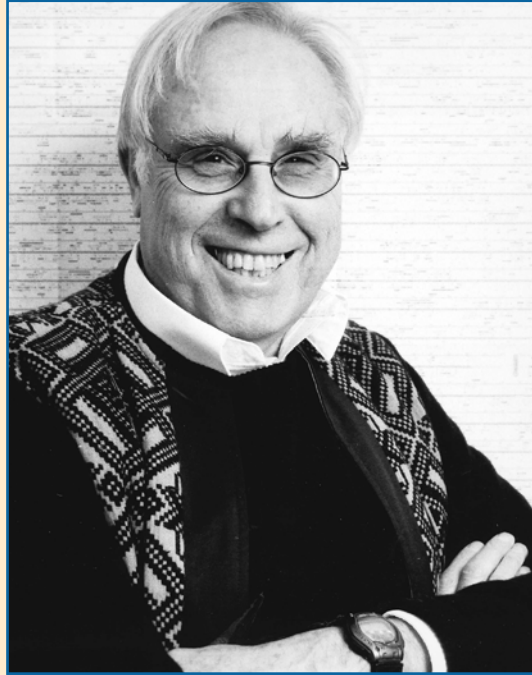# afar

american federation for
AGING RESEARCH

2022
ANNUAL
REPORT

Furthering

IN MEMORIAM

AFAR dedicates this annual report to the late George M. Martin, MD.

Dr. Martin joined AFAR's Board of Directors in 1995 and was elected Scientific Director in 2003, a position he served in for some 10 years, overseeing AFAR's scientific and grant programs. He received AFAR's Irving S. Wright Award of Distinction in 1996 and Honorary Leadership Award in 2015.

In the February 2023 issue of the journal *GeroScience*, AFAR Interim Board Chair and Senior Scientific Director Steven N. Austad, PhD, authored a tribute to Dr. Martin, noting: "A list of honors and accomplishments does not begin to capture the person or the impact of George Martin...He was encouraging, gracious with praise— always eager to promote his students and collaborators, never seeking credit for himself."

AFAR is deeply grateful for George M. Martin's long-time support and vision, not just for our organization but for the field at large.

FURTHER, TOGETHER

For more than four decades, AFAR has built the field of aging research by supporting a network of investigators working nationwide and around the globe to understand the biological processes of aging. Today, AFAR's core scientific programs provide the foundation for a range of new collaborations and strategies to further the field at large. Biomedical researchers have a deep understanding of how the biology of aging impacts the biology of common age-related diseases—from cancer to diabetes and Alzheimer's—and are working to advance therapeutics that will extend our years of health and vitality by targeting this biology.

This report highlights three strategic initiatives that broke or gained new ground in 2022. These distinct but interconnected efforts further the field of aging research through a focus on people (the SuperAgers Initiative), biology (the FAST—Finding Aging biomarkers by Searching existing Trials—Initiative), and education (the Amplifying Geroscience Initiative).
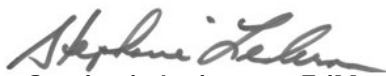
AFAR is proud to serve as catalyst, connector, and convener for each of these initiatives, which bring together leaders from across private, public, and philanthropic sectors who, like AFAR, are dedicated to innovative, scientifically grounded approaches to healthy aging.

AFAR's position as a trusted collaborator is further seen in our infrastructure support and leadership for three NIA-funded programs: the Nathan Shock Centers Coordinating Center (NSC3), the Research Centers Collaborative Network (RCCN), and the Clinician-Scientists Transdisciplinary Aging Research (Clin-STAR) Coordinating Center.

These broad-reaching projects are rooted in AFAR's funding of individual research projects through our core grant programs. AFAR brings a proven track record of investing early in the most promising ideas with the foresight to ask what's needed next.

Just as AFAR's support is furthering the field through this work, the support of our funders and partners allows AFAR to apply resources with fiscal responsibility, which assures that nearly 94% of funds contributed go directly to supporting research. We are grateful for the dedication and generosity of our donors.

With tenacity and dependability, AFAR strives to further our mission to advance and support healthy aging through biomedical research. With creativity and connectivity, our grant programs and strategic initiatives further the field. We are excited to see how and where advances in geroscience will go to further help us all live healthier, longer.

Stephanie Lederman, EdM
Executive Director

Steven N. Austad, PhD
Interim Chair and Senior Scientific Director

FAST
Initiative

Shorthand for "biological marker," a biomarker is a measured trait that can be used to predict a subsequent or later event, such as disease. For instance, high LDL-cholesterol is a pretty good predictor of later cardiovascular disease.

With respect to aging, a biomarker of aging would be a trait that is causally involved in contributing to later-life health. Such markers would reliably reveal biological age as contrasted to chronological age, and researchers have sought them for years.

The Finding Aging biomarkers by Searching existing Trials (FAST) Initiative aims to determine which targeted biomarker approaches are feasible yet innovative enough to advance development of aging biomarkers for clinical trials in aging.

IMPACT OF AFAR

AFAR Scientific Director Nir Barzilai, MD, envisioned FAST in order to fill a gap in the field at large. AFAR secured funding from the Astera Institute, which supports novel scientific research and develops high leverage technologies that can lead to significant returns for humanity.

IMPACT ON THE FIELD

Identifying reliable biomarkers for aging would greatly accelerate aging research. The ability to test interventions that target the biology of aging is dependent upon a way to determine if any single intervention is having an impact on the underlying process of aging—not just whether it has an effect on one of the body's systems, such as affecting blood pressure or cholesterol levels.

"The question is how fast can we advance our ability to use biomarkers that we know of, or ones we have yet to discover, to make them more valuable in clinical trials. This tends to be a challenge for every field. For any condition, what you want is a rapid, specific, sensitive, reliable, reproducible test—which could be a blood test or even something simpler—that tells you if your therapy is working," notes Thomas A. Rando, MD, PhD, AFAR President-Elect. "In aging, it's really an evolution of ever-improving biomarkers for the things we want to measure. Perhaps a clinical trial might discover you need a composite score of five biomarkers to constitute an aging scoring system. That's what FAST will help figure out."

Biomarkers are critical to the development of geroscience, as they provide a way of testing the efficacy of various interventions on the biological mechanisms that are central to the processes of aging and age-related diseases.

Now in phase one, FAST is in the process of developing a large-scale partnership with existing academic research and clinical trials while building relationships with biomarker trial leaders in the private sector.

Notes FAST Scientific Advisory Board member Kristen Fortney, PhD, CEO and Co-Founder of BioAge Labs: "The most important aspect of the FAST Initiative is its potential to meet the need for useful biomarkers to drive the field forward. That's what's been lacking—the ability to actually track biomarkers for aging in a human population. Building this resource will open up the whole field in the future."

IMPACT ON OUR LIVES

The field of aging research is at a critical juncture in terms of showing that all of its work can be applied to practical and timely effect for the population at large. Biomarkers are important because up until now, aging research has had to wait a long time to show its impact, because the only way to show impact was to wait for research subjects to age and grow ill. The FAST Initiative will help research move into clinical translation safely and efficiently, helping usher in a new era of therapeutic interventions to extend healthspan.

"For any condition, what you want is a rapid, specific, sensitive, reliable, reproducible test—which could be a blood test or even something simpler—that tells you if your therapy is working... In aging, it's really an evolution of ever-improving biomarkers for the things we want to measure."

- **Thomas A. Rando, MD, PhD, AFAR President-Elect;** Director of the Eli and Edythe Broad Center of Regenerative Medicine and Stem Cell Research and Professor, Neurology and Molecular, Cell and Developmental Biology at the University of California, Los Angeles

Amplifying Geroscience Initiative

Over the past decade, geroscience has been gaining momentum in the field of aging. This visionary paradigm posits that since the biology of aging plays a major role in many — if not all — chronic diseases, therapeutically addressing aging physiology directly will prevent the onset or mitigate the severity of multiple chronic diseases.

Yet few national leaders and decision-makers grasp the true power of this ground-breaking approach.

AFAR launched the Amplifying Geroscience Initiative to educate policymakers about the potentially transformative benefits of geroscience on the health of both citizens and the economy.

IMPACT OF AFAR

Building on decades of relationships across the private and public sectors, AFAR was uniquely positioned to evolve the conversation around support for geroscience. In 2021, AFAR received funding from James Fickel and The Fickel Family Foundation and the Schmidt Futures Foundation to begin this work, and AFAR engaged Cornerstone Government Affairs consultancy to help guide our efforts.

The 2022 strategy centered around two key areas: building key relationships within the executive branch and drafting and garnering congressional support for appropriations language in the FY2023 NIH/NIA and FDA budgets. This kicked-off with a large meeting with the NIA in January of 2022 and a key meeting with Senator Bob Casey (D-Pennsylvania), who leads the Senate Aging Committee.

In March 2022, AFAR organized a non-partisan "Hill Day" to introduce geroscience and aging research to members of Congress and their staff through 20 meetings with AFAR-affiliated researchers (including grantees and Board members) across 15 states, specific to key regions of the federal leaders.

In September 2022, AFAR Board members Laura Niedernhofer, MD, PhD, and S. Jay Olshansky, PhD, were invited to speak before the U.S. House of Representatives Committee on Science, Space, and Technology through the Subcommittee on Investigations and Oversight at a special Hearing Charter, "The Fountain of Youth? The Quest for Aging Therapies."

IMPACT ON THE FIELD

The field of aging research, as well as disease-specific research, can benefit from geroscience. Federal funding for aging research traditionally has remained separate from disease research funding. Increasing funding for geroscience funding should not come at the cost of decreasing funding for diseases, experts emphasize.

The interconnected nature of geroscience can also help improve: training of physician scientists to lead clinical trials in older adults; sharing of biospecimens and data; facilitating both the collection and dissemination of information across diverse demographics; and furthering research into aging biomarkers.

IMPACT ON OUR LIVES

As Dr. Niedernhofer shared before Congress: "A geroscience approach is anticipated to affect the health of the elderly to a greater extent than curing any single disease of old age, including curing Alzheimer's disease or cancer. Importantly, geroscience aims to extend how long individuals are healthy, not how long they live."

AFAR's Amplifying Geroscience Initiative has made a noticeable impact to date. On December 23, 2022, Congress passed a $1.7 trillion fiscal year 2023 spending package that funds the federal government through September 2023. As part of the funding bill, Congress included report language that provides informal recommendations for opportunities across the NIH, NIA, and FDA to strengthen the foundation of knowledge and support for geroscience.

"Aging research is an underfunded field overall and geroscience work is definitely capital constrained," explains Amplifying Geroscience supporter James Fickel. "Yet it makes so much more economic sense to be targeting healthcare at the level of aging mechanics as opposed to end-of-life diseases."

"A geroscience approach is anticipated to affect the health of the elderly to a greater extent than curing any single disease of old age...Geroscience aims to extend how long individuals are healthy—not how long they live."

- Laura Niedernhofer, MD, PhD, AFAR Board Member; Director, Institute on the Biology of Aging & Metabolism and Medical Discovery Team on the Biology of Aging at the University of Minnesota

SuperAgers Initiative

What does it take to live a long, healthy life? This critical question underpins biomedical science today, yet most research focuses on preventing or treating individual age-related diseases. Surely important work, but why not examine what enables some of us to live healthier, exceptionally long lives?

The SuperAgers Initiative is a bold effort designed to do just that—understand the underlying genetics and biology of individuals who have generally lived long, healthy lives with much less disabling disease than the larger population.

Led by AFAR and Albert Einstein College of Medicine, in collaboration with Boston University School of Medicine, and with funding from James Fickel and the Fickel Family Foundation, the initiative's centerpiece is the SuperAgers Family Study. This pathbreaking research project is seeking assistance from as many as 10,000 people who have celebrated their 95th birthdays—as well as their children, many of whom are on course to become SuperAgers themselves.

IMPACT OF AFAR

The SuperAgers Initiative is rooted in AFAR's support of innovative researchers. The idea came from physician-scientist Dr. Alan Shuldiner, Vice President of Regeneron Genetics Center, who received his first-ever research grant from AFAR in 1995—a Paul B. Beeson Career Development Award. He met and bonded with two other young AFAR grantees in that year's cohort, who, like Shuldiner, have become leaders in the field and are now close collaborators with him in the initiative: Dr. Thomas Perls, Director of the New England Centenarian Study at Boston University, and Dr. Nir Barzilai, Director of the Institute for Aging Research at Albert Einstein College of Medicine and AFAR's Scientific Director.

Decades later, these early discussions and ongoing findings from their collective work blossomed into a new proposal for an expansive study. Dr. Shuldiner says, "It was natural for us to look to partner with AFAR. It has a national and international footprint that is so important for outreach to other researchers and our ability to recruit 10,000 individuals 95 years and older."

2015 AFAR Beeson Scholar Sofiya Milman, MD, MS, Director of Human Longevity Studies at Einstein's Institute for Aging Research, is the Principal Investigator for the SuperAgers Family Study. AFAR also manages a Scientific Advisory Committee and strategic outreach team for the initiative and study.

IMPACT ON THE FIELD

For decades, only a handful of research studies, such as Dr. Perls's Centenarian Study and Barzilai and Milman's Longevity Genes Project at Einstein, were dedicated to examining the genes of centenarians in specific regions or demographics. When looking at the genes that allow for such a long healthspan, researchers need a significant number of individuals to study, as each person's genetic footprint holds at least 20,000 genes. The new SuperAger Family Study builds upon these ongoing studies by searching for genes that predispose to long life in a family triad of the individual age 95 or older, their adult child, and the child's spouse. The sheer ambition of the study's goal to enroll 10,000 participants—the largest cohort of SuperAgers and their family members ever gathered—is key to its future success.

"Amassing a data set of this magnitude should allow the identification of genetic, biological, and behavioral factors that affect aging and its related diseases," notes Barzilai. "The good news for the next generation of investigators is that this information will not only help the field right away, but also will be preserved in a bio-bank for decades of future research."

Participants' names and identifying information will never be given but researchers can apply for permission to use the specimens and information for new studies to prevent, diagnose, or treat diseases.

IMPACT ON OUR LIVES

Since launching in late 2022, the SuperAgers Family Study is now actively enrolling participants. Participants are already on board and providing their DNA, medical history, diet, and lifestyle information. All data collection is done via an online platform, developed and managed by Vibrent Health, that makes it easy and accessible for anyone to participate. Identifying the genes that may affect longevity, however, is only a first step. Ultimately, the multi-year project will help develop and fast-track new therapies that target the aging process itself and serve as a "discovery database" useful in clinical trials on a wide variety of age-related diseases and conditions.

"The SuperAgers Initiative and Family Study are valuable because this research helps to improve not just the quantity of life, but the quality of life for older adults," notes Milman.

"The SuperAgers Initiative and Family Study are valuable because this research helps to improve not just the quantity of life, but the quality of life for older adults."

- Sofiya Milman, MD, MS, Principal Investigator, SuperAgers Family Study; Director of Human Longevity Studies, Albert Einstein College of Medicine

"A slowdown in aging that increases life expectancy **by 1 year** is worth **US $38 trillion,** and **by 10 years, US $367 trillion.**"

— Scott, A.J., Ellison, M. and Sinclair, D.A.
"The economic value of targeting aging,"
Nature Aging, 2021

2022 GRANT PROGRAMS & COMMITTEES

To date,
AFAR has awarded
more than $193 million
to nearly 4,350
talented investigators

BIOLOGY OF AGING GRANT PROGRAMS

AFAR's Biology of Aging grant programs fuel the pipeline of researchers working to understand the basic biology of aging and age-related diseases in order to extend our years of health and decrease periods of sickness. Several grant programs help early career scientists acquire the knowledge, skills, and experience needed to obtain higher-level grants as they build a body of research. As critical are grants tailored to mid-career and senior investigators, which allow them to remain focused on aging as they expand their research programs. AFAR's 2022 Biology of Aging grants portfolio included:

- Glenn Foundation for Medical Research Breakthroughs in Gerontology (BIG) Awards

- Glenn Foundation for Medical Research and AFAR Grants for Junior Faculty

- Glenn Foundation for Medical Research Postdoctoral Fellowships in Aging Research

- Hevolution/AFAR New Investigator Awards in Aging Biology and Geroscience Research

- McKnight Brain Research Foundation Innovator Awards in Cognitive Aging and Memory Loss

- The Sagol Network GerOmic Award for Junior Faculty

- Diana Jacobs Kalman/AFAR Scholarships for Research in the Biology of Aging

SCIENTIFIC REVIEW PROCESS

AFAR's rigorous grant reviews help ensure that only the most promising scientific ideas and investigators receive our support.

Members of our Scientific Review Committees are accomplished scientists representing a wide range of expertise in biomedical research on aging. Many are also past AFAR grantees, and they play an important role in identifying the talent and research that AFAR supports.

Each year, they volunteer their time and expertise to review hundreds of grant applications and select scientists and research projects that have the greatest likelihood of making significant contributions to help us stay healthier longer as we grow older.

The Chairs and Members of our 2022 Review Committees are listed with their respective grant programs on the following pages.

Additionally, AFAR National Scientific Advisory Council (NSAC) members lend their scientific expertise to our grant review process.

We are grateful for our reviewers' contributions, which are essential to the success of AFAR's grant programs.

For a complete list of AFAR's 2022 Scientific Committee members, please visit: www.afar.org/scientific-committees

GLENN FOUNDATION FOR MEDICAL RESEARCH BREAKTHROUGHS IN GERONTOLOGY (BIG) AWARDS

Edward Chouchani, PhD
Associate Professor
Dana-Farber Cancer Institute

Omer Yilmaz, MD, PhD
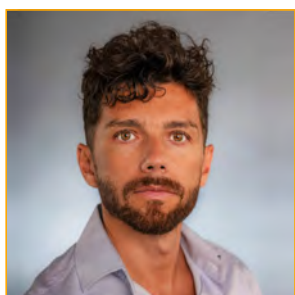Associate Professor
Massachusetts Institute of Technology

GLENN FOUNDATION
FOR MEDICAL RESEARCH

AFAR is grateful to the Glenn Foundation for Medical Research for its support of this grant program.

Selection Committee

Sofiya Milman, MD, MSc, *Chair*
Einstein College of Medicine

Darren Baker, PhD
Mayo Clinic

Veronica Galvan, PhD
University of Oklahoma Health Sciences Center

Vera Gorbunova, PhD
University of Rochester

William Mair, PhD
Harvard T.H. Chan School of Public Health

"AFAR provides an invaluable contribution to the field of aging research by investing in discovery science directed at fundamental questions about the causes of age-related decline. With so much to discover in this space, research like ours will be particularly enabled by this AFAR grant that allows us to explore new and innovative approaches to understand aging."

- Edward Chouchani, PhD
2022 BIG Award recipient

"I have always been fascinated by the question of how aging reduces adult tissue function, including the role of adult stem cells in this process, and whether these changes are reversible. Addressing aspects of this question in aged mice and human intestines by developing dietary strategies and organoid technologies is a major interest of my lab."

- Omer Yilmaz, MD, PhD
2022 BIG Award recipient

GLENN FOUNDATION FOR MEDICAL RESEARCH AND AFAR GRANTS FOR JUNIOR FACULTY

Albert Almada, PhD
Assistant Professor
University of Southern California

Ying Ann Chiao, PhD
Assistant Member
Oklahoma Medical Research Foundation

Anthony Joseph Covarrubias, PhD
Assistant Professor
University of California, Los Angeles

Carlos Manlio Díaz-García, PhD
Assistant Professor
University of Oklahoma Health Sciences Center

Ilia Droujinine, PhD
Scripps Research Fellow and Principal Investigator
Scripps Research

Ryo Higuchi-Sanabria, PhD
Assistant Professor
University of Southern California

Kevin Murach, PhD
Assistant Professor
University of Arkansas

Juan Pablo Palavicini, PhD
Assistant Professor
UT Health San Antonio

Daniel Roh, MD, PhD
Assistant Professor
Boston University School of Medicine

Noga Ron-Harel, PhD
Assistant Professor
Technion

Judith Simcox, PhD
Assistant Professor
University of Wisconsin-Madison

Selection Committee

Dena Dubal, MD, PhD, *Chair*
University of California, San Francisco

Catherine Kaczorowski, PhD
The Jackson Laboratory

Dudley Lamming, PhD
University of Wisconsin-Madison

Daniel Promislow, PhD
University of Washington

Amy Wagers, PhD
Harvard University

Jonathan Wanagat, MD, PhD
University of California, Los Angeles

GLENN FOUNDATION FOR MEDICAL RESEARCH
POSTDOCTORAL FELLOWSHIPS IN AGING RESEARCH

Matthew Bubak, PhD
Postdoctoral Fellow
Oklahoma Medical Research Foundation

Chatrawee Duangjan, PhD
Postdoctoral Scholar
University of Southern California

Silvana Duran-Ortiz, PhD
Postdoctoral Research Fellow
Ohio University

Yasar Arfat Kasu, PhD
Postdoctoral Fellow
University of California, San Diego

Ekaterina Korotkevich, PhD
Postdoctoral Scholar
University of California, San Francisco

Daniel Levine, PhD
Postdoctoral Scholar
University of California, San Francisco

Heidi Pak, PhD
Postdoctoral Researcher
University of Texas Southwestern

Ines Sturmlechner, PhD
Postdoctoral Research Fellow
Mayo Clinic

Binsheng Wang, MD
Postdoctoral Fellow
University of Connecticut Health Center

Selection Committee

Ashley Webb, PhD, *Chair*
Brown University

Hua Bai, PhD
Iowa State University

Bérénice A. Benayoun, PhD
University of Southern California

Jennifer Garrison, PhD
Buck Institute for Research on Aging

Scott Leiser, PhD
University of Michigan Medical School

GLENN FOUNDATION
FOR MEDICAL RESEARCH

AFAR is grateful to the Glenn Foundation for Medical Research for its support of this grant program.

"AFAR is well known for supporting scientists, in particular young- to mid-career scientists, to help them conduct meaningful basic and translational research. AFAR helps set the course and direction of aging research, highlighting critical advances essential to the field. To me, the AFAR fellowship is not only an affirmation of my research findings thus far, but also an immense impetus to continue pursuing my goals as a scientist in the field of aging. This award is an inspiration for my future."

- Silvana Duran-Ortiz, PhD
2022 Postdoctoral Fellow

HEVOLUTION/AFAR NEW INVESTIGATOR AWARDS IN AGING BIOLOGY AND GEROSCIENCE RESEARCH

Samuel Beck, PhD
Associate Professor
Boston University School of Medicine

Charlotte Cecil, PhD
Associate Professor
Erasmus University Medical Center

Marco Demaria, PhD
Associate Professor
European Research Institute for the Biology of Ageing

Zhixun Dou, PhD
Assistant Professor
Massachusetts General Hospital

Peter Douglas, PhD
Assistant Professor
University of Texas Southwestern Medical Center

Nir Eynon, PhD
Group Leader
Monash University

Aditi Gurkar, PhD
Assistant Professor of Medicine
University of Pittsburgh

Diana Jurk, PhD
Associate Professor
Mayo Clinic

Adam Konopka, PhD
Assistant Professor
University of Wisconsin-Madison

Sailendra Nichenametla, PhD
Associate Scientist
Orentreich Foundation for the Advancement of Science

Miranda Orr, PhD
Assistant Professor
Wake Forest University School of Medicine

Daniel Roh, PhD
Assistant Professor
Boston University School of Medicine

Markus Schosserer, PhD
Junior PI
Medical University of Vienna

Kosaku Shinoda, PhD
Assistant Professor
Albert Einstein College of Medicine

Marlene Starr, PhD
Associate Professor
University of Kentucky

Stefano Tarantini, PhD
Assistant Professor
University of Oklahoma Health Sciences Center

Lindsay Wu, PhD
Senior Research Fellow
University of New South Wales

Ming Xu, PhD
Assistant Professor
UConn Center on Aging and the Department of Genetics & Genome Sciences at UConn Health

Selection Committee

Gordon J. Lithgow, PhD, *Chair*
Buck Institute for Research on Aging

Evandro Fang, PhD
University of Oslo and Akershus University Hospital

Brian Kennedy, PhD
National University of Singapore

Tom Kirkwood, FMedSci
University of Newcastle

Laura Niedernhofer, MD, PhD
University of Minnesota

Holly Van Remmen, PhD
Oklahoma Medical Research Foundation

HEVOLUTION

THE McKNIGHT BRAIN RESEARCH FOUNDATION INNOVATOR AWARDS IN COGNITIVE AGING AND MEMORY LOSS

Emilie T. Reas, PhD
University of California, San Diego

Tara Tracy, PhD
Buck Institute for Research on Aging

Selection Committee

Ana Maria Cuervo, MD, PhD, *Chair*
Albert Einstein College of Medicine

Rozalyn Anderson, PhD
University of Wisconsin School of Medicine and
Public Health

Patricia Boyle, PhD
Rush University

Rafael de Cabo, PhD
National Institute on Aging, NIH

Madhav Thambisetty, MD, PhD
National Institute on Aging, NIH

THE SAGOL NETWORK GEROMIC AWARD FOR JUNIOR FACULTY

Lei Zhang, PhD
Research Assistant Professor
University of Minnesota

Selection Committee

The selection committee for the Glenn Foundation
for Medical Research and AFAR Grants for Junior
Faculty also reviews applications for the Sagol
Network Geromic Award for Junior Faculty
(see page 12).

DIANA JACOBS KALMAN/AFAR SCHOLARSHIPS FOR RESEARCH IN THE BIOLOGY OF AGING

Zhangying Chen
Northwestern University

Stephanie DiLucia
Medical University of South Carolina

William Dion
University of Pittsburgh School of Medicine

Yi-Tang Lee
Baylor College of Medicine

Jonathan Levi
University of Southern California

Michelle Rice
University of Southern California

Samantha Smith
University of Florida

Annie Yao
University of Connecticut Health Center

Changtian Ye
Emory University

Daisy Zavala
Stony Brook University

Selection Committee

Nathan LeBrasseur, PhD, MS, *Chair*
Mayo Clinic

Anna Csiszar, MD, PhD
University of Oklahoma Health Sciences Center

Lindsay De Biase, PhD
David Geffen School of Medicine at UCLA

Bess Frost, PhD
UT Health San Antonio

Christina E. Hugenschmidt, PhD
Wake Forest School of Medicine

Jason Karpac, PhD
Texas A&M University

Jason Roh, MD, MHS
Harvard Medical School

Michael Stout, PhD
The University of Oklahoma

CLARENCE PEARSON FELLOWSHIP IN PUBLIC HEALTH AND AGING

The Clarence Pearson Fellowship in Public Health and Aging provides an opportunity for graduate students in the social sciences to gain exposure to aging research and contribute to projects that help advance the field and AFAR's work.
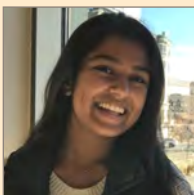
2022 Pearson Fellow Sandya Ganesan, as part of her final practicum in the Masters in Public Health program at Columbia University, helped develop initial strategies and content for potential pre-college and undergraduate engagement efforts. This included curating expert speakers and drafting an online curriculum. Sandya's work provided a substantial foundation for AFAR to consider for future programs.

CLINICIAN-SCIENTIST TRAINING GRANTS

AFAR's Physician Training grant programs help faculty researchers and medical students become academic and clinical leaders prepared to meet the increasing healthcare needs of an ever-growing older population. The necessity to sensitize physicians to the needs of older patients could not be clearer, and AFAR's Physician Training grants strengthen the research that will help older Americans stay healthier, longer.

THE PAUL B. BEESON EMERGING LEADERS CAREER DEVELOPMENT AWARDS IN AGING (K76)

Timothy Anderson, MD, MAS
Assistant Professor of Medicine
Beth Israel Deaconess Medical Center and
Harvard Medical School

Katie Buck, MD
Assistant Professor
The Ohio State University

Sevdenur Cizginer, MD, MPH
Assistant Professor of Medicine
Harvard Medical School

Elizabeth Dzeng, PhD, MD, MPH, MPhil, MS
Associate Professor of Medicine and Sociology
University of California, San Francisco

Miyeon Jung, PhD, RN, FAHA
Assistant Professor
Indiana University School of Nursing

Sikandar H. Khan, DO, MS
Assistant Professor
Division of Pulmonary and Critical Care
Indiana University School of Medicine

Meghan Mattos, PhD, RN
Assistant Professor
University of Virginia School of Nursing

Anaïs Rameau, MD, MPhil, MS, FACS
Assistant Professor of Otolaryngology
Weill Cornell Medicine

Katie Schenning, MD, MPH, MCR
Associate Professor of Anesthesiology and
Perioperative Medicine
Oregon Health & Science University

Mina S. Sedrak, MD, MS
Assistant Professor
City of Hope

Corey B. Simon, DPT, PhD
Assistant Professor
Duke University School of Medicine

Jennifer Vincenzo, PT, MPH, PhD
Associate Professor
University of Arkansas for Medical Sciences

2022 Beeson Scholars are fully funded through the National Institute on Aging (NIA) of the National Institutes of Health (NIH).

MEDICAL STUDENT TRAINING IN AGING RESEARCH (MSTAR) SCHOLARSHIPS

Funded at Weill Cornell Medicine

Daniel Barbakoff   Dawn Chirko   Danielle Yerdon

MSTAR Students are privately funded at Weill Cornell Medicine with the support of Network for Good, Earl (Trip) and Allyson Samson, Norm Volk, and the Kathryn Wriston Fund.

SCIENTIFIC MEETINGS

The Paul F. Glenn/AFAR Conference on the Biology of Aging and Annual AFAR Grantee Conference

AFAR hosted its 36th Annual Grantee Conference in Santa Barbara, CA. The conference, held June 13 –15, provided grantees with an invaluable opportunity to network, share their research with their peers and senior leaders in the field, discuss recent advances, and explore possibilities for future collaborations.

The first day included presentations from experts such as AFAR President James Kirkland, MD, PhD, followed by a second day of sessions held in conjunction with the Glenn Foundation for Medical Research. The conference concluded with a dinner featuring keynote speaker Leslie B. Vosshall, PhD, Vice President and Chief Scientific Officer of Howard Hughes Medical Institute.

AFAR is grateful to the Glenn Foundation for Medical Research, as well as the many attendees, speakers, and researchers, for their help in making these annual meetings possible.

Clin-STAR and Beeson Annual Meetings

AFAR organized the 2022 Clin-STAR and Beeson Annual Meetings, which were held in San Diego, CA, November 15 –19, and attracted more than 170 attendees.

The Paul B. Beeson Emerging Leaders Career Development Award, which is a K76 award mechanism supported by the National Institute on Aging (NIA), provides support for career development and advances the leadership skills of medical and surgical specialists conducting clinically relevant basic, translational or clinical, and patient-oriented research. The Beeson Annual Meeting is an essential component of the program and provides a valuable forum for scientific and professional networking opportunities for current Beeson Scholars, Beeson alumni, and mentors.

Amy S. Kelly, MD, Deputy Director of the NIA, speaks at the joint Clin-STAR and Beeson meeting. Dr. Kelly is a 2012 Beeson Scholar.

The Clin-STAR Coordinating Center organizes activities and provides resources for the cultivation, connection, and synergy of clinician-scientists in aging research from disparate specialties. It also has an annual meeting attended by recipients of the NIA Grants for Early Medical/Surgical Specialists' Transition to Aging Research (GEMSSTAR) program, as well as Clin-STAR pilot grantees and travel awardees.

AFAR has leveraged the Beeson Annual Meeting by starting the Clin-STAR meeting prior to the Beeson meeting and having one overlapping day, providing greater opportunities for networking and mentoring between the two programs.

The Beeson Annual Meeting is supported by The John A. Hartford Foundation and an R13 Conference Grant (R13AG058415) from the NIA. The Clin-STAR Annual meeting is supported through the Clin-STAR Coordinating Center grant (U24AG065204).

SCIENTIFIC AWARDS OF DISTINCTION

Each year, AFAR presents three honorary scientific awards to members of the aging research community whose outstanding work advances the field. These awards are named after visionary scientists whose leadership continues to inspire AFAR and the field.

Each award recipient presented a lecture at the Annual Meeting of the Gerontological Society of America (GSA) on November 3, 2022.

Thomas M. Gill, MD, received the **Irving S. Wright Award of Distinction.** This award is named in honor of AFAR's founder and recognizes exceptional contributions to basic or clinical research in the field of aging. Established in 1982, the award is a framed citation and carries a cash prize of $5,000. Dr. Gill is The Humana Foundation Professor of Medicine (Geriatrics) and Professor of Epidemiology (Chronic Diseases) and Investigative Medicine; Director, Yale Program on Aging; Director, Claude D. Pepper Older Americans Independence Center; Director, Yale Center for Disability and Disabling Disorders; and Director, Yale Training Program in Geriatric Clinical Epidemiology and Aging-Related Research. A practicing geriatrician and clinical epidemiologist, Dr. Gill is a leading international authority on the epidemiology and prevention of disability among older persons.

Jamie N. Justice, PhD, received the **Vincent Cristofalo Rising Star Award in Aging Research.** This award is named in honor of the late Dr. Cristofalo, who dedicated his career to aging research and to encouraging young scientists to investigate important problems in the biology of aging. Established in 2008, the award is a framed citation and carries a cash prize of $5,000. Dr. Justice is an Assistant Professor in the Department Internal Medicine, Gerontology & Geriatric Medicine at Wake Forest University School of Medicine, Sticht Center for Healthy Aging and Alzheimer's Prevention, the Jarrahi Research Scholar in Geroscience Innovation at Wake Forest, and co-leads the Integrative Biology Core of the Wake Forest Claude D. Pepper Older Americans Independence Center. A translational scientist, Dr. Justice aims to evaluate the functional role of biological processes underlying human aging, and to move interventions targeting these processes from animal models to clinical trials.

Benjamin Han, MD, MPH, received the **Terrie Fox Wetle Rising Star Award in Health Services and Aging Research**. The award is named after AFAR board member Terrie Fox Wetle, PhD, who has devoted her professional career to acting as a strong advocate for multi-disciplinary and multi-method investigations centered on aging, public health, and health care. This award honors an early or mid-career health services researcher who has already made important contributions with work that respects the value of multidisciplinary health services science and that is likely to be highly influential in shaping practice and research for decades to come. The award is a framed citation and carries a cash prize of $5,000. Dr. Han is a geriatrician, addiction medicine physician, and clinician-researcher in the Division of Geriatrics, Gerontology, and Palliative Care in the Department of Medicine at UC San Diego School of Medicine and a primary care physician at the San Diego VA Medical Center. His work focuses on the intersection of chronic medical disease and substance use with a career goal to improve the health of older adults with substance use disorders.

NIA-FUNDED INITIATIVES

AFAR provides infrastructure support and leadership for three initiatives funded by the National Institute on Aging (NIA).

AFAR serves as the Coordinating Center for the eight Nathan Shock Centers, which provide leadership and technical support in the pursuit of basic research into the biology of aging. The Nathan Shock Centers Coordinating Center (NSC3) provides coordination and communication between the Centers, the NIA, and the biology of aging research community.

AFAR and Wake Forest University School of Medicine co-manage the Research Centers Collaborative Network (RCCN), which aims to initiate new cross-disciplinary collaborative networks that bring together key thought leaders from each of the seven NIA center programs. The RCCN aims to support multi-disciplinary efforts in aging research; activities include workshops and webinars, pilot programs, early career faculty education, web-based resource identification tools, and fundraising development. The seven center programs in the RCCN are:

- Artificial Intelligence and Technology Collaboratories (AITC) for Aging Research
- Alzheimer's Disease Research Centers
- Centers on the Demography and Economics of Aging
- Claude D. Pepper Older Americans Independence Centers
- Nathan Shock Centers of Excellence in the Basic Biology of Aging
- Resource Centers for Minority Aging Research
- Roybal Centers for Translational Research on Aging

AFAR serves as the national program office for the Clinician-Scientists Transdisciplinary Aging Research (Clin-STAR) Coordinating Center. The Clin-STAR Coordinating Center organizes activities and provides resources for the cultivation, connection, and synergy of clinician-scientists in aging research from disparate specialties across the US. The program particularly focuses on early-stage investigators committed to careers in aging research.

Symposia and Webinars

On May 17, 2022, the annual Nathan Shock Directors' Pre-Conference Symposium was held at the AGE Annual Meeting in San Antonio, TX. The Symposium was themed "Hallmarks of Aging Revisited." Speakers included Jan Vijg, PhD, Christy Carter, PhD, Rafael deCabo, PhD, Sara Espinoza, MD, MSc, and David Gems, PhD. Matt Kaeberlein, PhD, moderated.

Christy Carter, PhD, NIA/Division of Aging Biology Program Officer for Training and Workforce Development, presents at the 2022 Nathan Shock Directors' symposium.

On September 20, 2022, NSC3 cosponsored the Research Centers Collaborative Network (RCCN) webinar 'The NIA Aging Cell Repository: A Resource to Foster Collaborations Across the RCCN.' This webinar covered how aging research—whether basic, clinical, translational, or epidemiological—might benefit from/contribute to the NIA Aging Cell Repository.

Pilot Awards and Spotlight Interviews

NSC3 helps promote Pilot Awards through each of the Nathan Shock Centers, creating opportunities for investigators from other institutions to advance research aligned with each Center's expertise. In 2022, Pilot Awards were supported across the Centers, including several multi-year grants.

In 2022, NSC3 launched a series of Pilot Award Spotlight interviews. Recent recipients describe how they become interested in aging, how support from and collaboration with the NSCs helped further their research and its potential impact, and more.

> *"The Nathan Shock Centers Coordinating Coordinating Center (NSC3) has had a major impact on our outreach to the aging community across the country. NSC3 also has provided support to a selected number of our Pilot Grant awardees to attend the AFAR grantee conference, giving the awardees the opportunity to establish professional connections with Pilot Grant awardees from other Shock Centers."*
>
> *- Holly Van Remmen, PhD, and Arlan Richardson, PhD, Oklahoma Nathan Shock Center*

Publications

The NSC3 works with our partners at Indiana University to develop, distribute, and implement a shared state-of-the-art approach and commitment to the renewed NIH emphasis on rigor, reproducibility, and transparency (RRT) in pre-clinical studies. The following articles were published in 2022:

- 'Evaluation of the type I error rate when using parametric bootstrap analysis of a cluster randomized controlled trial with binary outcomes and a small number of clusters' (in *Computer Methods and Programs in Biomedicine Update*, March 2022)
- 'From model organisms to humans, the opportunity for more rigor in methodologic and statistical analysis, design, and interpretation of aging and senescence research' (in *The Journals of Gerontology. Series A, Biological Sciences and Medical Sciences,* November 21, 2022)
- 'Randomization, design and analysis for interdependency in aging research: no person or mouse is an island' (in *Nature Aging*, December 2, 2022)

New AITC Center

The Artificial Intelligence and Technology Collaboratories (AITC) for Aging Research program, also known as the a2 Collective, is the newest NIA Center Program and joined the RCCN in 2022. The three AITCs are located at Johns Hopkins University, the University of Massachusetts Amherst, and the University of Pennsylvania. The AITCs provide pilot awards, mentorship, and resources to support promising projects through applications of artificial intelligence and technology.
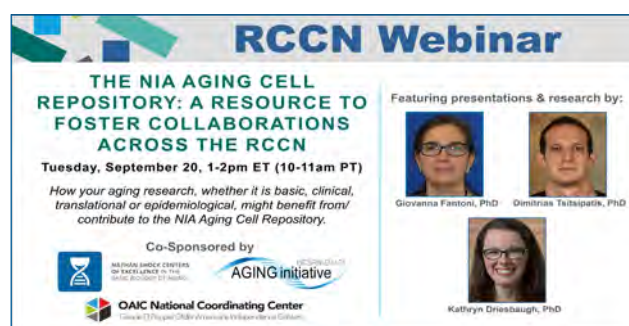
Workshops and Symposia

The RCCN hosted several in-person and virtual events in 2022, including:

- Workshop: 'Measuring Biologic Age.' January 19-20, 2022 (Virtual)
- Workshop: 'Aging, Race, and Health Disparities.' June 28-29, 2022 (Bethesda, MD)
- Workshop: 'The NIA Aging Cell Repository: A Resource to Foster Collaborations Across the RCCN.' September 20, 2022 (Virtual)
- Workshop: 'mHealth and Digital Health Approaches to Research in Aging.' November 1-2, 2022 (Indianapolis, IN)
- Symposim: 'Fostering Multidisciplinary Solutions in Aging: The Research Centers Collaborative Network.' (Gerontological Society of America Annual Scientific Meeting) November 3, 2022 (Indianapolis, IN)

Pilot Awards

In 2022, RCCN Pilot Awards funded five projects based on research priorities identified in recent RCCN workshops. Projects involve multiple NIA-sponsored research centers to foster new and interdisciplinary collaborations.

Publications

The RCCN publishes articles following each workshop. The following articles were published in 2022:

- 'Key Recommendations from the 2021 "Inclusion of Older Adults in Clinical Research" Workshop' (in *The Journal of Clinicial and Translational Science*, January 2022)
- 'Research Centers Collaborative Network Workshop on Sex and Gender Differences in Aging' (in *Innovation in Aging*, August 21, 2022)
- 'Research priorities for measuring biologic age: Summary and future directions from the Research Centers Collaborative Network Workshop' (in *Geroscience*, October 15, 2022)
- 'Endpoints for geroscience clinical trials: Health outcomes, biomarkers, and biologic age' (in *Geroscience*, October 19, 2022)
- 'Achieving and sustaining behavior change for older adults: A Research Centers Collaborative Network workshop report' (in *The Gerontologist,* December 2, 2022)

2022 Publication based on RCCN pilot funding:

- 'Lessons in Affect Regulation to Keep Stress and Pain UndeR control (LARKSPUR): Design of a randomized controlled trial to increase positive affect in middle-aged and older adults with fibromyalgia' (in *Contemporary Clinical Trials*, September 2022)

"The value of RCCN funding is the opportunity to leverage brilliant minds and resources afforded by multiple centers who have a focus on aging and function. Securing funding with RCCN has already opened several doors with creating new collaborations and enhancing deep and sustainable connections."

- Katherine Hall, PhD, Katherine Ramos, PhD, Timothy Strauman, PhD, Duke University

Meetings

In 2022, the **Clin-STAR Annual Meeting** was held in conjunction with the Beeson Annual Meeting in-person from November 17-19 in San Diego, California (see page 20). Clin-STAR attended and presented at several **Professional Society Meetings** in 2022, hosting exhibit booths and cosponsored sessions at the annual meetings of The American Geriatrics Society and Gerontological Society of America.

Webinars

Clin-STAR hosted three webinars in 2022: 'Applying Frailty Research to the Clinical World: Four Case Studies' on April 19; 'ABC Guide to ADRD Research' on June 7; and 'How to use the Clin-STAR Database: A Guide for New Users' on September 28.

> *"The Co-Author network on the Clin-STAR Database has been really helpful for identifying potential collaborators, the fields they are in, and any mutual collaborators we have."*
>
> -Evan Plys, PhD, Center for Health Outcomes and Interdisciplinary Research, Massachusetts General Hospital

Professional Resources

The **Clin-STAR Database allows** users to browse information on fellow researchers' institutions, publications, and grants, with interactive graphics displaying connections by disciplines, publications, and research areas.

Clin-STAR facilitates five **Special Interest Groups**: (1) Delirium Research, (2) Frailty Research, (3) Inflammation Research, (4) Exercise and Lifestyle Medicine, and (5) Aging and Perioperative Research. Each group is comprised of eight to twelve early career investigators across disciplines and subspecialties who meet with senior guest researchers, share their work, and receive peer support.

Monthly Mentoring **Office Hours** connect early career clinician-scientists with senior mentors for one-on-one, confidential conversations about career development in aging research.

Clin-STAR Coordinating Center Leadership. Front row: Odette van der Willik and Kristine Yaffe, MD. Back row: Thomas Gill, MD, Jeremy Walston, MD, and Andrea Sherman, MS.

Funding Opportunities

Three **pilot grants** were awarded in 2022, bridging junior and senior researchers from different disciplines and institutions to stimulate new collaborations focused on the development of clinical aging research projects. Four **outreach funds** were awarded in 2022, including support for a Mini-Sabbatical and three Early Career Lectures.

Publications and Communications

Clin-STAR regularly publishes *Journey Stories* on its website, presenting stories of trans-disciplinary clinician-scientists who took non-traditional paths to becoming aging researchers.

In collaboration with the *Journal of the American Geriatrics Society (JAGS)*, Clin-STAR launched two new series in 2022: 'Clin-STAR Corner,' which highlights current practice-changing research within medical, surgical, and related specialties, and 'Around the EQUATOR with Clin-Star,' which highlights existing reporting standards while addressing transdisciplinary challenges that may arise when applied to research involving older participants. Also in *JAGS*, Clin-STAR published the article 'Modeling success: How to work effectively with your biostatistician' (May 24, 2022).

## Diversity, Equity, Inclusion, and Accessibility (DEIA) Supplement

Clin-STAR received an administrative supplement award in 2022 with the aims of increasing attention to DEIA through mentoring, expanding resources, piloting new initiatives, and developing training materials to understand and address the intersection of health disparities and aging research. Through this, Clin-STAR has provided Office Hours, webinars, and resources, as well as the continued development of a Health Equity Scholars Program.

COMMUNICATIONS & COLLABORATIONS

LIVE BETTER LONGER | Prevention

AFAR continued its *Live Better Longer* webinar series with *Prevention* magazine. The engaging conversations paired AFAR experts with *Prevention's* Editor-in-Chief Sarah Smith to discuss the science behind a range of lifestyle interventions and tech innovations to promote healthy aging.
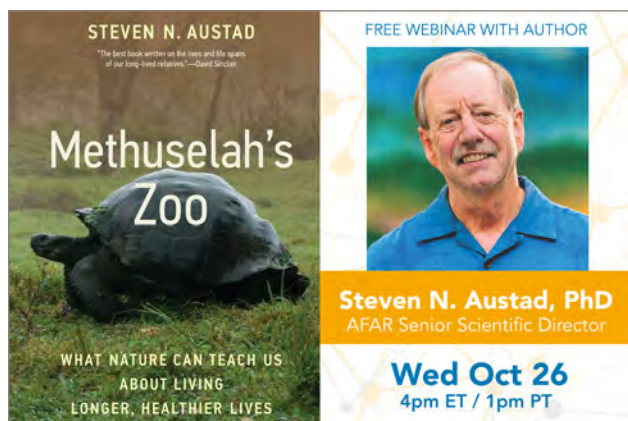
Watch recent and archived webinars from our Live Better Longer series at **www.afar.org/afar-webinars**

For more AFAR news, follow American Federation for Aging Research on LinkedIn and @AFAR on Facebook.

2022 DONORS

AFAR is deeply grateful for the support and generosity of our donors. Their continued contributions enable AFAR to advance its mission, strengthen its programs, and continue building the research pipeline.

"AFAR is a gift to the field of aging. It offers resources and opportunities to pursue collaborative research and provides a path to translate research from the laboratory to patients. I am deeply honored to receive an AFAR fellowship as a postdoctoral researcher. This grant will enhance my research experience and provide essential professional development opportunities to help launch my independent research career.

- Yasar Arfat Kasu, PhD
2022 Postdoctoral Fellow

INDIVIDUALS

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Sharon and Stephen Alpert
Mary K. Anderson
Sharon and Dan Anderson
Audrey S. Amdursky
Eleanor H. Ascher
Filip Babnic
Ann Beck
Joan Beck
Frederica Blum
Alan Bonnyman
Linda Bosco
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Jeremy D. Walston
Danielle Warnes
Brad and Kathi Wegscheider
Barry Weisfeld
Terry A. Wigness

"Funding from AFAR has been instrumental in guiding my research trajectory and supporting my career development as an independent investigator. As a postdoctoral fellow transitioning from cognitive neuroscience to the field of aging research, AFAR supported an exploratory project which provided preliminary findings that served as the foundation for an NIH-funded career development award and in turn, for my current research program. Now, with a rapidly evolving lab, this award from AFAR and the McKnight Foundation will provide essential resources and opportunities to extend our prior work by leveraging recent methodological and theoretical advances to more deeply probe the mechanisms underlying brain and cognitive aging."

- Emilie T. Reas, PhD
2022 McKnight Brain Research
Foundation Innovator Awards
in Cognitive Aging and
Memory Loss recipient

IRVING S. WRIGHT LEGACY SOCIETY

Named in honor of AFAR's founder, the Irving S. Wright Legacy Society is an honorary society created to recognize and thank individuals who make a planned gift to AFAR.

AFAR thanks the individuals who have named AFAR in their estate plans:

George E. Doty*
Dorothy Dillon Eweson*
Mary and Hadley Ford
Barbara Wright Gatje
Diana Jacobs Kalman
Robert and Bette Nielson
Leonard Rokaw
Mary Ann Sanford*
Lillian S. White Living Trust

*Deceased
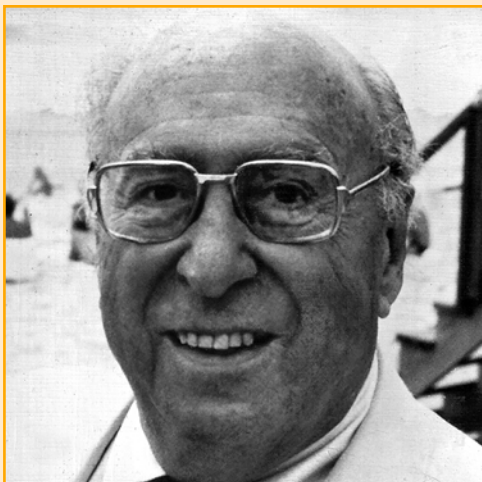
"We are tackling the greatest health problem of today and the coming years—the innumerable and complex disabilities of the aging population."

- Irving S. Wright, MD, in an AFAR newsletter, 1981

WHEN YOU **SUPPORT AFAR,** YOU SUPPORT RESEARCH THAT WILL HELP US ALL **LIVE HEALTHIER, LONGER.**

AFAR offers a range of **GIVING OPPORTUNITIES:**

- Make a gift to underwrite or endow a **named research grant.** Naming opportunities in support of AFAR research grants or disease-specific grants are available at multiple levels of giving. AFAR can also help design grant programs.

- Make a gift to our **annual fund,** the central vehicle for supporting our core research grant programs. Gifts may be made annually, quarterly, or monthly as a reoccuring donor.

- **Sponsor a scientific conference** or educational program. Opportunities for sponsorship are available at many levels.

- Make a **planned gift** as a member of the Irving S. Wright Legacy Society.

- Make a **memorial or a tribute gift** to honor a loved one or an occasion.

- Make a **gift of stock** or other tangible property; while supporting aging research, you avoid paying capital gains taxes.

- Designate AFAR as the recipient of your **donor-advised fund.**

To make your online gift to AFAR, please visit our secure website: **www.afar.org/donate**

2% Fundraising

4% Management and General
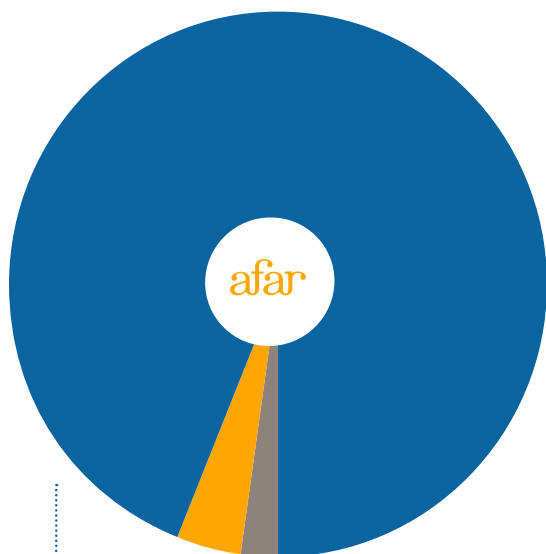
94% Research Grants and Scientific Programs

AFAR is proud to maintain high fiscal standards internally, and we require the same of our grantee institutions.

SUMMARIZED OPERATING RESULTS

OPERATING REVENUE

Contributions	14,897,957	93%
Investment Income, Net	21,971	
Endowment Earnings	111,450	1%
Government Grants	953,213	6%
Total Operating Revenue	**15,984,591**	**100%**

EXPENSES

Research Grants & Scientific Programs	**14,917,815**	**94%**
Management and General	619,946	4%
Fundraising	358,020	2%
Total Supporting Expense	**977,966**	**6%**
Total Operating Expense	**15,895,781**	**100%**
Total Operating Surplus	**88,810**	

SUMMARIZED BALANCE SHEET

Assets

Cash and Equivalents	7,014,422	21%
Contributions Receivable	13,371,824	40%
Investments	11,357,344	34%
Other	1,491,193	4%
Total Assets	**33,234,783**	**100%**

Liabilities and Net Assets

Research Grants and Scholarships Payable	9,777,327	29%
Other	307,355	1%
Total Liabilities	**10,084,682**	**30%**

Net Assets

Without Donor Restrictions	6,203,960	27%
With Donor Restrictions	16,964,141	73%
Total Net Assets	**23,150,101**	**70%**
Total Liabilities and Net Assets	**32,234,783**	**100%**

For the 11th consecutive year, AFAR has earned a 4-star rating from Charity Navigator, America's largest and most-utilized independent evaluator of charities. This is the highest possible rating and shows that AFAR adheres to sector best practices and executes its mission in a financially efficient way.

Only 8% of the charities evaluated by Charity Navigator have received at least six consecutive 4-star evaluations, indicating that AFAR outperforms most other charities and exceeds non-profit industry standards.

CHARITY NAVIGATOR

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Four Star Charity

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Special thanks to all of the featured experts for lending their time and insights to AFAR's 2022 Annual Report.

This report was produced with the contributions of Geoffrey Knox & Associates (Copywriting), Elizabeth Hanson (Copyediting), and AFAR Staff (Copywriting and Design). Images courtesy of AFAR and featured institutions.

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