



## The Genesis Awards: Catalyzing Change

**“Identify the corridors of indifference and run like hell down them.”**

This ethos beats at the heart of **Martine and Bina Rothblatt’s** initial efforts in primary pulmonary hypertension (**PPH**) research – the PPH Cure Foundation. They launched the foundation in 1994 following the diagnosis of their then-seven-year-old daughter, **Jenesis**, with PPH, now known as pulmonary arterial hypertension (**PAH**), to mobilize research efforts for a cure. Although the foundation was dissolved in 1996 when the Rothblatts founded UTC to move faster toward meaningful therapies and a cure, the original ethos lives on at UTC and the foundation’s early mission fuels the purpose of the **Jenesis Awards Program**. Founded in 2018 and named after **Jenesis Rothblatt**, who today serves as the Inspirational Founder and Ambassador of United Therapeutics, this program represents “a full-circle moment,” she explained. “It is beautiful to build on the initial mission of that early foundation ... to find a cure and make a difference.”



*Jenesis Rothblatt Speaking at the 2023 Jenesis Awards Dinner*

As the 2024 program cycle ramps up, we connected with Jenesis, **Dr. Mardi Gomberg-Maitland**, Chair of the independent Scientific Review Committees, **Andrew Wang**, UTC employee and Jenesis Awards Program Lead, and several past awardees to learn more about the program and what makes it unique among research grant and recognition programs.

### What is the Jenesis Awards Program?

There are two categories of awards today: the **Jenesis Innovative Research Awards™** and the **Jenesis Trailblazer Awards™**.



The Genesis Innovative Research Awards (hereafter, **Research Awards**) provide support to U.S.- and Canada-based junior faculty who are engaged in innovative research to advance scientific knowledge and enhance patient care in pulmonary hypertension (**PH**), idiopathic pulmonary fibrosis (**IPF**), or lung transplantation. In each program cycle, three awardees receive grants of up to \$100,000 for a one-year period in any of the following award sub-categories:

- **The Genesis Clinical Investigations and Outcomes Award™** supports research on populations with unmet needs or novel treatment approaches, or in the science of clinical or patient reported outcomes research
- **The Genesis Pre-Clinical Award™** supports research on the mechanisms behind PH, IPF, and other end-stage lung diseases, and effects of therapies
- **The Genesis Determinants of Health Award™** supports research on health equity and outcomes gaps among marginalized communities

“Supporting research grants aligns with our corporate social responsibility and helps nurture and develop the talent pool within our industry,” explained Andrew Wang. Indeed, as part of being a public benefit corporation, we have made a commitment to operating sustainably for all of humanity. Funding research in areas of need is one element of that commitment. Through the Research Awards, UTC has disbursed \$1.5 million in funding, recognizing 15 Research awardees since 2018. “By investing in scientific research, we contribute to the betterment of society by advancing knowledge, solving critical problems, and promoting the overall well-being of individuals and communities within the field of rare disease. As the program scope expands to other disease states, we hope the program can positively impact even more communities,” Andrew noted.

The Genesis Trailblazer Awards (hereafter, **Trailblazer Awards**) are non-monetary awards that recognize exceptional U.S.- or Canada-based women researchers or clinicians who have completed innovative research in the same fields as the Research Awards. Launched in 2022, recognition is available in the following award categories:

- **The Genesis Trailblazer Award™** recognizes a woman researcher or clinician for her contributions over the span of her career
- **The Genesis Emerging Trailblazer Award™** recognizes a woman researcher or clinician in early-to-mid career for her contributions to the field

Unlike the Research Awards, nominations for the Trailblazer Awards are submitted by colleagues. The program has recognized four researchers or clinicians since the Trailblazer Awards were established. “In medicine, we help people, but we don’t often get recognition for that work,” Dr. Gomberg-Maitland explained. “When this award category was suggested, we [the Scientific Review Committee (**SRC**) members] all thought ‘Wow, we should do this!’ I am honored to be able to recognize my colleagues in the field in this way.”

## Supporting Early Career Researchers

“The recognition from such a prestigious program... has opened doors to increased visibility within the research community and offered opportunities for collaboration and networking, and empowered me to explore more ambitious aspects of my project, pushing the boundaries of innovation.”

Dr. Joel James, 2023 Research Award Recipient



Securing research funding poses significant challenges, particularly for early- and mid-career researchers. Historically, there has been a persistent scarcity of funds for early career researchers, evident in a decline in grants awarded and an increase in the age at which investigators receive them, as highlighted by a 2005 National Academy of Sciences panel. Although funding for early career investigators has improved over time, the rising cost of scientific research and a decrease in federal funding capacity continue to complicate matters. These difficulties were exacerbated during the COVID-19 pandemic, forcing many early career researchers to pause their projects.

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**Mardi Gomberg-Maitland**, MD, MSc, Professor of Medicine and Director of the Pulmonary Hypertension Program at George Washington University, and Chair of the SRC for the Genesis Awards Program, is herself a trailblazer. With interests in clinical care, clinical trials, the epidemiology of pulmonary hypertension, and more, Dr. Gomberg-Maitland is a highly sought after leader in pulmonary hypertension. Her participation in the SRC, alongside several other leaders in their fields, is not the only strength of the Genesis Awards Program. “This is my third year being chair [of the SRC],” Dr. Gomberg-Maitland said. “It is one of the few grant programs that is available for junior investigators. It’s not easy to get funding – especially for those working in smaller institutions; but getting funding for preliminary research is key to people staying in the field.”



**Dr. Vineet Agrawal**, a 2022 award recipient, emphasized the importance of the Research Award during a critical time in his career. “Receiving this award was not only a validation of my ideas [being able to predict which DNA targets or drug therapies might be more successful in treating PH due to recent heart failure], but was particularly important at a time when, due to the COVID pandemic, protection of my time for research and monetary support was at an all-time low. This award not only catalyzed my research, but also supported me and protected me at a very vulnerable time.”

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**Dr. Daniel Lachant**, a 2020/2021 award recipient, had a similar experience. The award, he explained, “funded my research related to cardiac effort ... something we developed to help improve the 6-minute walk test.<sup>[1]</sup>” Cardiac effort is the number of heartbeats used during the 6-minute walk test divided by walk distance – a measurement they found “to be more reproducible than a 6-minute walk test alone.” The award “was instrumental in continuing to build my research.”



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<sup>[1]</sup> The six-minute walk test, abbreviated 6MWT, is widely used as a primary or secondary endpoint in randomized controlled trials for PAH. Source: [www.pahinitiative.com](http://www.pahinitiative.com)

## Enabling Future Funding

In addition to the research funding challenges noted above, there's a Catch-22 scenario in obtaining funding for original research. Researchers require funding to gather data and evidence, yet securing funding often hinges on already having preliminary data and evidence. Winning one of the Research Awards can position awardees for future funding.



The Research Award “supported my research into PAH during a critical time in my career,” **Dr. Samuel G. Rayner**, a 2019 award recipient explained. “I had just finished my medical training in pulmonary and critical care medicine and was beginning research into bioengineering techniques in microvessel models to better understand and hopefully find new cures for this disease.” The award enabled completion of work that Dr. Rayner said “led to a publication and gave me preliminary data that allowed me to successfully apply for research funding from the U.S. National Institutes of Health (NIH).”

**Dr. Justin Lui**, a 2022 award recipient, had a similar experience. “My area of study specifically relates to the rare autoimmune disease scleroderma that leads to inflammation and scarring of the skin, internal organs, and blood vessels. PH is a major cause of death in patients with scleroderma. In my research, we investigated how abnormalities in cardiac function in scleroderma can be used as a marker for poor prognosis in patients with scleroderma-related pulmonary hypertension. This award has been invaluable in bridging my research funding to two subsequent three-year foundation research grants from the American Heart Association and the National Scleroderma Foundation.”



Another 2022 awardee, **Dr. Rahul Kumar**, shared a similar link between this award and future funding. “I specialize in basic research, deciphering the role of immune cells in causing the increased lung pressure in high-altitude environments – similar to the elevated lung pressure in PAH,” Dr. Kumar explained. “My research seeks to find potential interventions to prevent this. With this award, I was able to unravel groundbreaking discoveries that enabled me to contribute to several high impact publications, which in turn enhances my ability to secure additional funding.”



## Fueling Inspiration

Finally, the SRC and Award team encourages applicants with innovative perspectives and approaches to the issues. “We definitely support underappreciated science,” Dr. Gomberg-Maitland shared. For example, **Dr. Sara Vargas**, Assistant Professor of Psychiatry and Human Behavior at Brown University, was one of the first recipients of the Research Awards in 2018, which helped fund her work on health-related quality of life strategies for measuring and improving sexual health and functioning among patients with PAH.



“As someone who lives with this condition [PAH] every day and has to deal with up and down days – what is most impactful for me is seeing out-of-the-box solutions. Going to the grocery store takes energy. I shop one day, cook the next day because I just don’t have energy to do both in the same day. Solutions that help those of us living with the disease improve our lives while we are on therapies that help extend our lives – that’s also important work!”

Jenesis Rothblatt, Inspirational Founder and Ambassador for United Therapeutics



**Dr. Joel James**, a 2023 award recipient, whose work focuses on a specific cell communicator protein and its contributions to PH, shared his appreciation for the recognition for his innovative work. “Receiving [the award] has been a game-changer for both me and my research endeavors. The recognition from such a prestigious program... has opened doors to increased visibility within the research community and offered opportunities for collaboration and networking, and empowered me to explore more ambitious aspects of my project, pushing the boundaries of innovation.”

**Dr. Kurt Prins**, a 2019 award recipient, shared a similar perspective. In his research on metabolism and a specific protein function that affects the heart, he noted: “This award was transformational for my career. It provided funds that helped me branch out and expand what we could do in a lab and allowed us to ask bigger questions.”



## Giving Women Trailblazers the Limelight

"The purpose of the Trailblazer Awards is to highlight women who have made a huge impact on the field. We added the Emerging award category after we realized that even junior investigators trailblaze," Dr. Gomberg-Maitland explained.

"I gained recognition and validation for the totality of my work in PH."

Dr. Teresa De Marco, 2023 Trailblazer Award Recipient

"The Trailblazer Award is a more recent endeavor but holds a special place in my heart since my mom was a huge role model for me growing up," Andrew shared. "Women have historically been underrepresented in various fields, including those relevant to our industry. Establishing an award specifically for women trailblazers helps create visible role models and mentors for aspiring female researchers. Seeing successful women in leadership positions can inspire others to pursue careers in areas where they may have been traditionally underrepresented. We hope that by demonstrating a commitment to supporting and acknowledging female trailblazers contributes to a positive and inclusive culture shift. It sends a clear message that diversity and gender equality are valued, creating an environment where all researchers can thrive and contribute their best work."

In addition to their scientific contributions, trailblazers are recognized for their impact on the careers of other researchers or proteges. **Dr. Teresa De Marco**, a 2023 Trailblazer Awardee, exemplifies what it means to be a pioneer in the field. She has participated in 26 trials of PH/PAH, numerous studies, and has published more than 55 manuscripts on PH. Having taught almost all the PH providers in northern California and many others throughout the country, Dr. Marco has also focused on extending her hand to emerging leaders – fellows in training, early career colleagues, and women in academic medicine. "Education has been a driving force in my career, and I have served on scientific annual meeting program committees and on education committees for scientific societies and the Pulmonary Hypertension Association," Dr. Marco shared. Asked what this recognition means to her, she said "I gained recognition and validation for the totality of my work in PH."



**Dr. Ke Yuan**, a 2023 Emerging Trailblazer Awardee, concurs. She and her team investigate the role of cells called pericytes in lung blood vessels to figure out how they operate in their diseased state, in hopes of finding a cure for PAH. "...the Genesis Emerging Trailblazer Award program [helps] contribute to the broader goal of promoting diversity in science," Dr. Yuan said. This award "serves as an external validation of the quality and impact of my research. It signals to my peers and the broader scientific community that our work is important and noteworthy."

## Applying for the Program - You've Got to be In It to Win It!

This old U.S. lottery slogan applies to research grants. In fact, when we asked past awardees of the Jenesis Innovative Research Awards what advice they would give to someone contemplating applying for one of this year's award categories, almost to a person they repeated what Dr. Lachant expressed so well: "You miss 100% of the grants you don't apply for."

The application process itself is also valuable for applicants. "Our applicants make the grant program better. Some do not get an award the first time around, but we've given several applicants feedback that helped them secure an award the second or third time they applied," Dr. Gomberg-Maitland said. "I think we [the SRC and UTC] underestimated just how much the program would help those who did not get funded!"

The Jenesis Awards Program is accepting research applications and nominations now, and for the first time, the program is accepting applications from Canada-based researchers. Also new this year, the program is accepting research applications that focus on IPF and lung transplantation. The **deadline for submissions will be Monday, April 15th**. The SRC will then review the proposals and select the winners who will receive their awards at a dinner event in early October in Boston at the CHEST conference. These award dinners celebrate awardees past and present, and Jenesis will be there to celebrate with them. "It's rare to have the namesake of a program involved in an award ceremony," Dr. Gomberg-Maitland shared. "I have personally witnessed this: when Jenesis speaks to a group, the impact is immeasurable. She is an inspiration to scientists and patients alike!"

Remember that classic lottery slogan? Well, your odds of getting noticed by the UTC Jenesis Award Program are more promising than hitting the jackpot. The deadline for 2024 submissions is fast approaching. Don't hesitate – start your application today!

<https://utjenesisawards.com/>

## Previous Awardees

### Jenesis Research Awards

2023

**Joel James, Ph.D.**

Indiana University  
Bloomington, IN

*Targeting the Stratifin Mediated  
Endothelial-Pericyte Crosstalk in  
Pulmonary Hypertension*

**Jasleen Minhas, MD, MS**

University of Pennsylvania  
Philadelphia, PA

*Physical Frailty in Pulmonary  
Arterial Hypertension*

**Maryan Sharifi-Sanjani, Ph.D.**

University of Pittsburgh  
Pittsburgh, PA

*Telomeric Protein Trf2 Orchestrates  
Right Ventricular Cardiomyocyte  
Gene Expression in Pulmonary  
Hypertension*



## 2022

### Vineet Agrawal, MD, Ph.D.

Vanderbilt University Medical Center  
Nashville, TN  
*Harnessing Genetics for Novel Therapeutic Targets in Pulmonary Hypertension due to Heart Failure*

### Yogesh N. Reddy, MD, MSc

Mayo Clinic  
Rochester, MN  
*Comprehensive O2 Transfer Analysis from the Lung to Mitochondria with Inhaled Treprostinil in ILD Pulmonary Hypertension*

### Rahul Kumar, Ph.D.

University of California  
San Francisco, CA  
*Role of Classical Monocytes in hypoxic Pulmonary Hypertension*

### Justin K. Lui, MD, MS

Boston University School of Medicine  
Boston, MA  
*Biomarkers of Left Ventricular Strain in Systemic Sclerosis-Related Pulmonary Hypertension*

## 2020 / 2021

### Jonathan Florentin, Ph.D.

University of Pittsburgh  
Pittsburgh, PA  
*CX3CR1 Triggers Neutrophil Recruitment to the Lungs and Enhances Smooth Muscle Cell Proliferation in Pulmonary Hypertension*

### Daniel Lachant, DO

University of Rochester,  
Medical Center  
Rochester, NY  
*Cardiac Expenditure Correlates With Right Ventricular Function Measured by Cardiac MRI*

## 2019

### Benjamin Korman, MD

University of Rochester  
Medical Center  
Rochester, NY  
*Modulation of TNF-alpha as Cause and Treatment of Connective Tissue Disease-Associated Pulmonary Arterial Hypertension*

### Kurt Prins, MD, Ph.D.

University of Rochester Medical Center  
Rochester, NY  
*Protein O-GlcNACylation in RV Failure*

### Samuel Rayner, MD

University of Washington  
Seattle, WA  
*"Establishing Patient-Specific Microvessel Models of Pulmonary Arterial Hypertension*

## 2018

### Kara Goss, MD

University of Wisconsin  
Madison, WI (at time of award)  
*Cardiac Metabolic Remodeling After Pulmonary Vasodilator Therapy in Pulmonary Arterial Hypertension: A Pilot Study*

### Yen-Chun (Charly) Lai, Ph.D.

Indiana University School of Medicine  
Indianapolis, IN  
*Mechanistic Role of Skeletal Muscle SIRT3 in Parenteral Treprostinil-Mediated Improvement of Pulmonary Hypertension Associated with Heart Failure with Preserved Ejection Fraction*

### Sara Vargas, Ph.D.

The Warren Alpert Medical School,  
Brown University  
Providence, RI  
*Health-Related Quality of Life: Patient-Focused Strategies for Measuring and Improving Sexual Health and Functioning Among Patients with Pulmonary Arterial Hypertension*





## Jenesis Trailblazer Awards

2023

**Teresa De Marco, MD,  
FACC, FHSA**  
Professor of Medicine  
University of California  
San Francisco, CA  
*R.H. and Jame G. Logan  
Endowed Chair in Cardiology  
Founder of UCSF Adult PH  
Comprehensive Care Center  
Medical Director of Heart  
Transplantation*

2022

**Erika Berman Rosenzweig, MD**  
Professor of Pediatrics (in  
Medicine) Columbia University  
Irving Medical Center – New York  
Presbyterian  
New York, NY  
*Director, Adult and Pediatric  
Pulmonary Hypertension  
Comprehensive Care Center and  
CTEPH Program Director, PPHNet Vice  
Chair for Clinical and Translational  
Research, Department of Pediatrics*

## Jenesis Emerging Trailblazer Awards

2023

**Kara Goss, MD**  
Associate Professor of  
Medicine and Pediatrics  
UT Southwestern  
Dallas, TX

**Ke Yuan, Ph.D.**  
Assistant Professor of Pediatrics  
Boston Children's Hospital/  
Harvard Medical School  
Boston, MA



## Scientific Review Committee

### Chair

#### **Mardi Gomberg-Maitland, MD, MSc**

George Washington University  
Washington, DC  
*Professor of Medicine*  
*Director of the Pulmonary Hypertension Program*

### Review Committee

#### **Murali Chakinala, MD**

Washington University  
St. Louis, MO  
*Professor of Medicine*  
*Division of Pulmonary and Critical Care Medicine*  
*Director, Pulmonary Hypertension Care Center*  
*Director, Hereditary Hemorrhagic Telangiectasia Center*

#### **Pedro Catarino, MD**

Cedars-Sinai  
Los Angeles, CA  
*Professor*  
*Department of Cardiac Surgery*

#### **Stephen Chan, MD, Ph.D. FAHA**

University of Pittsburgh School of Medicine and PUMC  
Pittsburgh, PA  
*Vitalant Chair in Vascular Medicine*  
*Professor of Medicine*  
*Director, Vascular Medicine Institute*  
*Institute Director, Center for Pulmonary Vascular Biology and Medicine*

#### **Vinicio A. de Jesus Perez, MD, FCCP, FAHA, ATSF**

Stanford University Medical Center  
Stanford, CA  
*Associate Professor of Medicine with Tenure*  
*Co-Director, Stanford Translational Investigator Program (TIP)*  
*Division of Pulmonary, Allergy, and Critical Care Medicine*

#### **Anna R. Hemnes, MD**

Vanderbilt University School of Medicine  
Nashville, TN  
*Professor of Medicine*  
*Division of Allergy, Pulmonary and Critical Care Medicine*

#### **Harrison W. Farber, MD**

Tufts University School of Medicine  
Boston, MA  
*Professor of Medicine*

#### **Kenneth McCurry, MD**

Cleveland Clinic  
Cleveland, OH  
*The Jack B. Lally Endowed Chair in Thoracic Surgery*  
*Director, Lung and Heart-Lung Transplant Program*  
*Surgical Director, Respiratory ECMO Program*

#### **Lana Melendres-Groves, MD**

University of New Mexico School of Medicine  
Albuquerque, NM  
*Assistant Dean, Faculty Affairs and Professional Development*  
*Vice Chair of Diversity, Equity, and Inclusion*  
*Department of Internal Medicine, Professor, PAH Medical Director, Clinical Trial Unit Medical Director*

#### **Imre Noth, MD**

University of Virginia  
Charlottesville, VA  
*Dudley F. Rochester Professor of Medicine, Chief, Division of Pulmonary and Critical Care Medicine*

