



FLORIDA LIONS
EYE BANK
— SINCE 1962 —
Restoring the Beauty of Sight



2020 Annual Report



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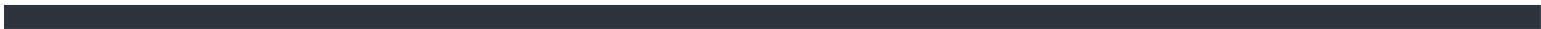
PRESIDENT’S REPORT PAGE 6 By Lion Kenneth Engstrom, PDG



CORNEA RECIPIENT PROFILE PAGE 8 Ruth Greenfield, PhD, has been an educator, artist, activist, and community organizer in Miami since the 1950s. She received a corneal transplant in 2020. This is her story.



OPHTHALMIC RESEARCH STORY PAGE 12 The Spectrally Adjustable Ocular Photosensitivity Analyzer is the first instrument ever created to evaluate photophobia, or light sensitivity, in a clinical setting.



FINANCIAL DONATIONS PAGE 14 Thank you to all who supported us this year!



FRONT AND BACK COVERS Dr. Greenfield’s scrapbook is part of the special collections at the University of Miami Richter Library. Photographs from that scrapbook, documenting decades of her groundbreaking work, are shared here. Also shown are photos and portraits of Dr. Greenfield, courtesy of the Greenfield family.



2019-2020 STATUS REPORT



1,034

Eye Donors

1,330

Tissues Recovered for
Surgical Use

738

Tissues Recovered for
Research Use

775

Corneas Provided for
Transplant

673

Transplanted
Domestically

102

Transplanted
Internationally

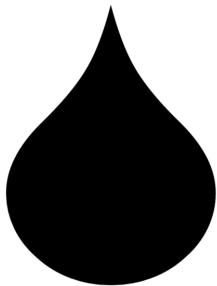


847

Ocular Tissues Distributed
for Research & Education

154

Sclera Provided for
Surgery



1,621

Serum Tears & PRGF
Drops Processed

3,366

Pathology Specimens
Studied

\$329,137

Donated to Research Projects Aimed
at Finding New Cures & Treatments
for Ophthalmic Diseases

MEDICAL DIRECTOR'S REPORT

BY SANDER R. DUBOVY, MD

As we look back at the past year it is clear that it was one that turned out very differently than all of us expected. In ophthalmology and eye banking, the year 2020 was considered special, given its relationship to 20/20, the perceived ideal vision. The year started out quite well for Florida Lions Eye Bank. We were able to provide an increasing number of corneas for transplantation while conducting teaching laboratory sessions to update surgeons on the latest operating techniques. The world changed in the early part of the year as we closely monitored the COVID-19 epidemic that rapidly traveled across the globe.

By the middle of March, the surgeon general urged all hospitals to halt elective surgeries, which includes the majority of corneal transplantations. In order to ensure the safety of Florida Lions Eye Bank's employees, remote working was implemented for those that could do so and appropriate personal protective equipment was secured for all employees. This continued until May 11, 2020, when elective surgeries were allowed to resume. The number of surgeries slowly increased but overall the number of corneas provided was less than in previous years. In order to provide the safest possible tissue for our recipients we modified our screening criteria and the laboratory began testing for SARS-CoV-2 as soon as there was an FDA approved test. We have continued to monitor the situation with regular meetings of the staff, hospital, university and various regulatory agencies. Our goal throughout this trying time has been to provide safe, quality tissue for our recipients while maintaining the safety of Florida Lions Eye Bank staff.

In addition to providing corneas for transplant, Florida Lions Eye Bank's Serum Tears program was classified as an essential service. This vital program is important to patients with severe dry eyes and ocular surface abnormalities. Through careful evaluation and modification of protocols, the Florida Lions Eye Bank was able to continue to provide these drops without

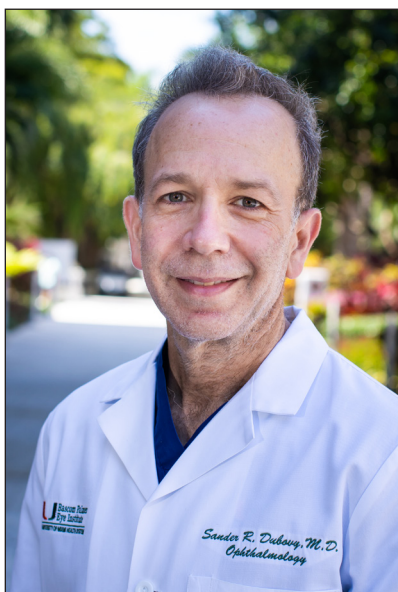
interruption. The number of orders processed has continued to increase even through the pandemic. Florida Lions Eye Bank's Serum Tears financial assistance program has grown, with more patients than ever receiving free or reduced-fee Serum Tears. This ensures that those with limited resources are not denied this important treatment.

The pathology laboratory continued to function throughout the pandemic so that doctors and their patients could receive critical diagnostic information in an expeditious manner. Protocols were amended to ensure the safety of the staff while maintaining the rapid diagnostic flow of the laboratory. The laboratory has been studying the possible effects of COVID-19 on the cornea and eye so as to better understand potential sight-threatening sequelae of the virus.

In the field of research, Beauty of Sight, the Florida Lions Eye Bank Foundation, continues to support critical ophthalmic research aimed at finding new treatments and cures for ocular disease. This year, Beauty of Sight Foundation continued its support of the Ophthalmic Biophysics

Center, under the direction of Dr. Jean Marie Parel, and the Cornea & Ocular Surface Translational Laboratory, under the direction of Dr. Alfonso L. Sabater.

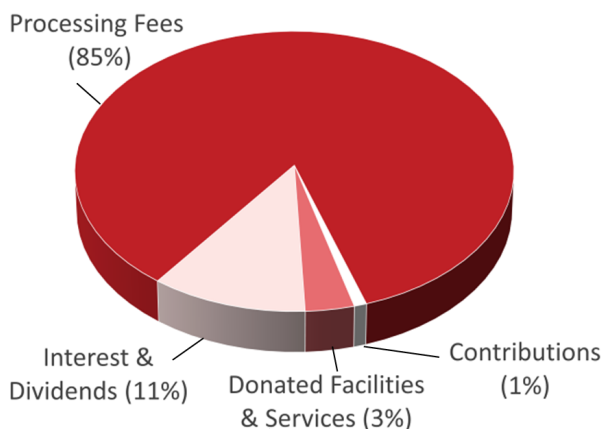
In summary, the year 2020 has been the most trying, as well as the most gratifying, of my twenty years as the medical director of Florida Lions Eye Bank. I would like to personally thank each member of the staff for performing admirably during this unique and unprecedented time in history. Without the hard work and self-sacrifice of our technicians, laboratory personnel, recovery coordinators, and administrative staff Florida Lions Eye Bank would not be able to provide our sight-saving services to those in need. I hope you all stay safe as we look forward to a return to normalcy in the coming year.



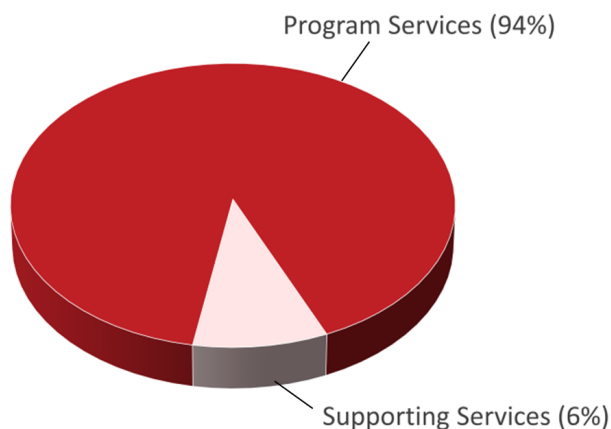
FINANCIAL REPORT

	2019-2020	2018-2019
Revenues and Gains		
Program Service Fees	\$3,078,438	\$3,084,932
Contributions		
General Public	\$16,807	\$20,145
Bequests	\$670	\$24,472
Lions Clubs	\$14,670	\$26,433
Donated Facilities and Services	\$125,767	\$125,738
Interest and Dividends	\$401,522	\$344,231
Investment Net unrealized gain/(loss)	\$(690,938)	\$234,938
Total Revenues and Gains	\$2,946,936	\$3,859,889
Expenses		
Program Services		
Medical Services	\$3,475,653	\$3,215,759
Research Grants	\$329,137	\$264,556
Supporting Services		
Management and General	\$306,677	\$277,799
Development	\$89,062	\$146,332
Total Expenses	\$4,200,529	\$3,904,446

2019-2020 Revenue Sources



2019-2020 Expenses



PRESIDENT'S REPORT

BY LION KENNETH ENGSTROM, PDG

I came into my term as President of the Board of Florida Lions Eye Bank with three big questions:

- What does Florida Lions Eye Bank, specifically, need for growth?
- What do eye banks, generally, need to successfully serve their communities?
- Globally, what changes will we see in the future of eye banking?

My presidency began in July of 2019, well before the COVID-19 pandemic. At that time, the board of directors and I met with a facilitator to discuss long-term strategic planning for the future. Our goal in doing so was to move away from planning on a year-to-year basis, and toward developing a long-term objective of growth, financial sustainability, and technological progress. I was also particularly interested in tackling the aforementioned three big questions and conceiving of innovative solutions as a group.

To promote this long-term planning, the board came to the decision to transition away from short, in-person monthly meetings in favor of monthly briefings via conference call. This was paired with quarterly strategic sessions, three to four-hour gatherings where the group focused on future growth and development. This change to our meeting structure has evolved the conversations the Florida Lions Eye Bank Leadership has as a group.

One such conversation topic was that first big question: What does Florida Lions Eye Bank need to ensure advancement? One answer: more space! Florida Lions Eye Bank leadership has recognized that a larger physical space is required for the eye bank to succeed and grow.

The expansion of our Serum Tears and PRGF programs, as well as the increased demand for pre-cut tissue for EK surgery, requires a larger laboratory facility than our current offices provide. I was pleased to have support from the board to begin considering the best location for Florida Lions Eye Bank's future home. We look forward to reporting our progress in upcoming publications!



Indeed, the demand for tissue for endothelial keratoplasty —what we call a “partial-thickness,” or EK, surgery, in which only the inner layers of the cornea are transplanted— is increasing across the nation. Eye banks must stay ahead of this demand in order to remain relevant, effective, and competitive. That brings me to question number two: what do eye banks need to best serve their communities? We need the support of other eye banks; a way to collaborate, share best practices, and teach one another current skills and techniques so all can continue providing tissue to patients in need.

That is why, during the 2019-2020 year, Florida Lions Eye Bank focused on developing partnerships with other nonprofit eye banks. The aim of these partnerships was to provide mutual support and professional development. One of these eye banks was at risk of closure, as they had lost their accreditation and were no longer able to provide pre-cut tissue for EK surgeries despite demand. Florida Lions Eye Bank helped this organization overhaul their ocular services program, setting them back on the path to accreditation and able provide pre-cut tissue for EK surgery. This spirit of collaboration between eye banks is the single most important thing that will help eye banks remain successful into the future.

This brings me to the third big question. When it comes to looking toward the future, Florida Lions Eye Bank, like all eye banks, must consider that the future of corneal transplantation will be cellular. That is, in the years to come, many corneal transplants will involve the grafting of lab-grown cells, rather than the transplantation of donor corneas. To that end, as Florida Lions Eye Bank plans our new facility, we intend to construct a laboratory in which human corneal cells can be grown in culture. This will enable us to remain abreast of cutting-edge technology and continue providing safe and effective corneal tissue for transplant surgeries in the decades to come. Eventually, we are confident that eye banks around the world will measure success not by corneas recovered and transplanted, but by cells grown and grafted.

As luck—whether good or bad—would have it, my presidential term did not conclude in June of 2020. Due to the COVID-19 pandemic, eye bank leadership

agreed that a change during this uncertain time would be needlessly disruptive, as well as logistically difficult. Thus, it is my honor to serve a second term as President of the Board. While COVID was and continues to be a plight for people around the world, I consider myself fortunate to have had so much time to work on long-term goals with a dedicated group of extremely qualified people. In the coming year, I look forward to setting new goals for the future of Florida Lions Eye Bank.

Finally, I would like to thank the Florida Lions Eye Bank leadership and staff for their deep-rooted commitment to our organization and to the patients that we serve. Their hard work makes it possible for us to fulfill our mission to Restore the Beauty of Sight. I would also like to thank our Board Members, of both the Eye Bank and its Foundation, for their vision and dedication as we help Florida Lions Eye Bank thrive while positioning for the future.

FLORIDA LIONS EYE BANK
BOARD OF DIRECTORS 2019-2020

President: Lion Kenneth Engstrom, PDG

Vice Presidents:

District I: Lion Robert Hilliard, PCC • District O: Lion Helen Thompson, CC • District N: Lion Geoff Wade, ID

Secretary: Lion James Campbell, 2nd VDG • *Treasurer:* Lion Joel Levenston, PVDG

Directors:

Lion Bill Arthur • Lion Felisa DeKler • Lion Robert Gentilini • Lion Elbio Gimenez, PDG •
Lion Esperanza Gomez • Lion Antonio Montes, 1st VDG • Lion Luis Olarte, PCC • Lion Karen Stowers

Immediate Past President: Lion Norma Callahan, PDG

BEAUTY OF SIGHT FOUNDATION
BOARD OF DIRECTORS 2019-2020

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Vice President: Eduardo Del Riego

Secretary: Lion Stacey W. Jones, PID

Treasurer: Lion Larry Schiff

Directors:

Lion Norma Callahan, PDG • Lion Elizabeth Dawson, PDP • Jorge Reynardus

Immediate Past President: Lion Juan Tejera, PCC

DR. RUTH GREENFIELD

MUSICIAN, ACTIVIST, EDUCATOR, CHANGEMAKER...
AND CORNEAL TRANSPLANT RECIPIENT

Longtime Miami resident Ruth Greenfield, PhD, is a gifted pianist, composer, educator, activist, and corneal transplant recipient. Ruth—now in her 90s, and able to read and play music once more since her corneal transplant in 2020—is best known for founding the Fine Arts Conservatory, one of the first racially integrated music, drama, and art schools in the South. Through her decades-long work with artists and performers of all races, ages, genders, and backgrounds, Ruth challenged segregation throughout the city of Miami, reignited interest in the arts, and sparked Miami's urban renewal.

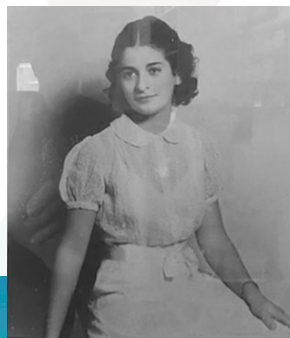


Ruth was born in Key West in 1923 and raised in Miami, which, at the time, was a deeply segregated city. Ruth's contemporary Martin Dunn, PhD, Professor Emeritus in psychology at Florida International University, details the profound degree of racial segregation in Miami in the mid-20th

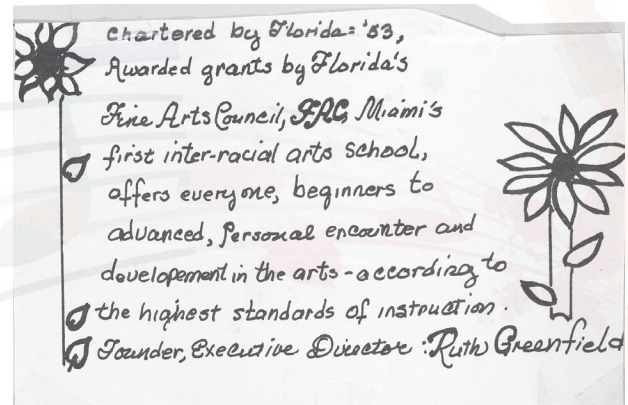
century. "Black people could not vote without fear of retribution," says Dunn. "You could not attend public places if you were a Black person: public beaches, parks, and swimming pools were not open to Blacks. Blacks could not hold certain jobs; they were not admitted to labor unions. The school system was very, very segregated." Segregation infiltrated every aspect of life in Miami, including the performing arts. Says Dunn, "For a Black [person] to be able to perform music in a public venue, this was certainly unprecedented." These injustices faced by Black people in Miami led Ruth to pursue her life's work as an educator and activist.

From a young age Ruth demonstrated an extraordinary musical talent, and passion for composing and teaching music to others. After earning her bachelor's and master's degrees from University of Michigan in Ann Arbor, Ruth returned to Miami and taught piano for a short time.

In 1949, Ruth traveled to Paris to study music with world-renowned composer, conductor, and teacher Nadia Boulanger. In Paris, Ruth observed a society that was more racially integrated than what she was accustomed to in the US.



In an interview with the Miami Herald in 2012, Ruth recalled, "When I got to Paris it was 1949, and it was so natural that everybody was mixed, and I thought, 'My gosh, what is it that I lost out on when I was younger?'" After leaving Paris, Ruth returned to Miami, motivated to do something to create social change. "I couldn't teach the way I had taught before in Miami," said Ruth about her determination to change her approach to education. "I had to open it up to anyone who was gifted, no matter what economy they were in, or what their race was."



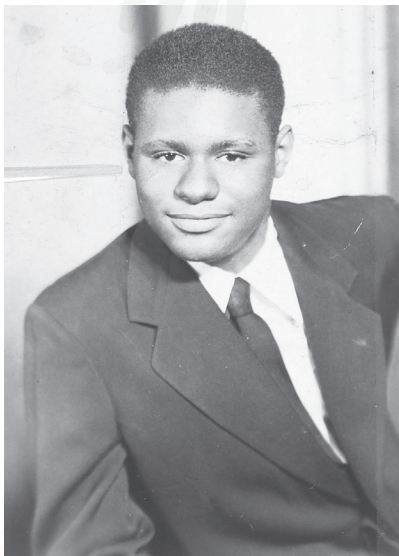
With this in mind, Ruth decided to start a home-based music and arts academy for all children, regardless of race, in Miami: this came to be known as the Fine Arts Conservatory. In 1951, Ruth placed an advertisement in the newspaper, hoping to attract talented young musicians who wanted to hone their skills. The first person to respond was a young Black man named James Ford, who, at age 13, was already composing sophisticated piano concertos. "Ruth saw me as the first student of the Fine Arts Conservatory, but I didn't understand that at the time," says Ford, who is now in his 80s and still keeps in touch with Ruth. Although James Ford had studied at The Julliard School in New



York City, he was not permitted to attend any conservatories in Miami or play in public venues due to his race. Ruth recognized James' incredible talent and vowed to not only nurture his gift, but campaign for his right to participate in public performances.

The Fine Arts Conservatory quickly became very popular with families in Miami. On Saturdays, children of all ages and every racial background gathered in ever-changing venues to study music, drama, visual art, and dance. Paul George, Professor of History at Miami-Dade college, emphasizes how strange this was given Miami's institutionalized segregation. "White and black teachers working together with white and

black kids in the early 1950s was unprecedented," says George. After operating without a dedicated location for several years, in 1960 Ruth and her husband Arnold bought a house in what is now Little Haiti. This house became the official headquarters of the Fine Arts Conservatory. "We couldn't have been more joyous. We made it into Carnegie Hall," says Ruth.



She brings out the best in her children

The lady teaching the preschool rhythm class at First Unitarian Church is Miss Mary Freeland. The fantastic thing in this enlightened year of integrated schools: this picture could have been taken FOURTEEN YEARS AGO.

For it was in 1951 that a remarkable musician named Ruth Greenfield founded the Fine Arts Conservatory for "disadvantaged children" on North West 62nd Street. The concept was similar to that of the Henry Street Settlement School.

Last year, she opened a branch school in the First Unitarian Church at South West 70th Avenue. Miss Freeland is one of her staff there. In this non-profit conservatory, instruction is given in piano, dance, drama, guitar, record



Ruth Greenfield

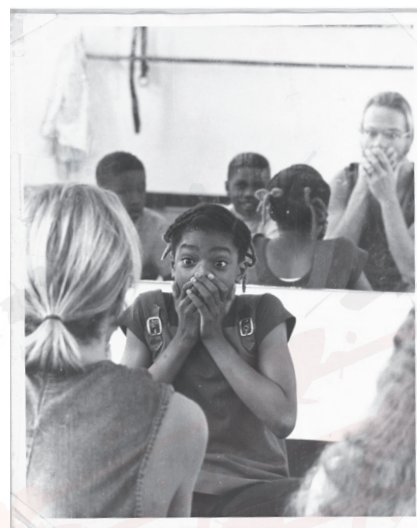
her life developing talents of children who would not have known this fulfillment. Her excellence as a musician and as a music teacher is extensively known. She is a graduate of the University of Michigan and the Sorbonne. She has a Master's Degree in Music from the University of Miami where she was a member of the music school faculty. But now she gives full time and devotion to the Fine Arts Conservatory.

er, strings and woodwind instruments. "I love my work," says Mrs. Greenfield, who could have been a concert pianist, a prolific composer or both, but instead decided to give most of

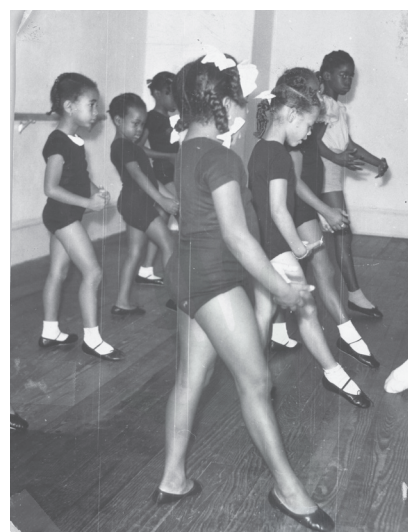
By the early 1960s, the Fine Arts Conservatory attracted not only diverse pupils, but a wide range of highly qualified instructors. The staff was aware that the Conservatory was a special place, not just for its curricula, but for its role in a society slowly embracing integration. "The Fine Arts Conservatory broke all the barriers," says Judy Drucker, a vocal teacher internationally known for bringing the likes of Luciano Pavarotti to Miami. American jazz musician Charles Austin, who taught woodwinds at the Conservatory, enrolled his daughter Sheila in Ms. Greenfield's school because it was, in his own words, "first

class." Susan Stadler, who would go on to open her own dance academy in Miami, instructed students in classical ballet. Paul Popelka, a full-time letter carrier and avid amateur musician, taught the recorder. Ruth's own four children, three boys and a girl, studied at the Conservatory alongside kids from all over the city. "Of course, I enrolled them," Ruth recalls, smiling. "It was natural."

The Fine Arts Conservatory had a far-reaching impact on many of its pupils, which Ruth reflects upon with pride. "Most of our students did not continue in the arts professionally, but it followed them all through their lives," she says. Indeed, Sheila Davis, daughter of Florida's first Black Congresswoman Carrie Meek, attended the Fine Arts Conservatory as a child. She now lives in New York City, where in 2000 she founded



the New Professional Theatre, the only African American theatre company located in the Broadway theatre district. Charles Greenfield, one of Ruth's sons, is now a professional music critic. As a child, he studied piano at the Conservatory and played it at home. His brother, Timothy Greenfield, now an acclaimed filmmaker and photographer, recalls that his brother was "a very good pianist, and still is." Timothy admits that he himself "wasn't musical," but enjoyed the visual arts curriculum the Conservatory offered. Moreover, the Conservatory provided invaluable instruction about the world around him. Says Timothy, "The influence of the Fine Arts Conservatory on my life is pro-



found because I became aware of black and white. I became aware of integration. I became aware of poverty." Years later, he cites his mother's, and the Conservatory's, influence on his life as "tremendous."

CONTINUED ON
NEXT PAGE



In 1978, the Fine Arts Conservatory disbanded. By then, many of the programs offered there had been institutionalized by the Miami-Dade school board. Around that time, Ruth began teaching at Miami-Dade College, where she would continue to teach for many more years. Her position at MDC, and the professional

relationships she made there, led to a cultural renaissance in downtown Miami.

Concerned by urban blight in downtown Miami, Ruth collaborated with Dr. Eduardo J. Padron, president of Miami-Dade college, to help open MDC's downtown campus and create public interest in downtown Miami as a destination for performance art. Inspired by public performance art in London's Trafalgar Square, Ruth understood that the arts could bring people together and revitalize urban areas. Thus, the Lunchtime Lively Arts series was born.



The Lively Arts was a free, public performance sponsored by Miami-Dade college, held every Wednesday afternoon in downtown Miami. The type of performance ranged from dance to vocal music to instrumental music to public speaking. Early performances by established professionals and emerging, avant-garde artists alike took place on the steps of the Miami courthouse, and later moved to the Maurice Gusman Cultural Center and MDC college buildings.

The Lively Arts drew enormous crowds, and, as Padron recalls, "brought people from all walks of life together." Former US Congresswoman Carrie Meek describes it as "a big cultural phenomenon."

The success of the Lunchtime Lively Arts series led to Ruth receiving a monetary grant to establish its literary counterpart, The Lively Word. This series invited well-known writers, such as Maya Angelou, Gwendolyn Brooks, and Nobel Prize winner Isaac Bashevis Singer, to read their work and engage audiences in discussion. Both the Lunchtime Lively Arts and the Lively Word continued for nearly 20 years, comprising a total of over 400 performances that attracted hundreds of thousands of people. The role these programs have had upon arts and culture in Miami cannot be understated. "The Lunchtime Lively Arts was the precursor to everything important that has happened in the arts in Miami: the book fair, the film festival, the art gallery system. Everything had a real beginning as a result of the significant impact of the Lively Arts," says MDC President Eduardo J. Padron.



In 2013, Ruth Greenfield was the subject of a documentary entitled "Instruments of Change," written, produced and directed by filmmaker Steve Waxman, with Sara Case, Julie Schecter, and Laurie Schecter credited as executive producers. This film showcases how the performing arts integrated a community and helped revitalize downtown Miami, and highlights Ruth's role as a changemaker. The history of the Fine Arts Conservatory and the Lunchtime Lively Arts series are explored in detail. The film can be viewed in its entirety, at no cost, on Youtube.

After her retirement, Ruth developed glaucoma, a common but debilitating eye disease that's one of the leading causes of blindness in Americans over the age of 60. Characterized by high internal pressure in the eye, glaucoma causes symptoms that are usually so gradual that the effect isn't noticed until advanced stages of the disease. Ruth sought treatment for her glaucoma at Bascom Palmer Eye Institute, the #1 eye hospital in the United States, and Florida Lions Eye Bank's home since 1962. There Ruth became a patient of Sander R. Dubovy, MD, a physician specializing in disorders of the eye's interior and the medical director of Florida Lions Eye Bank and ocular pathology laboratory. Ruth was impressed with the quality of care she received at Bascom Palmer, remarking, "The empathy of the staff is outstanding."

When complications of glaucoma led to problems with Ruth's corneas, Dr. Dubovy, whom Ruth describes as "a majestic doctor," referred her to Carol L. Karp, MD for treatment. Dr. Karp describes Ruth as "an incredibly vibrant senior," and notes that her patient is, "a very special, brilliant, talented person who changed the landscape of art and music in Miami." Dr. Karp recognized that Ruth might eventually need a corneal transplant but was hesitant to perform the surgery. Ruth's advanced age was a relatively minor factor; rather, Dr. Karp was concerned that Ruth's past eye surgeries for glaucoma and cataracts would complicate a corneal transplant.

Ruth and Dr. Karp agreed to delay corneal transplantation until Ruth's quality of life was limited enough to warrant the procedure. Finally, at age 96, Ruth could no longer read music, and decided she did not want to be, as she recalls, "resigned to a blind life." In June of 2020, Dr. Karp performed Ruth's partial-thickness, or DSEK, corneal transplant, replacing the innermost layers of Ruth's cornea with donor tissue supplied by Florida Lions Eye Bank. "The procedure went so smoothly!" says Dr. Karp. "I'd requested another cornea as backup, in case I needed to perform a full-thickness transplant," she says, describing the possibility that a DSEK procedure might not have worked for Ruth. Fortunately, the procedure worked well; says Karp, "I'm pleased that she is recovering beautifully."

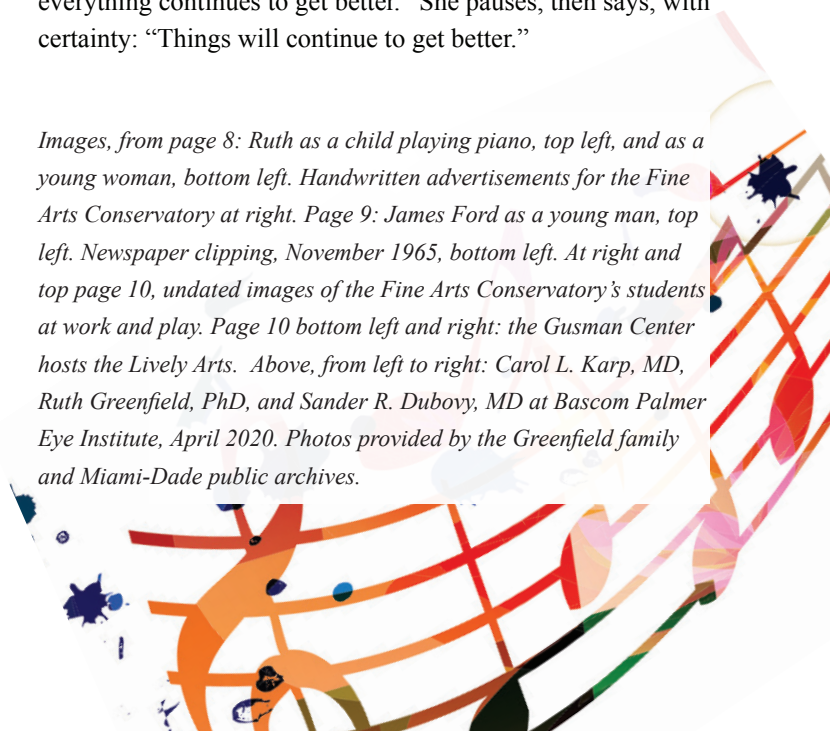
Since her corneal transplant, Ruth has become reengaged with music and community organizing. "I'm now so much more involved with everything I love doing. I can read the newspaper again. I can read music again. My corneal transplant surgery has pulled me further into what I want and need to do. My life is made up of music," says Ruth. With her son's help, she plans



to film a showcase of new and young performing artists from South Florida to be distributed online to a broad audience. "A lot of talented people have been hidden due to this virus," says Ruth, reflecting on the COVID-19 pandemic. "This will be like a salon series, where we'll film local singers, instrumentalists, and dancers." The working title of this project is "The Late Lunchtime Series," a nod to Ruth's earlier projects. Ruth, who still plays piano and composes music, will perform.

When asked what she hopes for the future, Ruth says, "I'd like to see predominately Black public schools receive more funding so they can improve their buildings and programs. Many schools with majority Black students aren't considered a priority, and that's not right. But I will say, integration, inclusivity, and representation have come so far during my lifetime. I hope everything continues to get better." She pauses, then says, with certainty: "Things will continue to get better."

Images, from page 8: Ruth as a child playing piano, top left, and as a young woman, bottom left. Handwritten advertisements for the Fine Arts Conservatory at right. Page 9: James Ford as a young man, top left. Newspaper clipping, November 1965, bottom left. At right and top page 10, undated images of the Fine Arts Conservatory's students at work and play. Page 10 bottom left and right: the Gusman Center hosts the Lively Arts. Above, from left to right: Carol L. Karp, MD, Ruth Greenfield, PhD, and Sander R. Dubovy, MD at Bascom Palmer Eye Institute, April 2020. Photos provided by the Greenfield family and Miami-Dade public archives.



THE SPECTRALLY ADJUSTABLE OCULAR PHOTOSENSITIVITY ANALYZER

A GROUNDBREAKING INSTRUMENT TO TREAT
AND DIAGNOSE PHOTOPHOBIA

Photophobia literally means “fear of light.” A person suffering from photophobia isn’t actually afraid of light, but their eyes can be very sensitive to it. This can happen to people who’ve had a brain injury, or those afflicted by dry eyes, cataracts, and other ailments affecting the visual pathway. Sunlight or bright indoor light can be uncomfortable, even painful, for a person with photophobia, leading to an inability to carry out normal activities such as reading, driving, or simply spending time outdoors.

Photophobia is also difficult to measure. Alex Gonzalez of the Bascom Palmer Ophthalmic Biophysics Center (OBC), a facility dedicated to translational research that directly benefits patient eye care, states, “There is no tool used in a clinical setting that can quantitatively diagnose photophobia.” Gonzalez continues, “If you were to go to the ophthalmologist and say, ‘I’m suffering from photophobia,’ the doctor is going to shine a flashlight in your eyes. You might be able to say, ‘That hurts,’ but your doctor wouldn’t be able to measure how much the light bothered you.”

Jean-Marie Parel, PhD, director of the OBC, recognized the need for an instrument to aid in the diagnosis and measurement of photophobia, and Florida Lions Eye Bank was excited to lend our support. With funding from Beauty of Sight, the Florida Lions Eye Bank Foundation, and others, Parel and his team developed the Spectrally Adjustable Ocular Photosensitivity Analyzer. This instrument, called saOPA for short, exposes a patient to different lighting conditions and records the patient’s reaction to these light stimuli. The saOPA produces an illumination spectrum matching sunlight at dawn, noon, and dusk, including moon light, and at various room lightings. The OBC’s goal in creating the saOPA is to explore how light sources with varying spectrum can impact visual photosensitivity: that is, how different types of light feel to the eyes of people suffering from photophobia.

To better understand what the saOPA does, it helps to understand how it’s used. A subject—usually a patient being evaluated or treated for photophobia—sits in front of the saOPA with their head in a fixed position, as shown at center. While the subject looks at the saOPA, the instrument shows different intensities of light to the subject. After each intensity of light is shown, the subject, who is holding a clicker, clicks to indicate discomfort. Three infrared video cameras on the saOPA capture images of the subject’s right eye, left eye, and entire face 60 times per second.

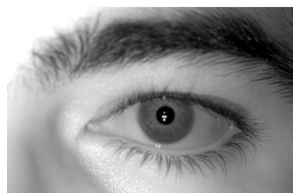
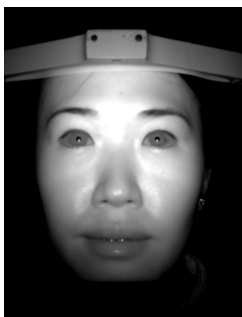
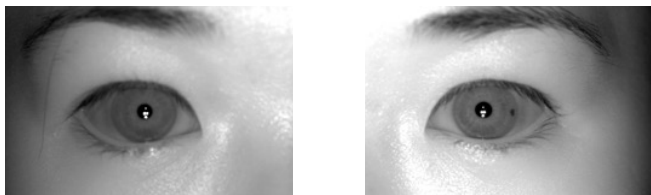


The infrared cameras are able to capture images whether the saOPA’s lights are on or off, and do not interrupt or change the light being shown to the subject, potentially altering their response to the test. The images captured provide important information such as pupillary constriction, squinting, blink rate, and facial expression. Parel and his team believe that a person’s facial expression and reflexes, such as grimacing, squinting, and closing

eyes, are an important indicator of discomfort due to photophobia. If a patient doesn’t click the button to indicate discomfort, but squints and grimaces, this can reveal unreported discomfort.

The test administered by the saOPA is computer guided, and the intensities of light are randomized; light intensity does not necessarily increase or decrease after a subject indicates discomfort, and a light is shown to a subject more than once during a test to see if they have the same response to the light each time. This was an intentional choice made by Parel and his team in order to gauge the test subject’s reliability and consistency in reporting discomfort. Explains Gonzalez, “It’s very subjective when someone says that something bothers them, and a person’s response can be influenced by others around them.” A technician administering a photophobia test might see the subject squinting or grimacing, and say, in a sympathetic tone of voice, “Does this

bother you?” This can confound the test results. Gonzalez continues, “We thought, let’s take the human element out of it and automate the saOPA to obtain the most reliable and consistent results possible.”



The saOPA was originally created for Byron L. Lam, MD, neuro-ophthalmologist at Bascom Palmer Eye Institute, for his treatment of achromatopsia patients. Achromatopsia is an inherited retinal condition causing partial or total absence of color vision along with extreme light sensitivity and reduced visual acuity. Patients with this genetic disorder may have adequate night vision but need very dark sunglasses to walk outside during the day, due to the blinding sunlight. This early model of the saOPA was used in conjunction with gene therapy administered by Dr. Lam to help him assess how well treatment for photophobia was working. It showed different intensities of LED light to patients and asked them to report their discomfort level. In terms of diagnostic capability, this was groundbreaking. Gonzalez explains, “If you’re being treated for photophobia, how do you gauge if you’re getting better or not, without a tool to measure your reaction to light?” The saOPA addressed this problem in Dr. Lam’s patients.

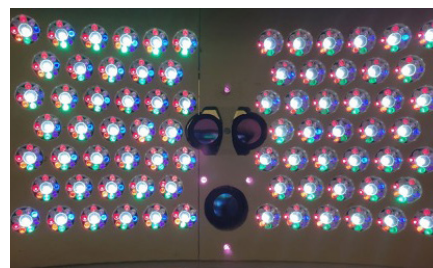
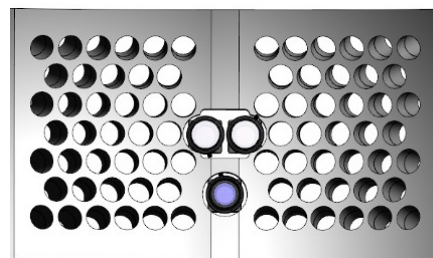
Through its use in clinical applications with Dr. Lam’s achromatopsia patients, Parel and his team at the OBC observed ways to improve the accuracy and versatility of the saOPA. Parel reasoned that certain diseases might affect the type of light that triggers photophobia, and in response, refined the saOPA’s features and capabilities. The updated saOPA, shown in the images

here, reproduces different types of light environments using 78 small light fixtures, called miniFlowers. Each miniFlower holds nine light-emitting diodes, able to emulate natural sunlight, indoor lighting such as incandescent and halogen light, and different colors of light, rather than only the LED light displayed by the earlier model.

These improvements to the saOPA led to the instrument being used to diagnose and evaluate photophobia in patients with disorders other than achromatopsia. The saOPA is currently being used to evaluate and treat patients with traumatic brain injuries. Mariela Aguilar, Director of Research Operations at the OBC, explains that the updated saOPA aims to evaluate whether filtering light would reduce photophobia symptoms and improve quality of life among patients with brain injuries. Says Aguilar, “The saOPA will help us investigate potential treatments of photophobia in civilian and military patients who have suffered traumatic brain injury. One area of focus is exploring how customized light-filtering eyewear can alleviate photophobia symptoms and improve quality of life.”

At present, there is only one saOPA, located at the Ophthalmic Biophysics Center in Miami, but Dr. Parel and his team hope to create others. “We’d like to have many saOPA babies,” jokes Parel, who, despite his sense of humor, is serious about helping as many photophobia patients as possible. Florida Lions Eye Bank is thrilled to partner with the Ophthalmic Biophysics Center on this exciting innovation, and we look forward to the future of the Spectrally Adjustable Ocular Photosensitivity Analyzer.

Images, from page 12: A subject seated in front of the saOPA, clicker in hand. This page, opposite, top: right and left eyes of a female subject as shown by the infrared cameras on the saOPA, and the female subject’s face, middle left. Middle right: a male subject’s face as shown by the saOPA’s infrared cameras, and his right and left eyes below. At right, top: the frame of the saOPA that holds the miniFlowers.



The three infrared cameras are seen in the center. Bottom: the miniFlowers are illuminated. The nine diodes in each miniFlower produce different colors of light.

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- **Beauty of Sight for Children:** Gives a free plush toy to every child having surgery at Bascom Palmer Eye Institute.
- **Research Program:** Allocates funds to ophthalmic researchers working to prevent or cure blindness or visual impairment. Since May of 2020 this has included a significant budget allocated to support COVID-19 research, with the goal of discovering the virus's impact on ocular tissue and vision

To find out more about Beauty of Sight Foundation's Legacy Program, visit www.beautyofsight.org



Miami's First Interracial School Begins 13th Year

The Fine Arts Conservatory, Florida's first interracial music, drama and art school, opens its doors this Saturday, Sept. 26 for the 13th year in the community.

Founded in 1953, its founder-director, Ruth Greenfield, is proud to announce that there will now be two schools operating on Saturday. The North main building at 615 NW 60th St. now has a south branch. Classes will be held there at the First Unitarian Church for the convenience of those who live in the Coconut Grove and further south areas. Both schools will register students in music, dance and art from 9 a.m. tomorrow.

Outstanding feature of this unique, non-profit school is its faculty of artist-teachers. On hand to greet the students will be musicians Robert Thomas, Olga Martinez, Charles Mobley, William Hanna, Paul Polpeka and Dancer Julia Molnar



A Service to The Community . . . First Integrated School Celebrates Its Tenth Anniversary In The Arts

The Fine Arts Conservatory of 615 NW 60th St. begins its 10th anniversary year when it opens for registration Oct. 5. Many people do not know of this first integrated school in Florida to remain alive through the controversial and apartheid years.

In 1953 a 13-year-old boy, home from a successful summer's study at New York's Juilliard School of Music, found studios of advanced study in piano open to his qualifications but closed to his color.

A group of musicians, artists, clergymen, educators and civic leaders were beginning to hold meetings for the purpose of opening a center for the creative arts, available to all people regardless of color or creed. On that original board were Kenneth Oka, Burnett Roth, Leo Huberman, Harold Tannen, Kelsey Pharr, Revs. Edward T. Graham and Eugene Peckett, Charles Philhour, Mary Ford Williams, Mary McGary Arnold Greenfield and Ruth Greenfield, founder and director.

The young man was the first student at this center when it opened upstairs over the Pharr Funeral Home on 2nd Ave.

By 1953, FAC was under the statutes of the State of Florida as a non-profit school for the creative arts. Open to all. This was when the struggle began.

This fall, marking its 10th year of operation, the fine arts school is in its own home.

Until two years ago it had been an orphan skipping from place to place — a masonic hall, a funeral home, the YMCA. Each place was limited in accommodation, but never the training the children received.

Both faculty and body are integrated with instructors from the University of Miami and Dade Junior College. Enrollment number approximately 50.

In 1961 FAC moved to its own property. Here in an old house with a beautiful tree, just off the commercial section at 615 NW 60th St., it is the scene of classes in piano, clarinet, violin, music history, theory, dance and art.

Visitors are welcome each Saturday. One can then visualize the arts in action and the vital role this school should play in the community.

The partial faculty list consists of Mrs. Ruth Greenfield, founder-director, B. Mus., M. Mus., University of Michigan; Olga Martinez, graduate of Conservatorio de Henrique Masierra, Havana, Cuba; Robert Thomas, B.S., M.S., M. Mus., Southern Illinois; Julia Molnar, protégée of Vjale Fokine at Carnegie Hall; Sherrin Simonhoff, B.A. cum laude in fine arts, Brandeis University.



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Fine Arts Conservatory Fla.'s First Integrated School

Eleven years ago Florida opened its first integrated school. The Fine Arts Conservatory, founded and directed by musician Ruth Greenfield in 1952, began its teaching of piano in the Brownsville Lodge. Several years later it held studios above Pharr's Funeral Home, and then two years later was invited to the Carver Branch of the YMCA. After its 10th year as a non-profit community school with an integrated staff and student body, it finally moved to its own quarters at 615 NW 60th St. Today classes in piano, woodwinds, percussion, voice, music theory and all phases of dance (ballet, Jazz, Modern) are taught on Saturdays and by an appointment during the week.

Recently the dance-voice troupe of the Conservatory gave a show at the Fontainebleau Hotel for the Cancer Society

luncheon. All monies received for benefit performances go to scholarships for worthy students and improving the present building. Along with Mrs. Greenfield and secretary, Mrs. Doris Williams, dedicated citizens such as Mesdames Mary Ford Williams, Schatzi Kassel, Dorothy Graham, Dr. Kelsey L. Pharr have worked through these many years on its behalf. Everyone is welcome to visit and see the students "at work in the Arts" any Saturday morning. Moderate fees are charged for lessons; and there are scholarships for deserving students.



Fine Arts Conservatory is cooperating with other community agencies, organizations and institutions in developing new programs in the cultural arts. Scholarships have been given to students by the Girl Scout Council of Tropical Florida and the Model City agency. The school is represented on the Model City Cultural Arts Task Force, the Edison Little River P.A.C., and the Youth Planning Council of the Greater Miami Coalition. Developmental projects are being planned with the North Central District of the Dade County Public Schools, the Senior Centers of Dade County, and Dade Community College, North Campus, Division of Community Services.

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