2021 Annual Report
SOLVING SINGLE VENTRICLE
Front cover image:
Troponin Staining, Jaci Bliley, PhD, Carnegie Mellon University
Contents

ABOUT US
6 Our Approach
8 Our Principles
9 Our Strategy

TARGETED INVESTMENTS
10 Rethinking Targeted Investments: The Additional Ventures Method
13 Partner Programs: Collaborative Approaches for Transformative Change

SUPPORTING TEAM SCIENCE
14 The Cures Collaborative: Finding a Functional Cure

BUILDING FOUNDATIONAL RESOURCES
16 Project Singular: Building the Foundation for Research and Discovery
18 Integrated Datasets to Strengthen the Foundation for Single Ventricle Research

CREATING COMMUNITY
21 Speaker Series: Building a Connected Community
22 Single Ventricle Investigator Meeting: A Platform for Collaboration

FUTURE
23 What’s Next

GRANTS AND INFRASTRUCTURE
24 Impact by the Numbers

26 OUR TEAM
A Letter From Our President

Science has the potential to make extraordinary leaps when the right people, ideas, and technology come together to solve complex problems. Since our founding, Additional Ventures has partnered with a dynamic community of scientists, engineers, and clinicians from around the world to address the challenges and unknowns in single ventricle heart defect research and care.

Our relentless optimism and dedication to patients and families continue to power our quest toward a functional cure for single ventricle heart defects.

Our first-ever annual report outlines our principles, strategies, and investments—and highlights the progress we've made toward our goals. In this report, we take a comprehensive look at the work we've accomplished and provide an overview of the exciting developments on the horizon for Additional Ventures and our partners.

While palliative treatments for single ventricle heart defects exist today, we believe this isn’t enough. Patients and their families deserve more. As you’ll read, we are confident that through coordinated strategic and interdisciplinary work, dynamic teaming, and flexible funding, we can illuminate a functional cure for single ventricle. We recognize the need to build on progress and create opportunities for collaboration, open data sharing, and large-scale research to push us forward and change the face of this disease. It will take all of us to make that vision a reality.

There is no time to waste for the children and adults living with these defects. We’re at a pivotal time in the history of this disease, and we have the research tools we need to spur significant progress. I’m proud of the leaps we have already made and our efforts to shape a healthier, more equitable world for all. With the right roadmap and a growing network of experts, we collectively have an enormous opportunity to move the field forward and dramatically improve the lives of patients and their families.

We know we can’t make these discoveries alone. Thank you to our network of research partners, collaborators, and supporters for the work you do.

We’ve made so much progress, but we still have a long way to go—I look forward to the work and collaboration ahead.

Sincerely,

ERIN HOFFMANN
PRESIDENT & CO-FOUNDER, ADDITIONAL VENTURES
In this report, we showcase our strategy in action and dive deep into our philosophy, approach, and—most importantly—impact.
Our Approach

Additional Ventures is on a **singular mission** to solve single ventricle heart disease—a complex condition with a spectrum of causes and outcomes. Complex challenges require comprehensive solutions. We knew there was a need for new research and more informed care—but more broadly, there was a need for a **clear path forward**.

Through our work, it has become clear that single ventricle care must be rooted in a fundamental understanding of the disease and built to overcome the complications and comorbidities that disrupt a patient's quality and duration of life. While both these conditions are necessary—we’re thinking bigger. We must concentrate on the development of solutions that deliver a **functional cure** rather than palliative treatment, enabled by collaboration of diverse fields with one unified vision.

We published our findings in partnership with our collaborators as a living **Research Roadmap**—a ten-year plan toward comprehensive, multidisciplinary, and programmatic solutions.

Our hope is that the roadmap will unite single ventricle research and clinical care by highlighting the various needs across sectors and aligning investments to meet them. While this roadmap is only the first step, our team and others can begin the hard work to shift the single ventricle research paradigm.

Now, we are capitalizing on the momentum within the single ventricle community and adjacent genomics, engineering, and regenerative medicine fields through strategic investment in discovery science, infrastructure, and research tools. Through our programs, we are helping to address fundamental questions about contributing molecular and cellular mechanisms, initiating factors and events, genetic risk, conduits for improved flow, de novo organ development, end-organ intervention, and much more.

Our vision for the future is clear: **Single ventricle solved.** We can only accomplish this through the thoughtful investment of time and resources into the most pressing scientific questions—recognizing that directions change over time as knowledge grows. We will continue to develop tailored solutions that fit the problem at hand and encourage bold, relentless scientific exploration until we achieve our goals.
The Research Roadmap to Solving Single Ventricle Heart Disease

Our findings in partnership with our collaborators produced a living ten-year plan toward comprehensive, multidisciplinary, and programmatic solutions.
Our Principles

Strategic investment can help us answer the biggest questions in science and medicine, including single ventricle heart disease. With this in mind, we developed our core principles, which guide us in both our decision-making and mindset as we advance on our mission to solve single ventricle:

- **IMPACT FOCUS**
  
  Guided by our Research Roadmap, we are focused on areas where we can have the most meaningful impact—incorporating burgeoning ideas and areas of study that are deemed unpopular, high-risk, or out-of-scope for other types of funding. This requires creative and critical consideration of research questions outside of a single area of expertise.

- **URGENCY**
  
  Single ventricle heart disease patients deserve answers. We operate with a sense of urgency befitting the problem, removing barriers, and altering methods to accelerate progress with intention.

- **COLLABORATION**
  
  Charting a new path will require inter- and multi-disciplinary cooperation from both single ventricle and non-single ventricle investigators. We provide guidance and support to create a new model of trust built on sharing and cooperative behaviors that transcend disciplines represented within our community.

- **AGILITY**
  
  Science is not static, and our programs are not either. As the Research Roadmap goals are implemented, we are responsive to the evolving nature of research—and adjust focus as appropriate. To do so, we are actively seeking out new ideas and feedback, and remain open to revising our processes.

We value both transparency and open science—and put those fundamental values into practice in our work. To promote openness and accessibility, we support the free flow of data and resources within our collaborative network and make findings (including null and incremental results) available to the broader community. We also support the inclusion of a broad variety of scientists with different backgrounds, funding levels, and experience.
Our Strategy

Guided by our Research Roadmap and our principles, we are executing a four-part strategy:

1. **MAKE TARGETED INVESTMENTS**
   Our grant programs are changing the game by making big and bold investments in specific research questions. They are thoughtfully designed to reimagine the future by reexamining processes to maximize our impact on both people and projects.

2. **SUPPORT TEAM SCIENCE**
   Great minds must work together across fields and disciplines to tackle the challenges within single ventricle disease. To move towards a functional cure, we recruited a team of nine scientists across eight institutions with a spectrum of expertise to work closely together over the next five years, taking a regenerative medicine approach to improve cardiac function and outcomes.

3. **BUILD FOUNDATIONAL RESOURCES**
   Foundational resources are required to ask and answer the most pressing questions in single ventricle science and care. We are supporting, building, and integrating datasets to create a comprehensive, open-access resource that will be available to the entire scientific and medical community.

4. **CREATE SCIENTIFIC COMMUNITY**
   Single ventricle research is a growing field with exciting potential and possibility. We are convening a series of events to create a platform for learning, a place for collaboration, and a stage for sharing.
Rethinking Targeted Investments: The Additional Ventures Method

Our 2020-2021 award programs include our flagship programs: the Single Ventricle Research Fund and Tools & Technology Expansion Awards. They also include our partnership programs: the Life Sciences Research Fund, Enduring Hearts Research Award, and the Innovation Funds. Our approach to all of our funding is:

- **Focused** on addressing the most pressing questions in the field.
- **Informed** by the most recent scientific and technological advances.
- **Driven** by our determination to offer support to both people and projects.
- **Strengthened** by our connections with the scientific community.

**HOW DO WE DESIGN OUR PROGRAMS?**

Each year, we choose a new topic or focus area for our award programs to ensure we are directing our efforts towards the right science at the right time—maximizing advancements and responding quickly as the field changes. To do so, we conduct assessments of the research landscape and consult with external experts, including our Scientific Advisory Board or our external partners (see page 13 to read more), to identify the best questions.

Our application processes are **targeted**, **thoughtful**, and **original**, just like our investigators’ work. The process enables applicants to showcase their unique team and commitment to the scientific community while highlighting how their work can drive knowledge and advancement in the single ventricle field.

“The importance and challenges of finding a functional cure for congenital heart defects are great. It requires a paradigm shift, one that enables physicians, scientists, and engineers to more freely share ideas, data, and technological advances. Additional Ventures is leading the way by promoting this promising multidisciplinary approach.”

**JAY HUMPHREY, PHD, SINGLE VENTRICLE RESEARCH FUND AWARDEE**
Science moves quickly, and so do our review processes. We recruit experts from relevant fields to ensure every proposal is assessed from diverse perspectives. We ask our reviewers to evaluate proposals with three key principles in mind: sound and significant science, collaborative approach, and commitment to advancing the field.

We support and celebrate our awardees, and we strive to be true partners throughout the scientific process for the duration of the award. We provide prompt, responsive feedback during our post-award management processes to engender trust and foster new avenues of thinking, and highlight our awardees in scientific community events like our Speaker Series (page 21) and Single Ventricle Investigator Meeting (page 22).

Our Single Ventricle Research Award is an annual program that provides significant financial support to investigators for research projects for up to three years. Each year, we review the field and select the topic that we feel will create an outsized impact. In 2020, we focused our program on non-invasive interventions and biomarkers, with an emphasis on multi-disciplinary approaches and teams. We received over 78 applications at the Letter of Intent stage and ultimately funded 17 outstanding proposals, adding 11 new investigators to the single ventricle community. We are also innovating in our post-award process, providing unique support through multiple opportunities for feedback from experts in-person and virtually, to make sure we are supporting recipients’ work every step of the way.

Our Tools & Technology Expansion Awards enable ‘piggyback’ funding to add new tools or technologies to existing studies already underway. Are you missing out on the new single cell RNA sequencing approach or a new collaborator down the hall? This creative award program allows teams to add additional approaches and new directions to their current work—even ones that weren’t around when the study began—in under two months’ time. In its inaugural year, we funded ten projects that we believe will springboard ongoing studies forward, faster.
Technologies for biological research are advancing at a breathtaking pace. New tools—combining chemistry and computer science—have now revealed a path toward creating a map of how defects in our DNA lead to defects in the heart. Support from Additional Ventures has allowed us to begin building such a genetic map of heart development.

JESSE ENGREITZ, PHD, INNOVATION FUND, TOOLS & TECHNOLOGY AWARDEE

Through a collaboration with a physician-scientist, Marlene Rabinovitch, we were encouraged to apply our lab’s expertise in stem cell and developmental biology to our understanding of single-ventricle heart disease. Working together has been a gratifying experience to learn more about what patients experience, and how cutting-edge stem cell tools might be applied to single-ventricle disease.

KYLE M. LOH, PHD, INNOVATION FUND AWARDEE

Collaborative science is not only more fun, but it is more fruitful. Mechanisms like the Additional Ventures Single Ventricle Research Fund are truly changing the trajectory of single ventricle research in a tangible and invaluable way—we are so excited to be a part of it all.

ANASTACIA (TASHA) GARCIA, PHD, SINGLE VENTRICLE RESEARCH FUND, TOOLS & TECHNOLOGY AWARDEE

Understanding the developmental origins of mental health risk and resilience in congenital heart disease requires team science. In strong partnership with families, we have brought together basic, translational, and clinical scientists from eight institutions to solve challenges that none of us can solve alone.

NADINE KASPARIAN, PHD, SINGLE VENTRICLE RESEARCH FUND AWARDEE
Our Strategy: Targeted Investments

Partner Programs: Collaborative Approaches for Transformative Change

ENDURING HEARTS

While heart transplantation has been life-saving for many infants and children born with congenital heart defects, including single ventricle, there are still many risks associated with this intervention. Enduring Hearts’ mission is to fund research that improves the quality—and increases the longevity—of life for pediatric heart transplant recipients, making the organization the perfect partner in this space.

Together, we launched a funding opportunity to stimulate innovative research focused on identifying, reducing, and eliminating pre- and post-transplant risk factors that affect outcomes of children born with complex congenital heart disease, including single ventricle heart defects.

LIFE SCIENCE RESEARCH FOUNDATION

The Life Sciences Research Foundation (LSRF) supports exceptional postdoctoral researchers in all areas of basic life sciences discovery. We’ve partnered with the LSRF to extend our support to outstanding individuals making waves in basic and molecular science. The Foundation is developing tools and analyses that change the way we think about and incorporate basic science in our understanding of single ventricle biology.

ADDITIONAL VENTURES INNOVATION FUNDS

In collaboration with five outstanding research institutions, we launched the Additional Ventures Innovation Funds with the goal of accelerating scientific discoveries and improving our understanding of single ventricle heart defects and the development of functional cures.

Each institution uses these funds to seed high-risk projects that yield outsized, long-term impact. While the partner institutions work together and share knowledge, each manages their funds independently—leveraging unique knowledge, infrastructure, and talent to promote the best research.
Finding a **functional cure** is central to solving single ventricle heart disease, but no one scientist, lab, or even field can do this alone.

That’s why we created the Cures Collaborative: a multidisciplinary team of nine investigators across eight institutions brought together to develop a regenerative medicine solution that can improve cardiac function and reduce poor outcomes. Over the next five years, the team will work together with the members of their labs to accelerate the pace of science using an integrated approach that tackles the problem from all sides.

The Cures Collaborative is a unique model, built to:

- Keep pace with the changing needs of scientific discovery.
- Allow for rapid evaluation of results and changing directions.

Sharing and engaging regularly is critical to the success of the group. Team members and their labs regularly meet to conduct experiments, discuss details and findings, and plan next steps.

Together, team members determine overall research direction, developing group and individual research plans every six months, which the entire team reviews and approves.

Members share a pool of funds each year, which is divided based on the needs of each lab or project during each six-month period.

The Cures Collaborative Co-Directors **Dr. Chris Breuer** and **Dr. Tain-Yen Hsia** provide organizational and strategic support.
**TOP DOWN GROUP**

Their goal is to generate a large animal Fontan model to use as both a testing bed for regenerative medicine solutions as well as an input for creating a computational model to predict the best solutions to test.

- **The Breuer Lab**
  is developing a large animal survival model to understand how the body reacts in response to the Fontan surgery—and test potential solutions.

- **The Davis Lab**
  is focusing on the molecular and cellular level to identify biomarkers that indicate change after the Fontan surgery.

- **The Humphrey Lab**
  is utilizing a small animal model to design a computational model that helps identify how the vascular system grows or changes post-Fontan.

- **The Marsden Lab**
  is designing computational models to understand how changes in flow from the Fontan surgery affect the circulatory system.

**BOTTOM UP GROUP**

Their primary goal is to create appropriate cellular starting materials and generate a tissue-engineered conduit to assist Fontan circulation.

- **The Chi Lab**
  is focusing on identifying molecular pathways that transform stem cells into specific heart cell types to create the building blocks for new solutions.

- **The Feinberg Lab**
  is creating 3D printing techniques and tissue engineering platforms for future regenerative medicine solutions.

- **The Rentschler Lab**
  is optimizing protocols that create certain types of heart cells from stem cells—and ensuring they are functional and mature.

- **The Skylar Scott Lab**
  is developing scalable cell differentiation strategies so as not to limit the team in the types of solutions they create.

---

Professional Research Assistants (left to right): Angela Baybayon-Grandgeorge, BS, Valerie Olsen, BS, Ashley Pietra, BS, Garcia & Nakano Labs at the University of Colorado-Anschutz Medical Campus

Wild Type Fibroblast, Jacob Zbinden, Nationwide Children’s Hospital
Project Singular: Building the Foundation for Research and Discovery

What causes a condition like single ventricle? Is it genetics, environment, or other factors? Why do patients experience it differently?

There are far too many questions surrounding single ventricle heart defects and not enough answers. Researchers and clinicians need a clear, fundamental understanding of what causes and complicates single ventricle to be able to prevent and treat it—and they’re currently operating without a full picture of the disease. To reach that understanding, we need to build a foundation for research and discoveries with data.

This is why we established Project Singular, a research study to build a large-scale genetic database of single ventricle patients and their immediate family members. This will help us identify the underlying genetic elements that contribute to the development of single ventricle heart defects and their related outcomes.

Our success is driven by three guiding principles:

- A balance of open data access principles while protecting patient privacy.
- Rigorous support of other single ventricle registry efforts through data sharing.
- Leading by example to promote collaboration, transparency, and data democratization.
Project Singular can only be successful with the needs of patients and families at the core of everything we do.

With patients and families as our partners, we can build a robust dataset and promote extensive research that may one day change the trajectory of single ventricle heart disease.

Honor our participants’ generosity by requiring our partners, users, and others to join us in utilizing the FAIR data principles, so that data is democratized amongst all investigators, fields, and sectors. All codes and findings must be shared, while ensuring anonymity and privacy of all participants through a rigorous de-identification process.

We are working with the Broad Institute of MIT and Harvard, a biomedical research institution, to sequence patients and build our platform for data entry and analysis. Another partnership with Boston Children’s Hospital will help us provide support for the study and its participants.

We are optimistic that this one-of-a-kind dataset will reflect the full picture of single ventricle heart defects, helping us understand why they develop and providing a clearer path toward a functional cure.
Our Strategy: Building Foundational Resources

Integrated Datasets to Strengthen the Foundation for Single Ventricle Research

Our field must work **together** to create integrated, robust datasets to ask and answer the most pressing questions in single ventricle. In addition to Project Singular, we support and fund other initiatives that, together, can provide a launching pad to understand single ventricle:

**ADVANCED CARDIAC THERAPIES IMPROVING OUTCOMES NETWORK (ACTION)**

ACTION is a collaborative learning network of more than 50 cardiac care centers across the globe, working together to improve care and outcomes for congenital heart disease patients who are in heart failure, many of whom have single ventricle defects. We are funding initiatives to improve the timely referral of patients to transplant centers, stabilize the medical conditions of the listed patients, and improve donor/recipient transplant matching.

**FONTAN OUTCOMES REGISTRY USING CMR EXTRactions (FORCE)**

FORCE is a newly-launched and rapidly-growing network of cardiac centers sharing retrospective imaging and clinical data in order to predict outcomes for single ventricle patients. FORCE will develop machine-learning algorithms to guide customized decision-making about when and how to introduce medical interventions. We are providing startup funding for this innovative registry.

**FONTAN OUTCOMES NETWORK (FON)**

The Fontan Outcomes Network is a soon-to-be-launched longitudinal, lifespan registry and collaborative learning network focused on improving the longevity and quality of life for single ventricle patients. The Network’s goal is to optimize patient physical health and functioning, neurodevelopmental outcomes, and mental health and resilience. We are providing funding to build and launch the registry and the learning network with twelve pilot cardiac care centers.
“Only through collaboration can we take advantage of all of the latest approaches in science and engineering to accelerate new cures for single ventricle defects.”

MARK SKYLAR-SCOTT, PHD, INNOVATION FUND Awardee

“Finding solutions from basic science, physics, engineering, and beyond will come from a collaboration from inside and outside the field.”

JANE NEWBURGER, MD, MPH, SCIENTIFIC ADVISORY BOARD MEMBER

“Ramping up scientific momentum in a new area requires a combination of young and seasoned investigators, taking a bold step and new idea into uncharted territory.”

MARLENE RABINOVITCH, MD, INNOVATION FUND Awardee

“Language and technology change so rapidly. It’s a challenge to keep up. Bringing scientists on rounds inspires both groups. Bridging the gap doesn’t happen by chance. You have to make it happen.”

DEEPAK SRIVASTAVA, MD, SCIENTIFIC ADVISORY BOARD MEMBER & INNOVATION FUND Awardee
Single ventricle heart defects are tough to tackle in the clinic. Next-generation solutions will only come from the meritorious work and collaborative communication between physicians and scientists.

MINGTAO ZHAO, DVM, PHD, INNOVATION FUND, SINGLE VENTRICLE RESEARCH FUND, TOOLS & TECHNOLOGY AWARDEE

Meeting and connecting with other Additional Ventures scientists at the Single Ventricle Investigator Meeting and beyond catalyzed new projects focused on early cardiac development.

SUSAN LIAO, PHD, TOOLS & TECHNOLOGY, LIFE SCIENCES RESEARCH FOUNDATION AWARDEE

When basic scientists and clinicians work together effectively, their combined efforts amplify the skills of each to accelerate translational science and medicine.

R. MARK PAYNE, MD AND THOMAS O’CONNELL, PHD, SINGLE VENTRICLE RESEARCH FUND, TOOLS & TECHNOLOGY AWARDEES

With the support of the SVRF, we have truly taken translational science to heart—there is a genuine interplay of basic science and clinical medicine on a daily basis.

STEPHANIE NAKANO, MD, SINGLE VENTRICLE RESEARCH FUND AWARDEE
Creating Community

We’re working to unite the scientific field—across disciplines—around single ventricle work. We created touchpoints for the investigator community to share information in a useful way.

Our Additional Ventures Speaker Series and annual Single Ventricle Investigator Meeting allow for diverse investigators to share knowledge, identify challenges, and exchange ideas to inspire innovative approaches to this complex disease.

Speaker Series: Building a Connected Community

HOW IT STARTED

The Speaker Series began as a small gathering of single ventricle-centric researchers and clinicians participating in biweekly ‘Lunch & Learn’ sessions. It quickly grew into an interactive meeting of over 130 multidisciplinary investigators committed to advancing our understanding of single ventricle heart disease.

GROWING OUR COMMUNITY

The Next Generation of Science in Single Ventricle

In this biweekly seminar series, each session addressed ongoing research efforts in key knowledge gap areas identified on our Research Roadmap. In Part I of the series, we heard the most promising early career researchers in the single ventricle field present on topics including genetics and biomarker discovery, stem cell and tissue engineering approaches, mathematical and computational models, and clinical interventions.

In Part II, we continued to showcase the next generation of science and scientists by highlighting our own Additional Ventures awardees. They introduced their varied research projects addressing single ventricle etiology, biology of outcomes, clinical sequelae, and functional cures in dynamic virtual sessions.
Our Strategy: Creating Community

Single Ventricle Investigator Meeting: a Platform for Collaboration

We held the first annual Single Ventricle Investigator Meeting (SVIM) March 9-10, 2021—the largest event of its kind for this research community. We welcomed scientists, engineers, clinicians, and other single ventricle researchers to the two-day virtual meeting where they explored the intersection of basic science, translational medicine, engineering, and clinical care in single ventricle heart disease.

During the conference, we welcomed over 70 speakers across disciplines and utilized multiple formats for presentation and conversation. We were thrilled to have over 300 registrants committed to creating an interactive, dynamic scientific event centrally focused on advancing single ventricle research.

AT SVIM, ATTENDEES:

- **Listened** to renowned experts on the current state of science, clinical care, and patient care journeys for single ventricle heart disease.
- **Discussed** key topics through expert panel and audience participation in data sharing, registry building, and data democratization.
- **Heard** from a range of experts across four focus areas: Etiology Mechanisms and Models; Predicting, Preventing, and Addressing Clinical Sequelae; Biology of Outcomes; and the Development of Functional Cures in single ventricle.
- **Showcased** new talent and experienced investigators together during our Lightning Rounds—rapid fire talks highlighting the latest findings in basic science, clinical research, and engineering within single ventricle heart disease.
What’s Next?

2020-2021 was a big year for us (our first full year!), and a big one for the world. We’ve made tremendous progress during a year that brought so many challenges—both professional and personal—for everyone.

And we’re just getting started.

We’re looking to the horizon for inspiration while also reflecting on our past—our successes and our learnings—to continually serve our communities better.

In our next year, we will deepen our commitments to single ventricle communities through new programs and initiatives to serve patients and families, grow depth and breadth in our research community, and support collaboration and connection, holistically and sustainably.

SOME EXCITING UPCOMING EVENTS AND ANNOUNCEMENTS:

► **Project Singular launch:** In early 2022, we will launch Project Singular and begin recruiting efforts to build the largest genetic repository of single ventricle patients in the world.

► **Catalyst to Independence Award:** Support for the next generation of scientists means investment in the future of the field. Stay tuned for the launch of our early career fellowship program, offering support for postdocs to transition to new faculty and jumpstart their own labs.

► **Education and collaboration:** Join us for the next iterations of our Speaker Series this Fall, opportunities for professional development at every level, and our first in-person open event: the Single Ventricle Investigator Meeting, coming Fall 2022.
In 2020, we committed over $26.5M in funding for research and infrastructure development, all focused on our four strategic pillars.

**Impact by the Numbers**

**TOTAL INVESTMENTS IN OUR RESEARCH PORTFOLIO**

$26.5M

- **Targeted Investments**
  - **$18.7M**

- **Supporting Team Science**
  - **$2M**

- **Building Foundational Resources**
  - **$5.6M**

- **Creating Community**
  - **$250K**
These research priorities are guided by our Research Roadmap. In 2020, we focused our annual grant program primarily on the development of biomarkers related to single ventricle outcomes—but we take a balanced approach to ensure we are seeding research and development across our portfolio.

**Roadmap Progress: By-the-Numbers**

**$23.5M**

**64 STUDIES FUNDED**

<table>
<thead>
<tr>
<th>Category</th>
<th>Number of Studies Funded</th>
<th>Funding</th>
</tr>
</thead>
<tbody>
<tr>
<td>DATA &amp; ANALYTICS INFRASTRUCTURE</td>
<td>6</td>
<td>$3M</td>
</tr>
<tr>
<td>ETIOLOGY OF SINGLE VENTRICLE</td>
<td>12</td>
<td>$3M</td>
</tr>
<tr>
<td>BIOLOGICAL MECHANISMS OF OUTCOMES</td>
<td>20</td>
<td>$8M</td>
</tr>
<tr>
<td>ADDRESS CLINICAL SEQUELAE</td>
<td>9</td>
<td>$5M</td>
</tr>
<tr>
<td>DEVELOP FUNCTIONAL CURES</td>
<td>16</td>
<td>$4.5M</td>
</tr>
</tbody>
</table>

**EVERY ONE OF THESE IMPORTANT INVESTMENTS** brings our scientific community one step closer towards finding a functional cure for single ventricle and improving the lives of patients and families.
Our Team

SINGLE VENTRICLE TEAM

ERIN HOFFMANN
President & Co-Founder,
Additional Ventures

KIRSTIE KELLER, PHD
Vice President of Programs

KAITLIN DAVIS, PHD
Program Manager,
Research and Grants

DIANE PICKLES
Program Director,
Project Singular

COURTNEY STEGER, PHD
Program Officer,
Scientific and Community Engagement

SCIENTIFIC ADVISORY BOARD

CHRISTOPHER K. BREUER, MD
Director of the Center for Regenerative Medicine
and Endowed Chair in Surgical Research,
Nationwide Children's Hospital
Director of Tissue Engineering, The Ohio State University

RACHAEL CORDINA, MD, PHD
Clinical Academic Cardiologist, University of Sydney
and Royal Prince Alfred Hospital
Clinical Senior Lecturer, University of Sydney

ANTHONY B. FIRULLI, PHD
Endowed Professor of Pediatrics,
Indiana University School of Medicine

TAIN-YEN (T-Y) HSIA, MD
Professor of Surgery, University College London
Professor of Surgery, University of Central Florida
Pediatric Cardiac Surgeon,
Arnold Palmer Hospital for Children

ALISON MARSDEN, PHD
Professor of Pediatrics – Cardiology and Bioengineering,
Stanford University

JANE NEWBURGER, MD, MPH
Commonwealth Professor of Pediatrics,
Harvard Medical School
Associate Cardiologist in Chief for Academic Affairs,
Boston Children’s Hospital

ANTHONY PHILIPPAKIS, MD, PHD
Chief Data Officer, Institute Scientist,
Broad Institute of MIT and Harvard

DAVID ROSENTHAL, MD
Professor, Pediatric Cardiology
Director, Pediatric Heart Failure and Transplantation,
Stanford University School of Medicine and Lucile Salter
Packard Children’s Hospital

DEEPAK SRIVASTAVA, MD
President, Gladstone Institutes
Professor, University of California, San Francisco
“We know we can’t make these discoveries alone. Thank you to our network of research partners, collaborators, and supporters for the work you do.”

ERIN HOFFMANN
PRESIDENT & CO-FOUNDER, ADDITIONAL VENTURES