universe

JPL

June 2022

Featured Stories

A Jubilant JPL Welcomes New Director Laurie Leshin

By Taylor Hill

Before she spoke a word, Dr. Laurie Leshin's tenure as JPL Director began with action: bypassing the podium and microphone on the steps of Building 180, and crossing the Mall unaccompanied to greet JPLers in person, snap a few pics and chat face to face.

Hundreds of JPLers congregated on the Mall May 16 to cheer on, and hear from, the distinguished geochemist and space scientist as she started her new role—a mere 48 hours after seeing off the last graduating class of her eight-year tenure as president of Worcester Polytechnic Institute (WPI).

"She finished up graduation on Saturday, got on a plane to fly out here, got Sunday to regroup, and showed up here Monday morning for work," said Deputy Director Larry James. "This is a time of celebration, to recognize we now have a new director: she came into the office this morning, and about 15 minutes later, we jumped on a video telecon with NASA headquarters."

When Leshin did return to the microphone to address the Lab after several minutes of mingling, she snapped a couple more “selfies,” which she said she’d be tweeting out soon.

“The students taught me how to do that,” she quipped.

With the formalities, or informalities out of the way, Leshin brought the attention to JPL, the work, and the people.

“To keep this place going, during something none of us ever thought we’d have to deal with—a global pandemic that’s gone on and on—the fact that you’re here today, back on Lab, it’s touching to me that you’ve all come out,” Leshin said.

After thanking her husband, Jon Morse (former director of astrophysics in NASA’s Science Mission Directorate) for joining her on her journey across the country, she thanked Larry James for his leadership over the past nine months—presenting the interim director with a bronze plaque of Ingenuity and Perseverance and a T-shirt with Leshin’s new spin on JPL’s informal motto: Dare Mighty Things Together.

From there, Leshin talked about what drew her back to JPL—the place that’s laid claim to some of the most impactful experiences of her career.

“I came back here because there is no better place to be on the planet right now,” Leshin said. “You all have done such incredible work. In the middle of this global pandemic, when things were incredibly bleak for this country, you landed a rover and a helicopter on Mars, and you raised everybody’s gaze. You helped people imagine and remember what is special about being alive, and being a human on this world. You did that.”

That inspiration, Leshin said, is what will drive the Lab’s next pursuits, and shape the innovative missions and technological achievements to come.

“You’ve inspired people to pursue what’s possible, what’s next, and where we are headed in exploration and technology,” Leshin said. “We need that now more than ever. We need it to inspire people, we need it to drive our economy forward. And it’s a whole new time in space exploration, and that to me is incredibly exciting.

Lastly, Leshin came back to the science that drew her to JPL—highlighting the soon-to-be revealed first science images from the Mid-Infrared Instrument aboard the James Webb Space Telescope, the impending launches of the Earth Surface Mineral Dust Source Investigation (EMIT) mission, the Surface Water and Ocean Topography (SWOT), the Psyche mission and its journey to a metal-rich asteroid, and Europa Clipper, with the Mars Sample Return proposed mission not far behind.

“The science—what we are going to discover, how we are going to change the textbooks, how we are going to blow people’s minds–it’s incredible,” Leshin said. “And it matters. As I think about inspiration, innovation and the latest scientific discoveries and where one would want to go on this planet, in order to be a part of the most exciting aspects of those things, there is no better place than right here at JPL. You all make that happen every day, and I desperately want to be a part of it. So I am so thrilled to be here, on this team, with all of you.”

Soon after, Leshin left the neighborhood of the lectern—which she never stood behind—and recrossed the Mall for more introductions.

Operation Systems Engineer David Doody was one of the first Dr. Leshin greeted.

“I just told her welcome. It was nice that she came out (to greet us),” Doody said. “Gen. James has certainly had his hands full, so I’m glad to see that he has some relief. Larry has gotten us through this whole pandemic, and I’m sure it hasn’t been easy."

At the center of the Mall, a group at a long table could be seen relaxing and laughing together over ice cream and popcorn. The mood was hard to miss: pure exuberance.

“This is one of those moments where you can tell your grandkids one day, ‘I was there,’” said Piper Lovegreen (398P), who was thrilled to mark her first day as an intern on the same day as Dr. Leshin’s welcome event.

“She’s a woman in this position and that’s huge,” said Jadie Adams (398J), another first-day intern at JPL. “It’s breaking boundaries, and it gives people like me hope to move forward here.”

Added Cassandra Nickles (398P): “It’s a new era, ushered in in the best way possible, with jazz, kettle corn, and sunshine. This sets the tone for joy.”

Jocelyn Clancy (397D) remarked that since starting at JPL in November, she hadn’t seen so many happy people altogether at once. “It feels like Disneyland,” she said. “Like a carnival of excitement.”

And for Kelly Luis (329F), who was hired in September 2020, the day was also a celebration of something so few have been able to enjoy over the last two years: shared experiences, in person, with colleagues.

“I would see in emails [during mandatory telework] that ‘We’re in this together,’” Luis said. “To see everyone here and feel the excitement, it feels like it’s culminating for me. I get to be a part of that vision now and it’s inspiring.”

Left to right: Jenette Sellin, Emily Newman, Emmy Kelly, and Josh Day enjoy kettle corn on the grass after hearing Dr. Leshin speak.

On the grass, another group enjoyed the sunshine and kettle corn, and savored Leshin’s remarks.

“It may sound trivial, but I love that she took pictures and said she was going to tweet them,” Mechatronics Engineer Emmy Kelly (352M) said. “I appreciate that she is someone that engages with the public, and is engaging in a way that’s really relevant right now. That’s something I think that’s going to benefit JPL in the long term.”

For Josh Day, mechanical engineer in 355H working on Mars Sample Return, Leshin’s words rung as a reminder of JPL’s core mission.

“I think right now more than ever, it’s important to be reminded why we are here,” Day said. “She seems genuinely excited, and I appreciate that. It resonated with me.”

Next, the work begins. To close her remarks, Leshin asked JPLers for two welcome presents: patience and grace.

Image Credit: Bob Paz/Photolab

An Extended Welcome on the Mall

By Carl Marziali

The trivia questions in their holders stood mostly untouched, because JPLers at the Welcome Table were busy answering the biggest question: How does it feel to gather again?

Over two lively hours on Tuesday, May 17, and again on Wednesday and Thursday, dozens of new and longtime members of the JPL community found the answer in dozens of ways: with long discussions, excited greetings, friendly introductions, and rediscovered bonds. The event was a double bill of "Conversation & JPL Mysteries and Curiosities Trivia,” but the first half dominated.

Email went largely unchecked. Not a laptop cluttered the 200-foot communal table that will line the Mall through May 19. The multitasking that has come to define virtual meetings abated for a beat.

If measured by keystrokes, productivity took a dive.

What took its place? The intangibles of human connection escape tidy metrics. Anecdotally, one trend stood out: those who sat, stayed.

“I got to talk to two women that I didn’t know at the Laboratory and find out we have some connections, and some interests,” said Leslie Livesay, the Lab’s associate director for flight projects and mission success. “I could tell them a little bit about my career. They appreciated that. And I appreciated hearing from them also.

“There is something about being in person that kind of breaks down barriers,” Livesay said.

JPLers gathered at the Welcome Table May 17-19 for "Conversation & JPL Mysteries and Curiosities Trivia,” and a chance to meet new JPL Director Laurie Leshin. Image Credit: Courtesy of David Delgado

Rie Lee (2410) was one of Livesay’s new table friends.

“I was surprised to see so many Executive Council members come out,” she said. “I’ve gotten to talk to a lot of cool people. Some people I knew and some people I didn’t, and I think that’s kind of the point of the whole exercise.”

Joining much of the Executive Council at the event was new Director Laurie Leshin, who walked the length of the table, stopping several times in conversation.

“It was lovely to see so many people out, enjoying each other’s company, enjoying the trivia, and just sort of being a community. And that’s what we’ve missed so much these last couple of years during Covid. I don’t even think anybody’s really realized how much we’ve missed our community. It’s so important to build it,” Leshin said during one of her stops.

“I met employees who started yesterday, I met employees who started during the last two years who’ve barely been on Lab, and for them – just big smiles, so happy to connect with their coworkers and to be in this gorgeous environment.”

The Welcome Table was a new approach to a new problem: the fraying of bonds during the pandemic. David Delgado, cultural strategist in Lab Engagement, part of the Communications and Education Directorate (18x), proposed the concept during planning for the return to Lab.

“We were looking for a way to celebrate our community. We’ve been away from each other for a long time, connected by digital means. It’s important to gather to reaffirm our connection,” Delgado said.

“When we don’t see each other, it’s easy to forget how much we like each other.”

Participation grew over the week, with Wednesday’s table nearly full. Leshin stopped by a second time on Thursday, and other Executive Council members sat at the table all three days.

‘It’s a great idea, and we should try to encourage more people to come out and do it. I suggest that we keep it going,” said Livesay.

The event planning team included JPLers from Lab Engagement, Public Services and Business Services in 18x, supported by Facilities, Dining Services and the Director’s Office. If you would like to volunteer at future events, or to suggest other culture-building activities, please reach out to Cultural Strategist David Delgado.

Dr. Laurie Leshin's welcome quilt, held up by seven of the hundred-plus contributors. (Clockwise:) Bridget Landry, Melora Larson, Andrew Branch, Julia France, Jacqueline Sly, Rhiannon Conrado, and Katie Siegel. Image Credit: Tara Nelson

The Fabric of Our Universe

By Celeste Hoang

Julia France was enchanted.

It was the afternoon of Feb. 2, 2022, and the software systems engineer had just finished watching—and falling under the spell of—Dr. Laurie Leshin’s introductory remarks at the Lab’s Town Hall shortly after she was named the first woman director in JPL’s 86-year history.

“There was a contagious energy of creativity and excitement, of celebration for this moment,” recalls France, who could barely keep up with the jubilation JPLers were sharing across Lab.

One moment stood out to France from the remarks: Leshin mentioned she was a fiber artist. After the Town Hall, France immediately took to JPL's Slack, home to multiple special interest channels, and started typing up a message in the sewing channel.

"I felt as though hearing her talk about the fiber arts was the spark that connected that wave of excitement with something I could physically do: create a gift for her that would be lasting," France said. "I went on Slack and said, 'Oh my gosh, what if we made something for her?'"

Minutes later, systems engineer and fellow fiber artist Katie Siegel replied.

"I said something like, 'Julia, even if you and I are the only two people to make her something, we're going to do it,'" Siegel says with a laugh.

In the end, that was far from necessary. The two began cross-posting the idea of gifting Leshin a handmade quilt—one where members of the Lab community could contribute symbolic, meaningful squares representative of JPL, of Leshin, and their own stories and paths into STEM. They then created their own Slack channel at #leshin-welcome-quilt.

Overnight, 60 new members joined. By the following week, there were more than 100 members.

On May 31, the group successfully delivered—or "landed," they affectionately termed it—the completed quilt to Leshin.

"She seemed genuinely surprised and excited," says France. "It was fun to watch her discover detail after detail as she looked at the quilt, and I know she was especially touched by the square dedicated to her mother."

Leshin was also very generous with her time, France adds, describing how the director took pictures and selfies with many of the contributors and their squares. "She seemed to understand right away the meaning of the project and how much effort went into it."

Dr. Leshin taking a selfie with the two quilt project leads, Katie Siegel and Julia France. Image Credit: Tara Nelson

QuilTLO is Born

The symbol of gifting Leshin a quilt was woven into the idea from the beginning.

“Early on, we talked a lot about fiber arts, in general, being very community-based and what a community quilt symbolizes,” says Siegel. “This held as a thread through it all—we are literally sewing squares from people of all backgrounds and identities.”

Still, France and Siegel never imagined the seed they planted for the quilt gift would bloom into a towering, months-long volunteer project with dozens of people and deliverables to wrangle.

“Julia and I were unprepared for the level of enthusiasm and number of people wanting to get involved,” says Siegel.

True to JPL form, they approached the production of the quilt the only way they knew how: like a flight project. Alongside France and Siegel, eight other leads volunteered—Andrew Branch, Jacqueline Sly, Amy Huynh, Bridget Landry, Melora Larson, Rhiannon Conrado, Tara Nelson, and Krys Blackwood—all of whom were recruited over Slack and most of whom had never met in person or worked together at JPL before. The group got straight to work, affectionately dubbing the process “QuilTLO,” referencing spacecraft ATLO (Assembly, Test, Launch, and Operations). There was a phase tracker, a budget and delivery schedule, and project managers who managed documentation, all-hands emails and Webex meetings, and key milestones.

“We joked that [finishing the quilt] and taking a picture together was like launch day, and delivery day to Leshin would be landing day,” Siegel says, emphasizing that the countless hours devoted to the project were entirely voluntary from everyone involved, alongside a set of generous donors who helped fund the project with their personal money. “There were zero taxpayer funds spent on this. It was all nights and weekends for everyone and lots of RDOs. There was real dedication.”

Dr. Leshin marvels at the quilt during an on-Lab event with project contributors on May 31. Image Credit: Tara Nelson

The Real Secret Sauce

After more than two years of isolation, the project became a catalyst for collaboration, drawing people together for a shared mission and reigniting an undeniable love for community.

“From day one, we wanted it to be an inclusive, welcoming, and learning experience for people, especially those who had never quilted or sewn before,” says Siegel, who noted that 95 percent of the project was managed virtually through the Slack channel and various technology platforms. “We joked early on that this is the real secret sauce.”

And that recipe was available to the Lab’s friends and family: via Slack and word of mouth, the project attracted contributions from JPL retirees, as well as spouses, parents, and siblings of JPLers. Volunteers came armed with a wide range of talents, including knitting, sewing, crocheting, cross-stitching, embroidery, and beadwork, to name a few. The seasoned contributors were eager to share their knowledge, with some opening up their homes to host beginner sewing workshops.

In the end, 153 contributors added their talents to the quilt, which was completed on May 22. With so many squares, the quilt now measures 11 ½ feet x 6 ½ feet.

“Katie suggested it could be her lap quilt [in the beginning], that we could be taking care of Dr. Leshin through this gift because sometimes the offices at JPL are so cold,” France laughs. “It’s a little bigger now than a lap quilt.”

While the project ended up being larger and admittedly more overwhelming than planned, France’s most memorable takeaway was the collaborative nature of the experience.

“At every stage, down to the micro-level of an individual square, there was a spirit of collaboration and flexibility and people saying, ‘What about this?’ ‘Yeah, I love that,” she says. “We were able to start with a really big scope, and with lots of input and people’s ideas, we were able to create a real design. The thing took shape in a supremely collaborative way.”

Behind the scenes of the quilt project, which was a months-long process beginning in early February. Image Credit: Lori Shiraishi

Blanket Statements

A close-up examination of the quilt is a window into the souls and loves of JPLers, square by square: there is the silhouette of Leshin's mother by Lina Osterman—wife of JPLer Lori Shiraishi—taken from a picture Leshin had shared on Twitter ("I teared up when I saw that one," says Siegel); a NASA shuttle by Belinda Shreckengost as a tribute to her mother, who had worked on the shuttle program; a special homage to every Mars rover, in detailed colorwork knitting, from Pathfinder to Perseverance, by Stephanie Mitana; a depiction of EDL (entry, descent, and landing) by Jenette Sellin, with an embroidered parachute and a crocheted entry vehicle; numerous references to Star Trek, Star Wars, Dr. Who, and mission logos; and even several puzzles, including encoded coordinates hidden in the threads that point to a special treasure hunt on Lab.

"There's a great amount of detail and you can appreciate it from far away and up close," says France.

Siegel adds, "A lot of intergenerational connection was put into the quilt."

When posed the question of why the time and dedication to the project was worth it—and why a gift for Leshin became so vitally important—the two don't hesitate.

"I didn't know if I would see a woman director in my lifetime at JPL and it happened, and quite unexpectedly," says France. "Her appointment felt like such a gift. She has a proven track record of advocacy for underrepresented genders in STEM. It was a heartening thing to see and it gave me great hope for the future of the Lab."

Adds Siegel: "At the end of the day, as much as this is a gift to Leshin, it feels like a gift to our community, too."

Now, that gift will have a special home on Lab for the foreseeable future.

During the gifting ceremony, Leshin marveled at the quilt and told the group where she thought it would look great: displayed on a wall in her office.

The completed quilt measures 11 ½ feet x 6 ½ feet. Image Credit: Tara Nelson

THE QUILTING EXPERIENCE: IN THEIR OWN WORDS

Below, a handful of the 153 contributors share their thoughts on why it was important for them to be part of this historic project.

From Jacqueline Sly (interface and materials definition quilt lead and square contributor):

"I saw the chatter about the quilt early on and knew immediately it was an idea with legs. It reminded me of many of our inspirational flight projects at JPL: challenging and daring enough to potentially fail.

I got involved because I wanted to see how using engineering principles such as interface definition would allow us to keep the design space as open as possible for individuals—including being open to a huge range of different crafting mediums—while also staying on track for our final assembly. We absolutely needed to define requirements for the individual squares in order to create a final quilt that would hold its structure at such a grand size. But I am also delighted and surprised at the range of creativity that showed up in the squares when we gave folks as much flexibility as we could."

About her square: "My square combines a traditional quilt pattern with some JPL extra'. The square starts with a traditional red log cabin pattern representing the surface of Mars. At the heart of the log cabin pattern is a patch from the Qualification Model Dirty Testbed Mars 2020 team. Around the patch is embroidered Robotic Arm Force Torque Sensor data from Mars Surface Operations (the data has been released and is published in "Two-stage calibration of a 6-axis force-torque sensor for robust operation in the Mars 2020 robot arm" in 2021, Volume 35 of Advanced Robotics.) I wanted to pay tribute to the successful delivery, landing, and operation of our hardware and to the hard work of the Robotic Arm and Force Torque Sensor teams. Over the last few years, our creative team has wondered out loud how we could integrate some of the data traces into a piece of art that is on display."

From David Mittman (quilt donor and tech support):

"My wife quilts and I've seen the joy that her baby quilts bring to our relatives and friends, even long after the babies have grown to adulthood. I can't quilt, but I can contribute to the effort, which is what led me to donate money to the project. I hope Leshin gets a lifetime of joy and memories from the quilt, even long after she's left JPL after her long and successful tenure."

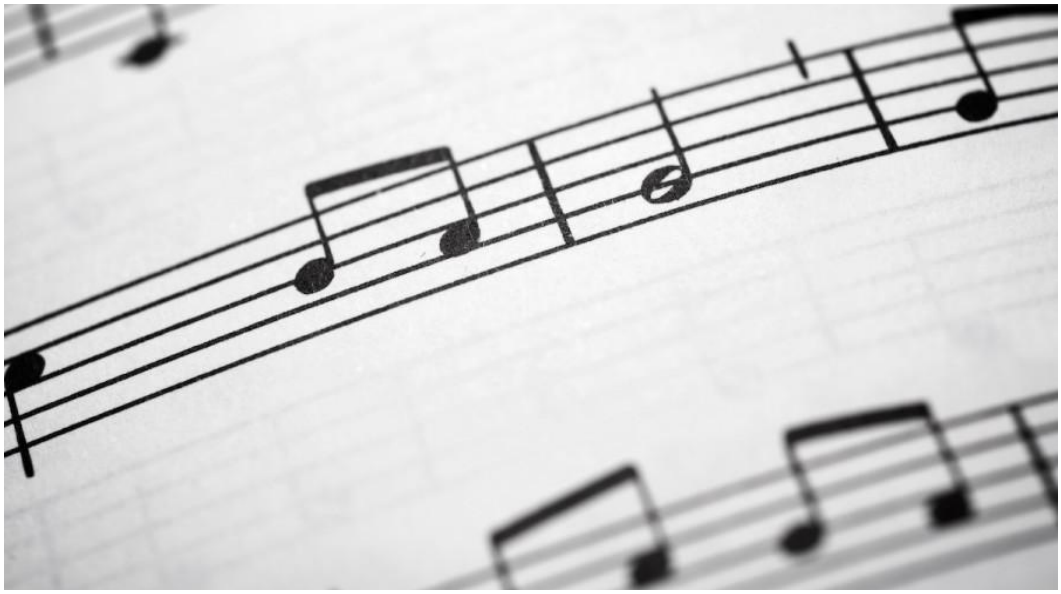
From Sandy Erickson (square contributor and puzzle team member):

"My mom taught me crocheting when I was a little girl. She left me soon after and moved away. I did not see her for many years. Crocheting made me feel closer to her, even when she was not near me. It was as if she was guiding my crochet needle to make a beautiful piece of art as a symbol that she also missed me.

[The most special moment during the quilt project was] when I saw the unfurling of the entire quilt. It was a group effort and I feel like I am part of something very special. It's a testament that I belong here and everyone is important, and we aimed for a common goal. Another favorite part is being on the location puzzle team. It brings joy to create and share the wonderful curiosities of JPL to colleagues."

About her square: "For my square, I used nine different colors of yarn to crochet the image of a spaceship soaring past Mars, stitched onto a background of deep space. This design was inspired by all of JPL's incredible missions and by the countless people who worked together to make space exploration a possibility. I am extremely proud to be able to contribute to the legacy and future of JPL and its work."

Events



JPL Chorus Concert

Sunday, June 12
6 to 7:30 p.m.
All Saints Episcopal Church
132 North Euclid, Pasadena, CA

JPL Chorus members are very excited to be singing together again, joining with the Donald Brinegar Singers (DBS) for this special event. "Imagination! Who Can Sing Thy Force?" by John Muehleisen was commissioned by DBS and JPL Chorus members in honor of their director, Donald Brinegar, for his 70th birthday in 2020. All are invited to attend.

Von Karman Lecture Series: Spacecraft Assembly, Test, and Launch Operations (ATLO)

Thursday, June 23
7 to 8 p.m.
YouTube link

What does it take to build a spacecraft? It's up to the Spacecraft Assembly, Test, and Launch Operations (ATLO) team to assemble it, bake it, shake it, get it to the pad and launch it.

- **Speakers:**
  - Michelle Tomey Colizzi, Mechanical Engineer, NASA/JPL
  - Luis A. Dominguez, ATLO Electrical & Deputy Systems Lead, NASA/JPL
- **Host:** Nikki Wyrick, Public Services Office, NASA/JPL
- **Co-Host:** Brian White, Public Services Office, NASA/JPL

JPL Family News

Retirees

The following JPL employees recently announced their retirements:

40+ Years:

Brent R. Blaes, Section 349F, 45 years

Linda J. Clifton, Section 2621, 44 years

Andrea Angrum, Section 7020, 42 years

30+ Years:

Scott Evan Bowdan, Section 1830, 33 years

Donald G. Nieraeth, Section 3860, 31 years

20+ Years:

Betina E. Pavri, Section 398D, 29 years

10+ Years:

Joseph H. Kwan, Section 334K, 14 years

Letters

Thank you for all your heartfelt sympathy and condolences, beautiful funeral flower spray wreath arrangement, online & memory notebook for the passing of Dr. Walter Tsuha. Our family will never forget your kindness & thoughtfulness. -The Tsuha Family

Passings

Lloyd H. Back, 89, a retired senior research scientist in former Section 354, passed away peacefully on March 21, 2022, at home in Irvine, California after a brief illness. His beloved and devoted wife Carol was at his side. Lloyd was self-made, independent, proud, and quietly led by example. He loved nature, travel and exploration, adventure, fishing, all sports, and most of all family.

Born in San Francisco, California, he was an All- SF City shortstop on the varsity baseball team at Balboa High School during his junior year. After graduation, he was pursued by several major league baseball teams but chose other opportunities. He served on active duty in the U.S. Army from 1953 to 1955. Lloyd met Carol Peterson in Burlingame, California, and courted her for four years before they were married in 1955. They moved to Southern California in 1962 after Lloyd completed his Ph.D. in mechanical engineering at UC Berkeley. Lloyd worked at JPL until his retirement in 1992. His professional contributions spanned widely varying applications in science including rocket propulsion, nozzle design, heat transfer processes, aeroacoustics, complex flow visualizations, and combustion and aircraft fire safety. He was especially proud of his biomedical research in conjunction with the Cardiology Department at USC, where he was an Assistant Clinical Professor in the School of Medicine. His research and

publications continued for over 20 years after retirement, studying details of blood flow in human atherosclerotic coronary arteries and the effects of angioplasty.

His many career accolades include the NASA Exceptional Service Award and Fellow of the ASME, where he Chaired the Heat Transfer Division. Lloyd was very active in technical societies as a Journal editor, Committee Chair, Conference Organizer, and so on. He was an Emeritus Lifetime Member of AIAA. In addition to his work at USC, he taught engineering courses at UCLA and Cal State Long Beach. Lloyd greatly appreciated the large number of collaborative scientists he worked with. He had nearly 200 peer-reviewed journal publications with colleagues across the country.

Lloyd and Carol spent 66 loving years together and had three children, Martin (Barbara), Carla (Tom), Debra (Lane), and seven grandchildren.