Dear Colleagues,

As we enter the holiday season, I would like to highlight a few key events and announcements that are featured in this newsletter. The CVRI will host invited speaker Dr. Stanley Nattel from the University of Montreal for the third annual Dr. Mark L. Entman Distinguished Lecture in Cardiovascular Research. Dr. Nattel's seminar will be hosted on December 7, 2022, at noon in Cullen Auditorium. I hope to see you all there!

The CVRI is also kicking off the term 3 graduate school course entitled Cardiovascular Diseases (GS-DD-6210), which will run from January 3, 2023 until March 3, 2023. This course provides a general overview of the most common types of cardiovascular disease and is taught by CVRI faculty. Please alert your students, postdocs, and staff members to this course.

Additionally, I would like to congratulate CVRI Associate Director, Dr. Biykem Bozkurt, on her newly appointed role as Senior Dean of Faculty. As Senior Dean of Faculty, in addition to her former leadership role in the Office of Faculty Affairs and Faculty Development, Dr. Bozkurt will now also be responsible for the Office of Diversity, Equity, and Inclusion (DEI) and the Office of Professionalism.

Members of the CVRI have had numerous achievements that are highlighted throughout the Fall 2022 Newsletter. I look forward to what's to come throughout the remainder of the year!

Best wishes,

Xander Wehrens, MD, PhD
Texas Children's Hospital (TCH) houses a plethora of physicians, surgeons, and research faculty who are world-renowned leaders in pediatric cardiology, congenital heart surgery, cardiovascular anesthesiology, and cardiac intensive care. Ranking #2 in the nation by U.S. News & World Reports, TCH remains a top-notch hospital for pediatric care.

Recently, we caught up with Lara Shekerdemian, MD, who was announced in September as the Chair of the Department of Pediatrics at Baylor. Dr. Shekerdemian joined Baylor in 2011 and is a Professor of Pediatrics in the division of critical care and pediatrician-in-chief at TCH. She earned her medical degree from the University of Birmingham Medical School in the United Kingdom and trained in pediatrics, pediatric cardiology, and pediatric and adult intensive care in the U.K. and Toronto. She completed her research thesis on patients with congenital heart disease (CHD) who had cardiac surgery. Following completion of training, she moved to Melbourne, Australia to become the Chief of the Intensive Care Unit at The Royal Children's Hospital in Melbourne Australia where she worked on the Hearts and Mind Study and received a grant from the National Heart Foundation of Australia to study brain injury in children after cardiac surgery.

Currently, Dr. Shekerdemian is focused on outcomes research in patients who have gone through cardiac surgery. With the support of Dr. Daniel Penny, Chief of Pediatric Cardiology, Shekerdemian has built a cardiac developmental outcomes program. The program follows patients who have had cardiac procedures during the first six months of life throughout childhood into adulthood to study how they are progressing developmentally. The program is clinically relevant, providing a service to the patients that allows for early clinical interventions. Patients who have surgery receive MRI scans before and after, which has enabled the clinicians to develop a registry of scans to review for signals that identify risk and help to better time surgery. The database provides the opportunity to study various associations between vital signs, drug therapies, and assess changes in neurodevelopment in babies post-surgery.

Additionally, Dr. Shekerdemian is an investigator of the Baylor/Texas Children's Hospital Pediatric Heart Network (PHN). Baylor/Texas Children's is one of 9 core funded centers that seek to perform research from bench to bassinet, to childhood, to adulthood. The goal of the PHN at the TCH Heart Center is to evaluate therapeutic and management strategies for children and adults with congenital heart defects and for children with inflammatory disease, heart muscle disease, and arrhythmias through multicenter clinical research. TCH supports the program overall by utilizing its robust patient population for potential study enrollment in order to identify, enroll, and retain participants in multi-center clinical trials. Junior faculty are also afforded the opportunity to work on various studies and participate in writing committees as data are published.

Among her many accomplishments, Dr. Shekerdemian is most proud of the work that she has been able to do as Chair of the PHN Scholars Program, which offers funding awards for pilot studies to outstanding young researchers in the field of translational, clinical, health services, or epidemiological pediatric cardiovascular disease or adult congenital heart disease. The program is focused on career development to train the next generation of clinician-scientists in pediatric cardiology-related research. In her new role as department chair, Dr. Shekerdemian aims to build a strong team of clinicians and key people who will bolster the clinical efforts at TCH and strengthen an already exceptional clinical service in long-term cardiac care and in the ICU.

By: Amber Eakin
I am really happy with my decision to come to Baylor College of Medicine. Here, I’m able to leverage the expertise and knowledge of my hosts to achieve my PhD thesis objectives. Thanks to the Wehrens lab team, I have learned unique techniques that will contribute to my professional experience giving me valuable knowledge to continue my research career with enthusiasm and commitment.”

– Marta Gil Fernandez
Dr. Shaine Morris was honored by the Marfan Foundation and received the Hero with a Heart Award at the 2nd Annual Heart works Gala Houston on Sept. 24, 2022.

Scott LeMaire, MD
Appointed President-elect of the Texas Surgical Society

The term as the 108th president will occur in 2024. Baylor College of Medicine faculty who are past presidents of the society include George Jordan, Jr., M.D.; Charles McCollum, M.D.; Kenneth Mattox, M.D.; and Joseph Coselli, M.D.
Vaibhav Deshmukh (James Martin lab) and Justin Courson (Rolando Rumbaut lab) received 1st and 2nd place in the 2022 MicroWorld Top 10 Images competition from the American Society for Microbiology.

1st Place

Vaibhav Deshmukh

“Cytoskeleton of a dividing mouse myoblast.”

C1C12 cells stained with alpha-tubulin (cyan), F-actin (orange) and DAPI (magenta).

2nd Place

Justin Courson

“Fields of Blood”

This image depicts a field of red blood cells (red) found amongst cellular debris (blue) and covered in a thick layer of fibrin (brown). While this is considered to be a fibrin-rich clot, a pair of platelets (magenta) can still be seen peeking through the tangle in the bottom-most region of the image. This image was captured using a scanning electron microscope and pseudocolored in post (20 x 20 µm).
CVRI Members Recognized by Clarivate as Highly Cited Researchers in 2022

These Highly Cited Researchers have demonstrated significant and broad influence reflected in their publication of multiple highly cited papers over the last decade. Their highly cited papers rank in the top 1% by citations for a field or fields and publication year in the Web Of Science.

Congratulations!!

- Christie Ballantyne, MD  
  Category of Clinical Medicine
- Richard Gibbs, PhD  
  Category of Cross-Field
- Joseph Petrosino, PhD  
  Category of Cross-Field

Dr. Lola Xie, and Dr. Ajith Nair, Assistant Professors in Cardiology, along with Advanced Heart Failure fellow Dr. Matthew Riesbeck, successfully implanted the Cardionomics cardiac pulmonary nerve stimulator (CPNS). This is the 3rd implant by the BCM Advanced Heart Failure team of this novel device for the treatment of acute decompensated heart failure (ADHF). BCM is one of the 14 international sites for the STOP-ADHF study, which is evaluating the safety and efficacy of the CPNS system in patients with ADHF.

Dr. Biykem Bozkurt, Associate Director of the CVRI has recently assumed the role of Senior Dean of Faculty at BCM. In addition to her former leadership role in the Office of Faculty Affairs and Development, the Office of Diversity, Equity, and Inclusion (DEI) and the Office of Professionalism will fall under her purview. Dr. Bozkurt and leadership team members in these offices will lead initiatives to support the professional development, academic progression, and career advancement of Baylor faculty members through their faculty life cycle. These new initiatives are meant to enhance faculty’s effectiveness as educators, clinicians, investigators, administrators, and leaders while fostering excellence in diversity, equity, and inclusion, and supporting the institutional mission.
Inflammatory Signaling in Atrial Cells- A Unifying Concept and Novel Therapeutic Target in Atrial Fibrillation?

WEDNESDAY | DECEMBER 7, 2022

12:00 - 1:00 p.m. | Cullen Auditorium

Reception
1:00 – 1:45 p.m. | Rayzor Lounge

STANLEY NATTEL, MD
Professor of Medicine
Paul-David Chair in Cardiovascular Electrophysiology
University of Montreal
Director
Electrophysiology Research Program
Montreal Heart Institute

Summary: Recent work emanating from a variety of labs, including important contributions from Baylor, points to the novel idea that heart cells themselves can house inflammatory signaling that plays an important role in AF development. Evidence has emerged that components of the NLRP3 inflammasome system show enhanced priming and triggering in a range of clinical and experimental AF paradigms, and that NLRP3 activation may underlie the development of the substrate supporting AF in many different clinical contexts. Furthermore, there may be druggable targets based on this system that can be exploited clinically.

Objectives:
- To understand the basic features of the NLRP3 inflammasome system and the signs of its priming and activation.
- To appreciate the evolving literature about atrial cardiomyocyte-delimited inflammatory signaling and its potential role in AF.
- To learn about the concept of active inflammation resolution and the evidence suggesting that it might be able to be exploited therapeutically in AF.

The Mark L. Entman, MD, Distinguished Lecture in Cardiovascular Research was established in 2019 to honor Dr. Entman’s extensive contributions to cardiovascular research at Baylor College of Medicine.

Hosted by the Cardiovascular Research Institute, this annual lectureship showcases leading experts from across the globe for the TMC and CVRI communities to advance cardiovascular science research and new collaborative opportunities. CME credit available.
10th ANNUAL CVRI SYMPOSIUM

SAVE THE DATE
Cardiovascular Research Institute (CVRI)

10TH ANNUAL SYMPOSIUM

WEDNESDAY APRIL 5, 2023

KEYNOTE SPEAKER
Jeffery D. Molkentin, Ph.D.
Director, Division of Molecular Cardiovascular Biology
Executive Co-Director, Heart Institute
Professor, University of Cincinnati Department of Pediatrics
Cincinnati Children’s Hospital Medical Center

ONE BAYLOR PLAZA
Cullen Auditorium

www.bcm.edu/cvri
modRNA Therapeutics vs. hiPSC-derived Cell & Cell-products for Myocardial Repair in Large Mammals: Remuscularization of Injured Ventricle

Jianyi Jay Zhang, MD, PhD
Professor
Medicine & Engineering
T. Michael and Gillian Goodrich Endowed Chair of Engineering Leadership
Professor and Chair
Biomedical Engineering
University of Alabama at Birmingham

Objectives:
At the conclusion of the session, participants should be able to:

- Describe novel applications of mRNA-based therapeutics.
- Review how cell and cell products could become treatment options for cardiovascular disease in the future.
- Discuss the major roadblocks in cardiac cell therapy and the potential approaches to overcome these problems.

Host: Lilei Zhang, MD, PhD

The James T. Willerson, MD Cardiovascular Sciences Seminar Series is a collaborative program organized by the Texas Heart Institute & Cardiovascular Research Institute at Baylor College of Medicine. Together we aim to honor Dr. Willerson’s significant contributions to cardiovascular science and education. This seminar series is at no cost to attend and is open to all interested in cardiovascular sciences. Email cvri@bcm.edu for further details. CME credit provided.

Location:
1 Baylor Plaza
DeBakey Center
Kleberg Auditorium

Wednesday, Dec. 14, 2022
11 am – 12 pm
We are grateful for a successful 2022 in-person fall seminar series and our partnership with the Texas Heart Institute. Thank you to our speakers, faculty, trainees, and staff for supporting the James T. Willerson, MD Cardiovascular Sciences Seminar Series.

August 31, 2022

David Durgan, PhD
Assistant Professor
Depts. of Integrative Physiology & Anesthesiology
Baylor College of Medicine

"Blood Pressure Regulation: A Microbial Perspective"

Pictured (L-R) Drs. Xander Wehrens, Romain Harmancey, Heinrich Taegtmeyer & David Durgan

September 21, 2022

Camila Hochman-Mendez, PhD
Assistant Investigator & Director
Regenerative Medicine Research and Biorepository Core
Texas Heart Institute

"There and Back Again: From a Cadaveric to Bioengineered Heart"

Pictured: (Front L-R) Drs. Camila Hochman-Mendez, Fernanda Paccola Mesquita & Xander Wehrens
(Back L-R) Drs. Mark Entman, Darren Woodside & team members at the Texas Heart Institute

September 28, 2022

Zheng Sun, PhD
Associate Professor
Depts. of Medicine, Endocrinology Diabetes and Metabolism; Molecular & Cellular Biology
Baylor College of Medicine

"Circadian Clock, Dawn Phenomenon, Obesity Paradox"

Pictured (L-R) Drs. Zheng Sun, Heinrich Taegtmeyer, Mark Entman & Christie Ballantyne
October 12, 2022
Mark Drazner, MD
Professor & James M. Wooten
Chair in Cardiology
Dept. of Internal Medicine
UT Southwestern Medical Center

"The Clinical Examination in Patients with Heart Failure: New Insights"

Pictured: (L-R) Drs. Mark Drazner & Xander Wehrens

Pictured: Fellows from the Texas Heart Institute

October 19, 2022
Jonathan Kirk, PhD
Associate Professor & Vice Chair
Cell and Molecular Physiology
Loyola University Chicago, Stritch School of Medicine

“Cardiac Sarcomere Protein Quality Control and BAG3: Repairing the Engine without Stopping the Car”

Pictured: Jonathan Kirk, PhD

October 26, 2022
Daniel Rader, MD
Professor & Chair, Genetics
University of Pennsylvania, Perelman School of Medicine

“A Genome-first Approach to Cardiometabolic Disease”

Pictured: Top row (L-R) Drs. Aj Marian, Baiba Gillard & Xander Wehrens
Middle row: Drs. William Lagor, Daniel Rader, Carl Walther
Bottom row: Drs. Christie Ballantyne, Henry Pownall
November 30, 2022

**Ken Walsh, PhD**
Lockhart B. McGuire Professor  
Director, Hematovascular Biology Center  
Professor, Biochemistry & Molecular Genetics  
Cardiovascular Medicine  
Robert M. Berne Cardiovascular Research Center  
University of Virginia – School of Medicine

“**Somatic Mosaicism, Clonal Hematopoiesis and Cardiovascular Disease**”

Pictured: (L-R) Drs. A.J. Marian & Ken Walsh

November 2, 2022

**Kristin Stanford, PhD**
Associate Professor, Physiology and Cell Biology  
Associate Director, Diabetes Metabolism Research Center  
The Ohio State University  
College of Medicine

“**New Mechanisms for Brown Adipose Tissue to Regulate Cardiovascular Health**”

Pictured: (L-R) Drs. Kristin Stanford & Yuriana Aguilar-Torres

Pictured: (L-R) Drs. Yuriana Aguilar-Torres, Angela Chen, Yong Xu, Kristin Stanford, Xander Wehrens & BCM team members
The James T. Willerson, MD Cardiovascular Sciences Seminar Series continues in Spring 2023. In collaboration with Texas Heart Institute, these seminars are in-person and held at Baylor College of Medicine on select **Wednesdays at noon**. Visit the CVRI website for more seminars in the spring. CME credit is available to eligible attendees.

**January 11**  
*Kyle Eagen, PhD*  
Assistant Professor & CPRIT Scholar in Cancer Research  
Department of Molecular & Cellular Biology  
Center for Precision Environmental Health  
Baylor College of Medicine

**January 25**  
*Onur Kanisiak, PhD*  
Assistant Professor  
Department of Pathology & Laboratory Medicine  
University of Cincinnati  
College of Medicine

**February 1**  
*Javid Moslehi, MD*  
Associate Professor in Residence  
Department of Medicine  
Chief  
Cardio-Oncology & Immunology Program  
University of California San Francisco

**March 8**  
*Jiang Chang, MD, PhD*  
Professor and Deputy Director, Chancellor EDGES Fellow  
Center for Genomic & Precision Medicine  
Institute of Biosciences and Technology  
Texas A&M University  
College of Medicine

**March 15**  
*Romain Harmancey, PhD*  
Associate Professor  
Cardiovascular Medicine  
Department of Internal Medicine  
University of Texas Health Houston  
McGovern Medical School
Graduate School of Biomedical Sciences Cardiovascular Courses

The Cardiovascular Research Institute offers 3 graduate courses open to PhD students, postdocs, trainees, staff, and all others interested in cardiovascular sciences. Lectures are in person.

For those interested in these courses, there are 2 ways to sign up and participate.

- Enroll with the GSBS for full credit and grade (tests, surveys, and attendance required).
- Audit the course through GSBS for credit (surveys and attendance required for credit; no tests or letter grade assigned).

Email cvri@bcm.edu for further details

Term 3

Cardiovascular Diseases | GS-DD-6210

2 Credits January 3 – March 3, 2023

This course provides a general overview of the main, common cardiovascular diseases and their causes. Topics covered include atherosclerosis, hypertension, congenital heart disease, ischemic heart disease, cerebral stroke, cardiac arrhythmias, and the effects of aging on the cardiovascular system.

Course Director: Xander Wehrens, MD, PhD

Registration Nov. 21 - Dec. 2, 2022

Term 4

Advanced Topics in Cardiac Pathophysiology & Disease | GS-DD-6403

4 Credits March 13 – May 12, 2023

This course covers the fundamentals of cardiac development, and cardiac function in both physiological and pathological conditions. The course will also discuss the cutting-edge research approaches used in cardiovascular research.

Course Directors: Na Li, PhD & Xander Wehrens, MD, PhD

Registration Feb. 13- 24, 2023

Term 5

Advanced Topics in Vascular Pathophysiology and Disease | GS-DD-6403

4 Credits May 22 – July 21, 2023

This course covers the fundamentals of cardiac development, and cardiac function in both physiological and pathological conditions. The course will also discuss the cutting-edge research approaches used in cardiovascular research.

Course Directors: William Lagor, PhD & Xander Wehrens, MD, PhD

Registration April 24- May 5, 2023
Webinars are available for further information about upcoming AHA Research award offerings, application tips, and the peer review process.

<table>
<thead>
<tr>
<th>Program Awards</th>
<th>Pre-proposal Deadline</th>
<th>Proposal Deadline</th>
<th>Award Start Date</th>
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<tbody>
<tr>
<td><strong>Innovative Project Award</strong></td>
<td>Dec. 2, 2022</td>
<td>Mar. 10, 2023</td>
<td>Jul. 1, 2023</td>
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<tr>
<td>Supports highly innovative, high-impact research that could ultimately lead to critical discoveries or major advancements that will accelerate the field of cardiovascular and/or cerebrovascular research. The idea proposed here should not have been submitted in whole or in part in a previous proposal for AHA support.</td>
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<tr>
<td><strong>AHA Institutional Research Enhancement Award (AIREA)</strong></td>
<td>Dec. 7, 2022</td>
<td>Apr. 1, 2023</td>
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<td>Stimulates research at educational institutions that provide baccalaureate or advanced degrees related to scientific research training. Eligible institutions may not have been major recipients of NIH support. Awards provide funding for small-scale research projects related to cardiovascular diseases and brain health, enhancing the research environment at eligible institutions, and exposing students to research opportunities.</td>
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<td><strong>Career Development Award</strong></td>
<td>Dec. 8, 2022</td>
<td>Apr. 1, 2023</td>
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<td>Supports highly promising healthcare and academic professionals in the early years of first professional appointment to assure the applicant’s future success as a research scientist in the field of cardiovascular and/or cerebrovascular disease research.</td>
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<td><strong>Research Supplement to Promote Diversity in Science</strong></td>
<td>Feb. 1, 2023</td>
<td>Apr. 1, 2023</td>
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<td>Under the mentorship of current AHA awardees, this mechanism supports research experiences for predoctoral and postdoctoral fellows from Trunderrepresented racial and ethnic groups in science.</td>
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<td><strong>Transformational Project Award</strong></td>
<td>Feb. 16, 2023</td>
<td>Jul. 1, 2023</td>
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<td>Supports highly innovative, high-impact projects that build on work in progress that could ultimately lead to critical discoveries or major advancements that will accelerate the field of cardiovascular and/or cerebrovascular research. Research deemed innovative may be built around an emerging paradigm, approaching an existing problem from a new perspective, or exhibit other uniquely creative qualities.</td>
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### ADDITIONAL FUNDING OPPORTUNITIES

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<tr>
<th>Funding Opportunity</th>
<th>Application Deadline</th>
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<tr>
<td>Pfizer Research Grant RFP 2022/2023 Global Cachexia ASPIRE*</td>
<td>Due: Thursday Jan. 5, 2023</td>
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<tr>
<td>National Medical Fellowships</td>
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<tr>
<td>NMF Diversity in Clinical Trials Research Program</td>
<td>Due: Monday, Dec. 19, 2022</td>
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<tr>
<td>The Keith Michael Andrus Cardiac Research Award</td>
<td>LOI Due: Jan. 15, 2023</td>
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<tr>
<td>Lasker Foundation Awards</td>
<td>Due: February 6, 2023</td>
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<tr>
<td>Now accepting nominations for the 2023 Lasker Awards</td>
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#### THE INTERNATIONAL SOCIETY FOR HEART AND LUNG TRANSPLANTATION

A Society that Includes Basic Science, the Failing Heart and Advanced Lung Disease.

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<tr>
<th>Funding Opportunity</th>
<th>Application Deadline</th>
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<tr>
<td>Cardiogenic Shock Research Grant</td>
<td>January 16, 2023</td>
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<tr>
<td>Enduring Hearts Transplant Longevity Research Grant</td>
<td>January 16, 2023</td>
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<tr>
<td>O. H. Frazier Award in MCS Translational Research</td>
<td>January 16, 2023</td>
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### THE MARFAN FOUNDATION

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<th>Funding Opportunity</th>
<th>Application Deadline</th>
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<tr>
<td>Victor A. McKusick Fellowship Grant</td>
<td>January 31, 2023</td>
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<tr>
<td>Everest Grant</td>
<td>Letter of Intent Due:</td>
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<td>January 31, 2023</td>
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### SOCIETY OF CARDIOVASCULAR ANESTHESIOLOGISTS

- SCA/IARS Starter Grant
- SCA/IARS Mid-Career Grant
- SCA Diversity and Inclusion Grant

Application Deadline: **January 27, 2023**
SELECT PUBLICATIONS

August 2022


September 2022


October 2022


October 2022


Select publications from CVRI members listed are in the top 1% of highly cited journals with an impact factor greater than 18.

November 2022


