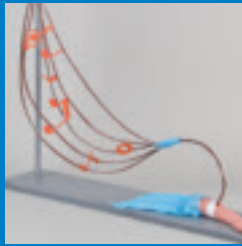
# The Healing Power of Music



## Research

"This study assessed effectiveness of alternative pain therapies such as music therapy in reducing pain of previously medicated surgical patients. The hypothesis was that if a patient is receptive to the music, they will experience pain relief."

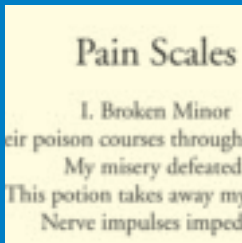
— Marissa Rose, Summer Intern



## Art

"In my sculpture, an IV drips from a CD player. It pumps a liquid down into an arm. The IV tubing branches off into five lines to form a music staff. The liquid in the IV is the color of blood, signifying the vitality of music in our lives. Since the IV is flowing from a CD player instead of an IV bag, the only 'medication' to sooth the pain is music."

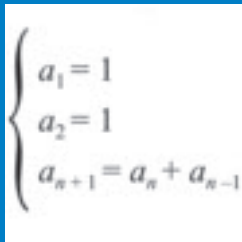
— Alina Raulinaitis, Artist



## Language

"My poem contrasts two patients: the first on pain medication and the second using alternative therapy, namely music. The main piece is written in two subdivisions which originate from the minds of both speakers. I wanted to stress the negative aspects of using pain medication, which include physiological dependence and mental detachment, while accenting the benefits of using an alternative method of treatment."

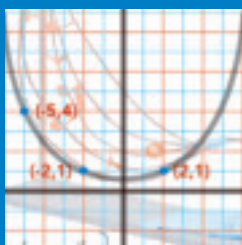
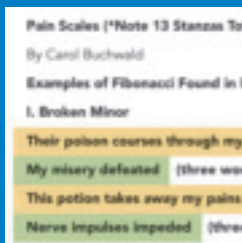
— Carl Buchwald, Poet



## Math

"The eXpressions™ Math Program submission we have composed and compiled is a direct representation of our goals to discover, interpret, and expound upon the mathematical principles found in the research, literature, and art provided to us by Cleveland Clinic. We decided to delve into the summer research project of Marissa Rose and discover the hidden mathematical undertones throughout her research, 'Alternative Pain Therapies and Their Effectiveness in Previously Medicated Surgical Patients,' the poem written by Carl Buchwald, 'Pain Scales,' and the sculpture created by Alina Raulinaitis, *Dripnote*. In order to do so, we spent weeks observing and analyzing the mediums and then, subsequently, learning and applying new mathematical principles and techniques we saw represented and implemented in the research, poem, and sculpture. For our final interpretation, we chose to expound upon the concepts of symmetry, the Fibonacci sequence, catenary curves, and experimental design techniques."

— Megan Cubberley, Nick Gratto, Alyssa Schabel, and Allsion Wengryniuk, Mathematicians



artwork from eXpressions™, the literary and mathematical interpretations of intern research projects have received widespread recognition.

## Extending the Program's Reach

For schools that didn't have a student spend a summer at Cleveland Clinic, eXpressions™ is still an option. OCEI has made intern research projects accessible online.

myRESEARCH™ is an online video presentation of each intern's research project. In addition, each summer five interns are chosen to be featured in mRi™: myRESEARCH illuminated, a Web-based video series produced by Creative Learning Interns that interprets and presents the science interns' research and summer experience. These two online resources make the interns' research accessible by schools and students everywhere. "Since we are in Toledo, we relied on the materials that were available on the Web to share with our students and have them understand the science research that was completed already during the summer," says Lisa Slates of Glass City Academy in Toledo, Ohio.

Last year, thanks to the availability of these online resources and interns' eagerness to share their research projects with classmates, more than 600 art, language arts, and math students from 37 high schools across Ohio and Florida participated in eXpressions™, producing powerful works of art, literature, and mathematics, and proving in the process that the traditional academic disciplines are more intertwined than we may think.

# Inside the Future of Healthcare



Carolyn Creneti, Medical Laboratory Intern



Kameron Brissett, Nursing Intern (left)



Steven Zhou, Respiratory Therapy Intern

Through its Summer Internship Program, the Office of Civic Education Initiatives gives high school students the opportunity to work alongside some of the nation's most renowned physicians, nurses, medical researchers, and allied health professionals. The interns have a chance to experience the real world of healthcare and to explore potential career paths in ways they could have never imagined.

## Research Intern Tests Out Groundbreaking Technology

As a junior, Brecksville-Broadview Heights High School's Carolyn Creneti attended a distance-learning program that gave students the opportunity to learn about the summer internships at Cleveland Clinic. She immediately decided this was something she wanted to do and looked into the application process. After being accepted into the Medical Laboratory program and starting work in June, she began to realize how this internship would change her life.

"I am ecstatic about my choice to come here this summer and be an intern," Creneti says. "I am being trusted with so much responsibility. I was one of only two people who were trained and certified to work the new PATHOS Microwave Processor."

Carolyn is researching whether or not this new PATHOS machine, a device that removes all the water from a specimen in order to prepare it for the path-

ologist's review, is a viable alternative to the older, conventional processor, which can take up to 6 to 12 hours to do the same job. The new machine performs in about half the time but hasn't been accepted as the standard.

"Starting out I didn't even know that a department exists where people take whole tissues and turn them into glass slides with sections of the tissue on it that are one cell thick," Creneti says. "It just never occurred to me that people needed tissues surgically removed and then diagnosed, let alone that there was such an intricate process to do that."

After working a summer in the Histology Department, however, Creneti now knows that such a possibility is in fact a reality. Through her research, she has concluded that the microwave processor is valid and can be used for routine use throughout the lab. According to Creneti, "This will speed up the process of diagnosing certain diseases and truly benefit the patients involved."

## Nursing Intern Helps Put Patients First

Kameron Brissett, a senior at Horizon Science Academy, also learned about the internship through school. A classmate had completed the internship the previous summer and encouraged her to apply.

"I decided that this was an opportunity to expand my knowledge about healthcare and learn about real patient care," Brissett says, "I plan on becoming a

## Team Bios



Sarah Khoncarly, Nursing Intern

### Sarah Khoncarly

Senior, Twinsburg High School  
Science Internship Program for Nursing  
Marymount Women's Health Center

**Future Plans:** Go to NEOUCOM for medical school where I hope to be a pediatrician or an OB/GYN.

**Amazing Experience:** Watching deliveries and getting to work on patients, helping women receive prenatal and gynecological care and taking vital signs on newborn infants.

**Something Learned:** I learned the lessons that every nurse should know and that is compassion. I learned how to bond with the patient and ease their pain and be able to talk with the patient and reassure them that everything would be ok!

**Project:** "New Mother's Perception of Provider Support of Breast-feeding during the Antenatal Period." I basically examined the mother's perception on whether they were advised by their primary OB provider to breast-feed. The purpose was to see if providers had a positive influence on a mother's decision to breast-feed.

### Kathleen Dubovec, MSN, CNP

Marymount Women's Health Center

**Best Part of Mentorship:** The infusion of energy Sarah brought to our department. She was like a sponge, anxious to learn about everything and willing to try any new experience. I really admire her confidence and self-assuredness. I had forgotten how much I enjoyed doing research, the literature search, gathering data, the analysis and the writing. Going through the process with Sarah rekindled my interest. It was fun to see her grow into a contributing member of our team at the Cleveland Clinic.

**Do It Again?** I would definitely have another student in this program.

pediatrician and starting my own practice someday and this internship has helped me refine my management skills, improve my work ethic, and augment my business etiquette.”

Brissett went into this summer not knowing what exactly to expect. “I didn’t expect to make a difference in the lives of patients,” she says. But she did.

Her project looked at the short form survey and walk distances that congestive heart failure and chronic kidney patients take and sought to determine whether their individualized care at the outpatient clinics improved their quality of life. The test computes physical and mental composites for the patients based on their answers to multiple-choice questions. “This project,” she says, “has taught me when a little more effort in care is put forth, patients may have a better outcome in life.”

When asked about what advice she might share with future Cleveland Clinic interns, Brissett suggests being dedicated, working hard, and keeping an open mind. “Although it might not be what you expected at the beginning,” she says, “it will be the best experience you’ve ever had.”

#### **A Full Year Later and Still Learning**

Some interns just can’t stay away. For Steven Zhou, a Respiratory Therapy Intern from Hudson High School, working nine weeks with world renowned healthcare

professionals just wasn’t long enough. After his introduction to the world of medicine during the 2008 Summer Internship Program, Zhou was asked by his mentor to stay on part-time throughout the school year.

“This was a chance to explore the two fundamental sides of medicine: the clinical portion, with doctors, nurses, etc., and the behind-the-scenes research portion,” he says, “One cannot exist without the other.”

Over the past year, Zhou has been researching the effects of lung mechanics on oxygen delivery with nasal cannulae. He has been using a lung simulator and testing the effects of chronic obstructive pulmonary disease on a simulated patient’s fraction of inspired oxygen.

“My mentor and I have found that the current method for prescribing oxygen to patients may need to be altered. We are currently working on a further add-on study to publish in a respiratory journal. This project will help me make a lasting impact in the healthcare field,” he says.

Zhou plans to become a cardiologist and says, “This program has given me a first-hand experience in the field of healthcare, a field I am striving to be a part of. While my friends are lying around bored, I am a part of something on a grander scale. I am a part of the Cleveland Clinic. This opportunity is priceless.”

#### **Jaimin Shah**

Senior, Mentor High School  
Science Internship Program  
Transplant Center

**Future Plans:** Going to medical school.

**Amazing Experience:** I have actually gotten the opportunity to perform the hands-on lab procedures that the medical technologists and researchers carry out. I learned everything from the rudimentary basics such as proper pipette techniques and how to centrifuge samples to convoluted procedures such as DNA nitrogen base pair sequence, gel electrophoresis, and flow cytometry.

**Something Learned:** The experience has changed my life in that I have gained invaluable exposure and have been able to refine my laboratory techniques and gain a better understanding of the various supporting professionals who stand behind yet elevate the front-line physicians to success. I have been able to perform so many procedures and have been given the freedom to actively perform my research project and have thusly learned so much about the constant changes and technological advances that occur in the medical field.

**Project:** “Structurally Based Analysis of MICA Antibody Specificity Patterns in Patients with Transplant Nephrectomy.” I take blood samples and extract the serum from them to run tests. The patients we work with require organ transplants and we do a kind of typing to figure out what antigens they are prone to producing antibodies against. I prepare the sera and put it through a flow cytometer whose results I then analyze and pass on to my mentor.

#### **Medhat Askar, MD, PhD**

Allogen Laboratories  
Transplant Center

**Best Part of Mentorship:** The look in the eyes of the interns when they understand something they did not realize before. I started to doubt that we could meet deadlines, however, Jaimin was exemplary and I was pleasantly surprised that we could meet all of them.

**Do It Again?** Absolutely, 100% yes.



Jaimin Shah, Science Intern

# A Natural Progression

## Cleveland Clinic's Move Toward Sustainability

**As one of the nation's top hospitals, Cleveland Clinic continuously strives to improve the quality of care it provides to patients. In recent years, however, the institution has also made great strides when it comes to taking better care of the environment.**

In 2007, Cleveland Clinic established an Office for a Healthy Environment (OHE), officially embracing its support of sustainability, a movement which encourages the responsible use of resources to meet our needs today without compromising the ability of future generations to meet their own needs. Under the leadership of Director Christina Vernon Ayers, AIA, LEED, AP, the Office has championed a variety of eco-friendly initiatives which are yielding remarkable results across the entire Cleveland Clinic system.

### **Conserving Resources**

Cleveland Clinic's Miller Family Pavilion and Glickman Tower respectively represent the world's most advanced cardiovascular and urological care facilities. However, they also represent the thoughtful management of resources.

Even before construction of the two facilities began, conservation was already a key consideration. For example, when a parking garage and office complex were demolished to make room for the new structures, contractors reclaimed steel and other resources and recycled them into the new buildings. And during the construction process, Cleveland Clinic leaders supported efficient building designs and carefully chose environmentally friendly supplies.

Energy conservation is challenging for hospitals, since they function 24 hours a day. To address this issue, systems such as high-efficiency ventilation

and lighting control were installed in both the Miller Family Pavilion and Glickman Tower; and in the Miller Family Pavilion, according to Ayers, mercury-free LED lighting was installed at help desks and nurses' stations, as well as in operating rooms, reducing energy consumption by up to 90 percent.

Since the opening of the Miller Family Pavilion and Glickman Tower, conservation efforts have only intensified. In fact, Cleveland Clinic has recently adopted the LEED (Leadership in Energy and Environmental Design) Green Building Rating system as its metric. LEED certification provides independent, third-party verification that a building project meets the highest green building and performance measures; and the interior of the newly expanded JJ North Garage and Office Complex obtained LEED Silver Certification in July.

Two other Cleveland Clinic buildings were also awarded for being green this year. Both the Cleveland Clinic Administrative Campus in Beachwood and Cleveland Clinic Lyndhurst earned a 2009 Energy Star in Healthcare Award from the US Protection Agency for exemplary energy performance – a notable achievement, and a true testament to the Clinic's commitment to sustainability.

### **Reducing Waste**

Another focal point in the Office for a Healthy Environment's sustainability campaign is waste



Cleveland Clinic's Community Farmers Market

reduction. The Office updated a main campus recycling program in February of 2008. The initial goal of a 25% recycling rate, meaning the percentage of total waste being recycled, was quickly met. Now the Office is working toward a 50% recycling rate, an objective which Dr. Cosgrove enthusiastically set as a system-wide goal this June.

OHE also began a composting program in June. AVI Foodservice chefs and prep cooks collect fruit and vegetable scraps, coffee grounds, and egg shells from their main kitchen operations in the H Building. This is just for the retail service in the cafeteria, not for in-patient care.

Student workers from Cleveland Botanical Garden's Green Corps program pick up the compost. They use the compost in their six urban gardens, primarily in the new garden at East 79th and Quincy in Cleveland. The program produced 1,300 pounds of compost in the first week and has now gone to 1,500 pounds a week.

These and similar initiatives related to waste reduction have not gone unnoticed. Cleveland Clinic and its regional hospitals recently received 13 Environmental Excellence Awards from Practice Greenhealth, the nation's leading organization for institutions in the healthcare community that have made a commitment to sustainable, eco-friendly practices in areas such as mercury elimination, waste reduction, and pollution prevention

## Nourishing People

To add to its eco-friendly efforts, Cleveland Clinic recently signed a Healthy Food in Health Care Pledge. The pledge includes an outline that healthcare providers can follow to improve the health of patients, communities, and the environment. The plan includes elements such as working with local farmers to source and increase availability of fresh, healthy, locally-produced food and education programs to inform patients and workers about healthy eating habits.

"We have been implementing many of the programs noted in the pledge," says Ayers. "One example is we host a weekly Community Farmers Market, which starts in June, where our community, visitors, and employees can purchase fresh, locally grown food while learning about healthy and seasonal food choices."

More than just being nutritious, locally produced food travels shorter distances to reach us than commercial products do. "Local products afford us another chance to reduce our carbon footprint," says Ayers, "By minimizing transportation, packaging and shipping costs, we put less stress on the environment."

By changing how we operate, Cleveland Clinic has worked to make a positive impact on our environment and the health and well-being of our patients and employees. And, members of our local community are benefiting from these positive actions too. "Committing to both social and environmental responsibility makes the green movement truly revolutionary," Ayers says. "We not only affect the natural world around us, but we improve lives as well."

The eco-friendly JJ Building





Three Swans by Sarah Morris

## Healing Body, Mind, and Spirit

The concept of hospitals is an old one. In the first century BCE, the Romans were building hospitals to take care of wounded soldiers. Today, we are still building hospitals to care for our sick and wounded.

Similarly, art has long been accepted as a central part of civilization. It is difficult to imagine a world without music, dance, theatre, or visual art. People turn to art for entertainment, inspiration, inward reflection, expression, and comfort. A trip to the theatre or museum can ease the mind and lift the spirit, as a visit to the hospital can heal the body.

“Why then,” asks Iva Fattorini, MD, Executive Director of Cleveland Clinic’s Arts and Medicine Institute, “do we question the coexistence of the two? Why do we question the coexistence of the human body and the spirit? There is absolutely no reason because naturally we are body and mind and spirit together.”

### The Art of Healthcare

Working toward the Clinic’s mission to provide compassionate healthcare, the Arts and Medicine Institute uses the arts, in all of its many forms, as a tool for aiding recovery and improving the mental and emotional wellness of everyone in the hospital. Since it was established in 2006, the Institute’s Art Program has brought the healing capabilities



Cleveland Soul (above) and Whispering (left) by Jaume Plensa

of art to patients, employees, and visitors by expanding the Clinic's collection of art to more than 3,500 pieces. Larger-than-life sculptures and murals, as well as drawings, paintings, and glass etchings, contribute to a relaxing atmosphere in Cleveland Clinic hospitals. The variety of art throughout waiting areas, patient rooms, and hallways can help patients and visitors forget about their anxieties, at least temporarily. Bellamy Printz, MFA, one of the Art Program's curators, explains, "Artworks are chosen for many different reasons, but the most important question the curators ask themselves is whether the art can be a healing element, either through imagery, content, or diversion from the hospital environment."

One of these works of art that draws attention to itself is *Blue Berg (r11i01)*: an enormous sculpture by artist Iñigo Manglano-Ovalle that hangs in the Great Hall of the Miller Family Pavilion. Thousands of blue aluminum rods connect to form an enormous representation of an actual iceberg. The placement of the sculpture above viewers' heads draws attention to the body of the iceberg, an interesting vantage point since in nature only the tip of such a massive structure would normally be visible. Most of an iceberg lies under the water's surface, invisibly supporting what stands above. It's easy to see this as an analogy to the world of medicine, where a large team of healthcare professionals, often working behind the scenes, provides a patient with support.

Two other intriguing sculptures by artist Jaume Plensa are installed in the main lobby of the Miller Family Pavilion. They are both built of silver letters, but employ them differently.

The sitting person of *Cleveland Soul* is completely formed from these letters. Rather than spelling words, they come together to make the shape of the sculpture. Letters take on their more typical role in *Whispering*, in which they are hung in straight vertical lines to spell words and ultimately inspirational quotes by well-known individuals. Both of these pieces invite interpretation and reflection, as anyone can interpret and apply the quotations to fit their own lives, and the blank face of *Cleveland Soul* leaves details of its identity up to the viewer.

Artist Alyson Shotz's *Eight Spatial Nets*, a series of color-filled glass etchings, is installed next to elevators on eight floors of the Miller Family Pavilion and Glickman Tower. The contemporary design of these glass panels—each 108" x 144" or 96" x 480"—creates interesting illusions of space. Another piece nearby is Sarah Morris's *Three*



*Swans*, an impressive mural that includes brightly colored geometric shapes. The mural is in the lobby of Glickman Tower.

Patients, employees, and visitors can enjoy these works of art as they pass through the hospital. And they can get a closer look – and listen – by taking the new self-guided audio tour, which showcases thirty-five works from the collection and provides commentary on each piece. The commentaries last about an hour in all and lead the listener on a one-mile walk. They give biographical information on the artists and descriptions intended to encourage the listener to think about what they see.

## Music and Movement

In addition to bringing sculptures and paintings and murals into the hospital, the Arts and Medicine Institute also offers music performances and programs, music therapy, and even a relaxation channel. One of the music programs is the Doctor-Patient Music Connection, which is intended to improve medical care by raising the patient-doctor relationship to a higher level of communication through the performing arts. Doctors and patients with special musical talents perform with the help of professional musicians such as members of the Cleveland Orchestra, and students from the Cleveland Institute of Music. During the reception, physicians and their patients can deepen their level of communication.

The music program also provides live music throughout the hospital. Professional musicians have performed in waiting and lobby areas in the Miller Family Pavilion, Crile Building, and Taussig Cancer Center, as well as on patient floors. Performances have been given by musicians from the Cleveland Orchestra, Apollo's Fire, Cleveland Pops Orchestra, Roots of American Music, and the Cleveland Music School Settlement.

The Arts and Medicine Institute also hosts dance performances by companies such as

Health and well-being take center stage with professional dance performances.



*Dissolving the Hardness of Ego* by Jennifer Nocon

GroundWorks Dancetheatre and the Dancing Wheels Company. The movement of dance can be therapeutic, and dance and movement classes and workshops are offered to patients.

### **Making—and Measuring—a Difference**

Intuitively, the healing power of the arts makes sense. The Arts and Medicine Institute, however, has worked hard to quantify the impact its work is having.

A recent study of two hundred patients showed that music therapy was effective in decreasing pain, anxiety, depression, and shortness of breath; and it improved mood. Art therapy has also been shown to shorten recovery time.

Patient feedback and studies are continuing to support the connection between art and healing. After some of the first dance and music performances organized by the Arts and Medicine Institute, physicians were surprised to hear patients say they didn't feel pain for a few days afterward or that their energy increased noticeably.

The Arts and Medicine Institute's achievements so far have elicited a very positive response. "We get wonderful feedback from patients, visitors, and staff," says Printz. "We are striving to do great work and provide a unique and healing environment for everyone who crosses the threshold. Feedback and response from participants in our programs is really important as we look towards future programming."

### **Looking Ahead**

The future of the Arts and Medicine Institute holds many exciting projects. "We'd like to follow the trend in developing art and art tours, and that is getting art closer to the people," says Fattorini.

One upcoming project that will do just that is a distance learning program in cooperation with Cleveland Museum of Art (CMA). In this project, a conference room in the Clinic will be activated to connect to CMA through videoconference. Through the internet, docents at the museum will give live tours of the museum, during which patients can ask questions the same way they would if they were walking through CMA. Another program, planned to begin in 2010, will bring docents to the Clinic to lead patients and visitors on short tours of art in various public places.

In Meet Me at MoMA, a program started by the Museum of Modern Art in 2006, art is being used to help Alzheimer's patients. The program provides interactive tours for people in the early to middle stages of Alzheimer's and their families. The Arts and Medicine Institute is planning to bring this program to Cleveland Clinic in cooperation with MoMA.

"We can refocus the mind and spirit, not on the disease, but on something else," Fattorini says. "Maybe they don't have time to think about it in their busy lives, but once they come here, the doors close and they can reflect more on what is really important." ■



Art therapy: a powerful tool in patient recovery

Music concerts encourage relaxation and healing.



# Get Involved!



## **healthCARE™ (Cultivating Acceptance and Respect through Education)**

A dynamic educational program that provides online videos and curricula designed to promote inclusion and self-esteem among children ages 5 through 10. A brand-new component, *The Story of Mr. Oak and Miss Reed*, provides straightforward information and fun, inquiry-based activities that help children make the most of change.

To learn more, visit: [www.clevelandclinic.org/healthCARE](http://www.clevelandclinic.org/healthCARE).



## **EXPLORERS**

An innovative program that employs the visual arts to engage students, grades K-8, in the study of health and wellness. The deadline for teacher registration is October 15, 2009.

To register or learn more, visit: [www.clevelandclinic.org/EXPLORERS](http://www.clevelandclinic.org/EXPLORERS).



## **Spotlight on Learning™**

A groundbreaking program that uses the performing arts to engage second-grade students in the study of health and potential career paths in healthcare.

Deadline for teacher application is November 15, 2009.

To apply or learn more, visit: [www.clevelandclinic.org/SpotlightOnLearning](http://www.clevelandclinic.org/SpotlightOnLearning).



## **eXpressions™**

An interdisciplinary line of programs that utilizes project-based, peer-to-peer learning to immerse high school students in the creative exploration of science and medicine through language, art, and math projects.

To register or learn more, visit: [www.clevelandclinic.org/CreativeLearning](http://www.clevelandclinic.org/CreativeLearning).



## **Summer Internships**

These intensive, nine-week, paid internships give talented high school students from Northeast Ohio the opportunity to work and learn alongside nationally renowned healthcare professionals in a wide variety of medical fields. Areas include: Respiratory Therapy, Medical Laboratory, Science, Nursing, Radiology, Pharmacy, and Creative Learning. Applications for 2010 internships accepted December 1, 2009–February 5, 2010.

To apply or learn more, visit: [www.clevelandclinic.org/CivicEducation](http://www.clevelandclinic.org/CivicEducation).



## **From Jump Ropes to Microscopes Web Game**

Based on the children's book created last summer, this new interactive Web game gives students the opportunity to learn about healthcare careers they may not have even known existed!

To play, visit: [www.clevelandclinic.org/CreativeLearning](http://www.clevelandclinic.org/CreativeLearning) and click on **From Jump Ropes to Microscopes**.



## **myHIVrisk™ Assessment Tool**

Cleveland Clinic's HIV risk assessment tool has been redesigned and updated! Complete the survey, learn your risk level, and get tested! It's free, confidential, and important.

Visit the tool at: [www.clevelandclinic.org/myHIVrisk](http://www.clevelandclinic.org/myHIVrisk).



## **mRi™: myRESEARCH illuminated**

This award-winning, TV-style Web series illuminates the groundbreaking research of Cleveland Clinic high school interns. Topics covered in the newly completed 2009 season include sleep apnea, respiratory distress syndrome, laparoscopic liver surgery, blood transfusions, and Alzheimer's disease.

Tune in at: [www.clevelandclinic.org/mRi](http://www.clevelandclinic.org/mRi).



Office of Civic Education Initiatives  
The Cleveland Clinic Foundation  
1950 Richmond Road, TR307  
Lyndhurst, OH 44124  
[www.clevelandclinic.org/CivicEducation](http://www.clevelandclinic.org/CivicEducation)



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