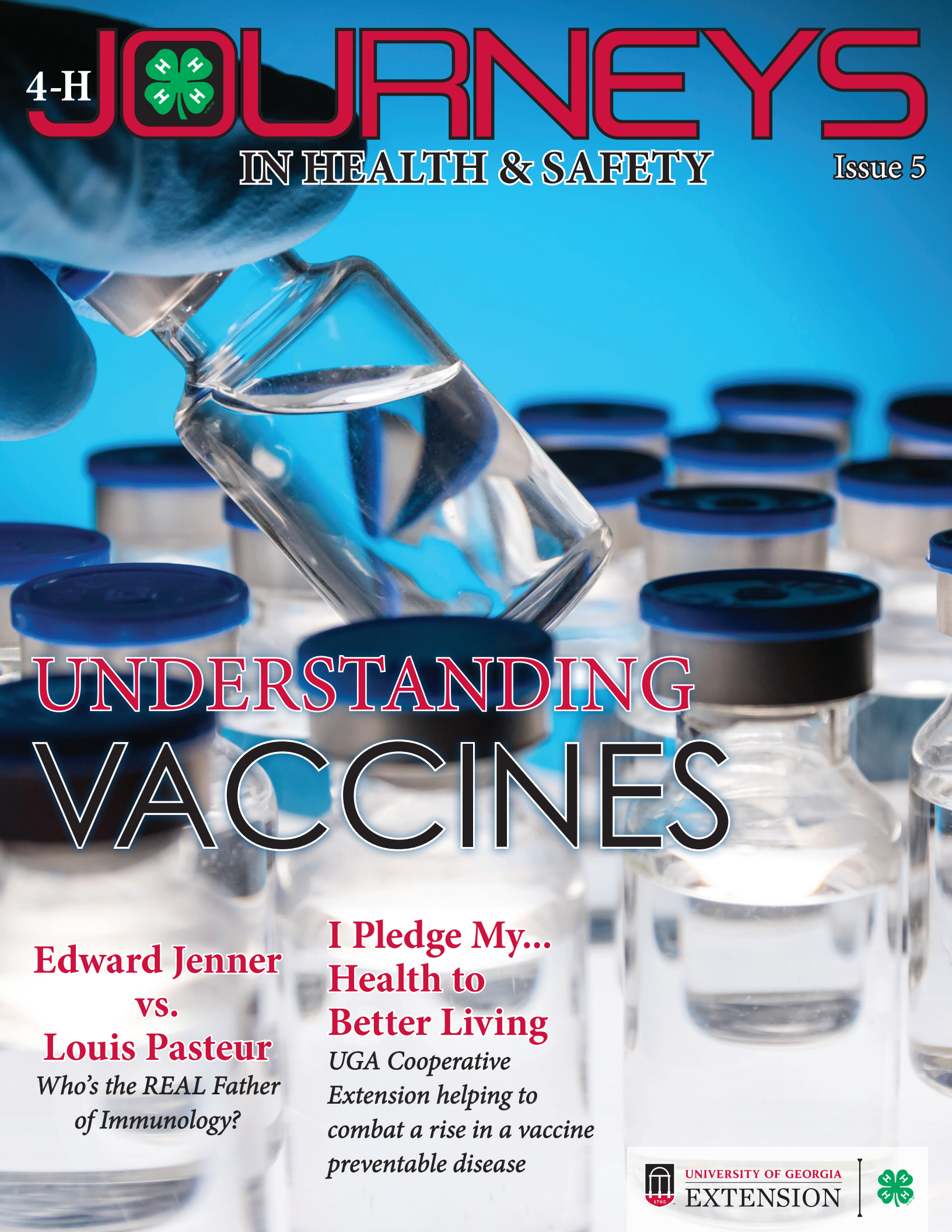
4-H JOURNEYS
IN HEALTH & SAFETY
Issue 5



UNDERSTANDING VACCINES

Edward Jenner vs. Louis Pasteur

Who's the REAL Father of Immunology?

I Pledge My... Health to Better Living

UGA Cooperative Extension helping to combat a rise in a vaccine preventable disease

UNIVERSITY OF GEORGIA EXTENSION

4-H JOURNEYS IN HEALTH & SAFETY Issue 5

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UNIVERSITY OF GEORGIA EXTENSION

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ABOUT JOURNEYS MAGAZINE

Journeys is a magazine for middle school students produced by Georgia 4-H. A journey is described as a trip, expedition, excursion or a tour. While this *Journeys* magazine won't allow you to physically take a trip, expedition, excursion or tour, we do hope it allows your mind to explore the content and concepts shared in the pages ahead.

The Chinese philosopher, Laozi, is credited with the saying, "A journey of a thousand miles begins with a single step." We hope this magazine begins a journey of exploration for you. Georgia 4-H can offer you many paths to explore in hopes of finding one that is of interest to you. In the pages ahead, you will read about individuals who credit Georgia 4-H for helping them find a path to their chosen career or college major. Through independent project work, content or subject exploration, public speaking experience, service to your community, and efforts to be part of a team, Georgia 4-H is excited to be a small part of your journey toward becoming a leader.

Join us on this journey to learn more about vaccines, opportunities for careers related to health, and the importance of serving others, especially by making smart health choices for you, your family, and your pets. We also hope you will stop at the "Detours" along the way to apply your knowledge and explore topics more deeply with your classmates and educators.

Georgia 4-H is a partner in public education and strives to incorporate Georgia Standards of Excellence in the education materials for in-school use. The following Georgia Standards of Excellence are correlated to the content delivery included in this publication.

S7L1. Obtain, evaluate, and communicate information to investigate the diversity of living organisms and how they can be compared scientifically.

b. Evaluate historical models of how organisms were classified based on physical characteristics and how that led to the six kingdom system (currently archaea, bacteria, protists, fungi, plants, and animals).

S7L2. Obtain, evaluate, and communicate information to describe how cell structures, cells, tissues, organs, and organ systems interact to maintain the basic needs of organisms.

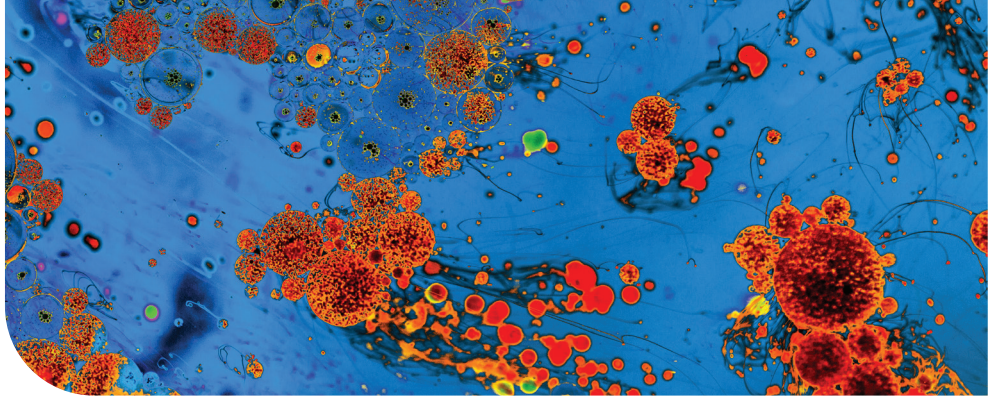
c. Construct an argument that systems of the body (Cardiovascular, Excretory, Digestive, Respiratory, Muscular, Nervous, and Immune) interact with one another to carry out life processes

Think Green! Not just 4-H Green...but let's help do our part to recycle and reuse. Save this book, reread it or pass it along to a friend. If it's too worn, please recycle it.

In this Issue...

Vaccines:

Vax Facts!



Vaccines are one of the most innovative inventions in public health history. They are a tool used to energize the immune system to give a response against diseases. Vaccines can be delivered to you most often through injections but sometimes you can receive them by mouth or sprayed into your nose. Vaccines protect us and they have been around for more than 200 years! Vaccines have wiped out diseases such as polio in the United States. Polio is a disease that can attack the spinal cord and cause individuals to lose movement in their limbs. Another common vaccine preventable disease is chickenpox. This disease shows up as an itchy red rash all over the body. Many people who choose to get the chickenpox vaccine in their childhood are able to steer clear of shingles (another painful rash on the body) as they get older.

Vaccines work for adults, kids and even pets. For kids, vaccines are just like teachers, they teach your immune systems lessons about what to do when germs enter the body. The immune system is a complex network of organs, cells and proteins that defend the body against infection, while protecting the body's own cells. Everybody is exposed to germs everyday, some are not as harmful as others. There are very harmful diseases that make children sick such as measles or diphtheria. Vaccines or immunizations will teach your immune system how to get rid of these nasty diseases. This process begins with antigens that teach your immune system the proper way to create antibodies. These antibodies are like little soldiers that fight off the virus or bacteria that is causing you to be sick and not feel well. When the vaccine has completed its mission, it leaves the body within 2 weeks, once the immune system is better. How cool!

Once manufactured, vaccines need to be stored at a specific temperature to remain stable, usually in a refrigerator or freezer. **Shelf life** can be defined as the amount of time the vaccine is still considered usable and effective. If vaccines are taken out of this temperature range or if they are mixed/prepared for administration, their shelf life shortens and they'll need to be used or thrown away within a certain time. On the right are some basic facts about common childhood vaccines and their shelf life if they are not stored properly. Common childhood vaccines include DTap, MMR and Varicella. Each of these vaccines and what illnesses they protect against are listed to the right.

SHELF LIFE:

How long will it last?

DTap Vaccine

72 hours

Protects against diphtheria, tetanus, and pertussis or whooping cough.

MMR Vaccine

8 hours

Protects against measles, mumps and rubella which are all very contagious illnesses that spread easily if individuals are not vaccinated.

Varicella Vaccine

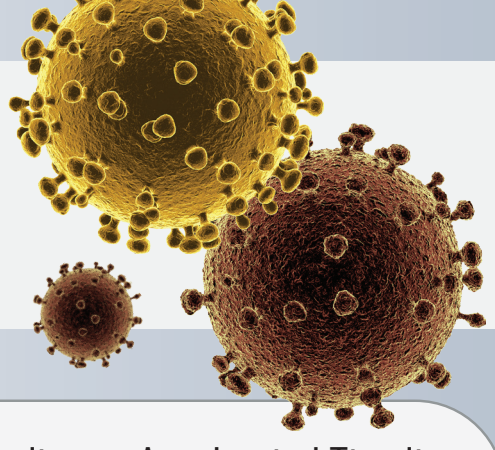
72 hours

Protects against chickenpox which causes a horrible rash all over the body as well as itching, drowsiness and possibly a fever.

PSA Challenge!

Creating a public service announcement (PSA) is a great way to educate others about the importance of taking care of themselves. Remember to always cite sources that are credible and share research-based information. What if you had the chance to create a PSA about the importance of vaccines? How would you get people to react positively? Try your hand at writing a script that could educate people about vaccines—keep it short, factual, and fun! Use the information found in this magazine to develop your script. Good luck!

Development Timelines



Throughout the COVID-19 pandemic, there was a lot of confusion about the production time of the COVID-19 vaccine. Thanks to modern technology, vaccine developers were able to create the COVID-19 vaccine in record time with the same science and techniques used for other vaccines.

Look at the timelines on this page and compare them to each other. The longer timeline is the normal process for vaccine development whereas the accelerated timeline was the process for COVID-19 vaccine development. We are fortunate to have had the resources and manpower to develop and distribute this vaccine in record time to help reduce the number of people negatively affected by COVID-19. As you can see, all vaccines (regardless of if they are developed on a typical timeline or accelerated timeline) go through the same development phases and are safe for humans or animals.

Typical Timeline
1-10 years

PHASE I
Preclinical Trials

Clinical Trials to Assess Safety, Dosing, and Immune Responses

PHASE II
Clinical Trials to Assess Safety and Immune Responses

PHASE III
Clinical Trials to Assess Safety and Efficacy

Regulatory Approval Process

Scaling Up Vaccine Manufacturing

Post-Licensure Vaccine Safety Monitoring

Accelerated Timeline
1-2 years

PHASE I
Preclinical Trials

Clinical Trials to Assess Safety, Dosing, and Immune Responses

PHASE II
Clinical Trials to Assess Safety and Immune Responses

PHASE III
Clinical Trials to Assess Safety and Efficacy

Regulatory Approval Process

Scaling Up Vaccine Manufacturing

Post-Licensure Vaccine Safety Monitoring

After reviewing these timelines, answer these two questions with your parents or guardians.

1. What are the similarities between these timelines?

2. What are the differences between these timelines?

Frontiers of Immunology

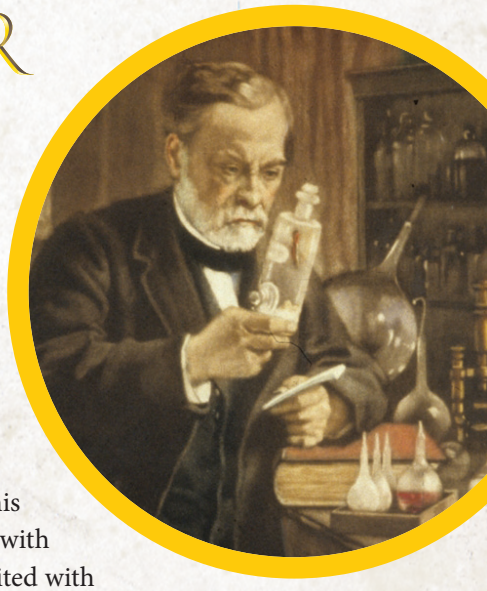
Immunology is the branch medicine that focuses on immunity. **Immunity** refers to the body's ability to prevent the invasion of microorganisms that cause disease.

EDWARD JENNER

Vaccines are one of the most well known public health innovations today. Vaccines are used to help fight disease and keep you healthy! One of the first men to discover the efficiency of vaccines was Edward Jenner. Jenner was a scientist who was born in England in 1749. While in school, he fell in love with science and nature and always wanted to combine the two. This passion allowed him to meet many people who worked in nature like dairymaids and work for people in the health field like surgeons and other medical professionals. He also worked with geologists and performed experiments on human blood. His work helped him to understand how cowpox negatively affects the immune system which prompted him to protect himself and others from smallpox.

Jenner's first experiment in 1796 involved James Phipps, a healthy 8-year old boy. James was inoculated with a vaccine that had small amounts of cowpox. When someone has been inoculated (like James), they are given a weak form of a disease, usually by injection. After his exposure, James was not affected and did not get the disease. A few months later, Jenner tested James again and found out that he was immune to smallpox after receiving his first vaccine! This prompted Jenner to write a paper describing his experiments but he was not easily accepted in the medical community. After some years passed, his experiments continued to prove effective and he received many honors and grants to continue his work until his death in 1823.

LOUIS PASTEUR



Another man who studied the efficiency of vaccines was Louis Pasteur. Pasteur was a French biologist who was born in 1822. He also worked to create vaccines to slow the spread of disease. He discovered that some liquids, such as milk, go bad because bacteria grows in them. He developed the process of pasteurization to stop the bacteria's growth. Pasteurization is the process of heating liquids then cooling them down to kill any bacteria that may be present. This was the beginning of a new theory, The Germ Theory of Disease.

The Germ Theory of Disease simply says that there are certain microorganisms that cause certain diseases. For example, protozoa is a certain microorganism that causes certain diseases such as malaria. Different bacteria are also microorganisms that cause certain diseases such as cholera. Pasteur's work made him realize that many diseases begin with microbes. This caused him to develop a technique to ward off disease called vaccination. His notable successes with vaccination began in 1881. He vaccinated sheep against anthrax. In fact, Louis Pasteur is credited with developing the first vaccines for chicken cholera, anthrax and rabies.

WHO'S THE REAL Father of Immunology?

Both Edward Jenner and Louis Pasteur are seen as pioneers in public health. Despite this, a common argument is whether to name Jenner or Pasteur the "Father of Immunology."

Some people say that Jenner discovered vaccination but Pasteur invented vaccines themselves. Based on what you have learned about these two men, who would you consider the "Father of Immunology?"

Before answering the question of who is the Father of Immunology in your opinion, research the answers to the following questions with your parents or guardians.

1. What is immunology? _____

_____

2. What vaccines did Pasteur develop? _____

_____

3. What vaccines did Jenner develop? _____

_____

4. When did both Jenner and Pasteur begin experimenting with vaccines? _____

_____

Track Your Vax:

G.R.I.T.S.

Now that some of the common childhood vaccines have been discussed, it is important to understand how to track your vaccines. The Centers for Disease Control and Prevention (CDC) have developed an immunization schedule for children from birth to eighteen years. This schedule is meant to inform you of the proper dosage and your own personal vaccine timeline. Some vaccines are more effective when given at certain ages.

The easiest way to know if you are on track with your vaccines is by requesting your immunization records from your primary care provider (PCP) which is your pediatrician. In Georgia, healthcare providers have access to the state vaccination record, called the Georgia Registry of Immunizations Transactions and Services, or G.R.I.T.S. This is what's called an immunization information system, which records immunization dates and dosages. Once you receive this form (sample on the right) you will see the name of the vaccine you were given, the date you received it and the dates of the other doses received. It is very important to stay on top of your personal vaccine schedule to ensure you are not receiving less than the recommended doses. This form is often needed to enroll in school and various extra curricular activities.

Scan the QR code to see the full immunization schedule for children and adolescents.

Tips for G.R.I.T.S.

- Stay up to date with your vaccine schedule.
- Keep your form in a safe place such as a fireproof box at home.
- Bring the form with you to your doctor's appointments to compare your records with the doctor's office records.
- If you have received vaccines in various locations and your PCP does not have a record of those vaccines, ask them to check the state's Immunization Information System (IIS) and update your current G.R.I.T.S. form.

Rev. 07/2020

Georgia Department of Public Health

Form **3231**

CERTIFICATE OF IMMUNIZATION

Child's Name (Last name, First name) _____ **Birthdate** _____

(Optional) Parent/Guardian Name (Last name, First name) _____

Date of Expiration _____
(Next required immunization or review of medical exemption due.)

(Fill in X) **Complete For K through 6th Grade**
Child must be >= 4 years and have met all requirements for school attendance.

(Fill in X) **Complete For 7th through 10th Grade**
Fulfills requirements K through 6th grade AND must have Tdap and MCV4 administered.

(Fill in X) **Complete For 11th Grade and higher**
Fulfills requirements K through 10th grade AND must have MCV4 booster dose administered on or after 16th birthday.

Unless specifically exempted by law, Georgia law (O.C.G.A. § 20-2-771) requires a certificate on file for each child in attendance in any school or child care facility in Georgia with penalties for failure to comply. Detailed instructions for this form and immunization requirements by age are spelled out in policy guides 3231INS and 3231REQ distributed by the Georgia Immunization Office.

VACCINE	DATE MM DD YY	DATE MM DD YY	DATE MM DD YY	DATE MM DD YY	DATE MM DD YY	DATE MM DD YY	Total Doses	Diagnosed	Serology+	History	Med. Exemption
Required Vaccines for School or Child Care Attendance											
DTP,DTaP,DT,Td							0				
Polio							0				
Hepatitis B							0				
Tdap							0				
MCV4							0				
HIB (Under Age 5)							0				
PCV (Under Age 5)							0				
Measles							0				
Mumps							0				
Rubella							0				
Hepatitis A (Born on/after 1/1/06)							0				
Varicella							0				
Recommended Vaccines (For Information Only)											
Rotavirus							0				
HPV							0				
Influenza							0				
Td (booster)							0				
Men-B							0				

SAMPLE

Notes:

A licensed Georgia physician, **Advanced Practice Registered Nurse, Physician Assistant**, qualified employee of a local Board of Health or the State Immunization Office is responsible for the content of this certificate. All dates must include month, day and year. In cases of natural immunity or Medical Exemption, the 4 digit year of infection, test or exemption must be filled in the appropriate box(es).
The certificate is NOT valid without name and birthdate of the child, date of expiration OR "X" in Complete for School Attendance box, legible name and address of the physician, Advanced Practice Registered Nurse, Physician Assistant or health department, certified by signature and a date of issue.
A school or facility official is responsible for keeping a current valid certificate on file for each child in attendance. A certificate must be replaced within 30 days after expiration. **When a child leaves or transfers to another facility, the Certificate of Immunization should be given to a parent/guardian or sent to the new facility.**

Printed, Typed or Stamped Name, Address and Telephone # of Licensed Physician or Health Department

Certified by (Signature/Signature Stamp) **Date of Issue**

PRINTED BY GEORGIA IMMUNIZATION REGISTRY (GRITS)

Spotlight on Careers

In the next few pages, learn about individuals who have nestled into careers in the healthcare profession. Maybe one will inspire your future!

Ladonis Yarbrough, PharmD

I am **Dr. Ladonis D. Yarbrough**, a registered pharmacist with CVS Health. I graduated from Florida Agricultural and Mechanical University (FAMU) with a Molecular Cell Biology Bachelor's Degree in 2016. I continued my education at FAMU and earned my Doctor of Pharmacy degree in 2020. I currently work as a staff pharmacist with CVS Heath.

I chose to pursue pharmacy because of my love for science, medicine, and being able to help people have better lives. Also, being a community pharmacist allows me the opportunity to be on the frontline of the healthcare field. I am able to utilize medicinal knowledge to counsel and advise patients on their prescriptions, drug interactions, and lifestyle modifications that will ultimately improve their health. Helping others improve their livelihood is fulfilling and let's me know I chose the right profession.

My day begins with entering data for new prescriptions and verifying all information is correct and accurate. Next comes ensuring there are no interactions with other medications that patients are taking. After that "production occurs," which is simply allocating the right medication to the correct patient and labeling the medications. The next step is to verify that the correct drug and quantity is in the vial and labeled correctly. The last step is dispensing the medication to the patient and answering questions or concerns that may arise during counseling. Throughout the day, inventory issues may arise whether it's a new shipment of medications or having to order a medication that is not in stock. Also, as a community pharmacist there are times during the day that immunizations have to be administered.

During my first day as a pharmacist, my paternal grandmother entered the pharmacy to receive Shingrix, a vaccine for shingles. Being able to administer an immunization and protect my grandmother from the virus that causes shingles brought me joy and fulfillment. I now experience this every time I get the opportunity to administer an immunization and protect patients as well as the community. My favorite thing about being a community pharmacist is being able to develop relationships with patients and work with them to improve their health and lifestyles.

DETOUR

Here are some career-related questions for you to think about...

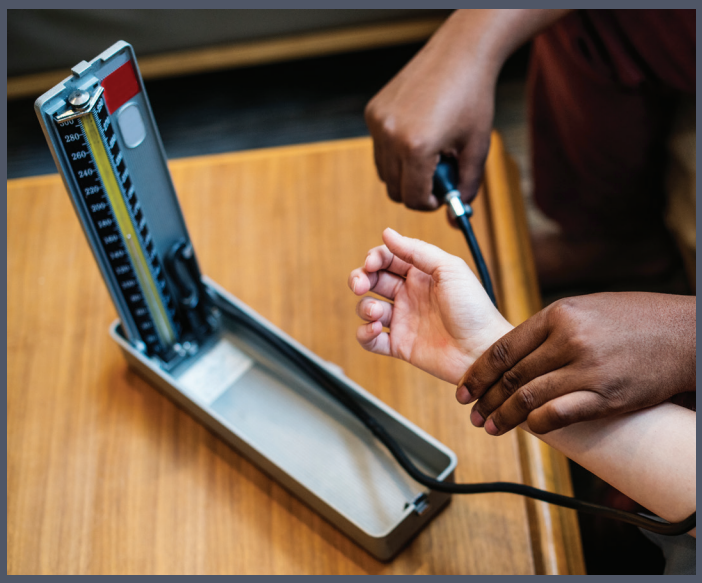
- Have you ever considered a career related to health or science?
- What skills do you have that can be applied to health or science careers?
- What might you do to gain more experience in the areas of health or science?

Dawn Ledford Parker, MSN, APRN, NP-C

Hello, I am **Dawn Ledford Parker**. I am a Certified Family Nurse Practitioner living in Atlanta, GA. A Nurse Practitioner (NP) is a nurse who has gone back to school to obtain a Master's degree or higher education to practice medicine. An NP has to train for at least 2 years before sitting, testing and becoming certified to practice in this field. There are many Nurse Practitioner Certifications, but I chose to become a Family Nurse Practitioner (FNP) so that I could serve patients across the lifespan from "womb to tomb." This means I am certified to diagnose, manage and treat patients as young as a newborn! I have been working as a Family Nurse Practitioner for 23 years.

I chose to become a nurse when I was young watching TV. I saw a program that showed people hurting and being helped by a nurse to get better. That started my career dream. I volunteered as a Nurse Extern in high school. After graduating high school in 1987, I majored in Nursing at Clemson University. After graduating with a Bachelor's of Science (BSN) degree in May of 1992, I began working as a Cardiology Nurse at Emory University Hospital for about a year. I returned to school to obtain a Master's Degree as a Primary Care Family Nurse Practitioner from Kennesaw State University in 1995, graduating in 1997. At that time, my graduating class was the 2nd class of graduating NP students in their newly developed FNP program. Since graduating, I have worked in many jobs, including working on a Pediatric Mobile Unit where I evaluated and treated kids in their natural environment - at their school. I treated colds, asthma, gave vaccines and helped kids stay healthy so they could remain in school longer. I evaluated kids from ages 5 to 18 on the mobile unit.

Now, I perform annual Medicare Health Assessments in patients' homes. Most of my patients range in age from 45-90. I ensure they are healthy, up to date on their vaccines and that they are keeping up and maintaining their doctor appointments. My goal is to keep patients out of the hospital and on track with their healthcare needs between office appointments. If they need vaccines, I educate them on which ones they need, the importance of them and how they can obtain the recommended vaccines for their age. I have a set of patients to see in a geographical location which are assigned to me by my NP scheduler. My typical day includes calling patients the day before to confirm appointments and to conduct a COVID pre-screening survey to ensure it is safe for me to enter their home. On the day of the visit, I also perform a COVID pre-screening survey on myself along with a temperature check before leaving the house. I drive to each patient's home to conduct assessments, teach, educate and ensure they have what they need to remain healthy while in their home environment.



What I love about my job is the flexibility in scheduling appointments and the various patients I meet daily. I love the patient interaction and the positive impact I make while empowering patients to be their best advocates for their health.

Jared White, Vaccine Developer

I'm **Jared White**, and I work as a Scientist at Boehringer Ingelheim Animal Health in Athens, GA. In my lab we focus on researching, developing, and manufacturing vaccines for pets and livestock. Boehringer Ingelheim is the second largest animal health business in the world, and they operate in more than 150 countries worldwide.

The lives of animals and people are interconnected in more ways than we realize. Our pets mean so much to us and are like members of our family, and there is an increasing demand globally for livestock as the human population continues to grow. Personally, I spend a lot of my spare time with my golden retriever pup named Sullivan that enjoys taking hikes. From pets being our best friends to the food we eat, animals are an integral part of our lives. All of these animals, just like people, can get sick too. It's more important than ever to not only treat animals when they are sick but prevent them from getting sick in the first place with vaccines.

To be able to mass produce vaccines at the lab where I work, it all starts with a Research and Development team. They may spend years developing a new vaccine or a better way to make an existing vaccine. When they finally create a vaccine in their lab, they then have to work with a Production Team that can mass produce it. The Production Team literally makes millions of vaccines each month! Working at this scale is an extremely complicated task. The Production Team works in a 100% sterile environment and grows hundreds of gallons of viruses at a time. They do this by infecting cells with the virus and allowing them to grow and reproduce until they reach a large volume. Then they harvest the cells and extract the virus antigen that the cells produced through a series of purification steps. After the antigen is isolated and concentrated, the Production Team formulates hundreds of thousands of vials of vaccine. The last step in the process is the Quality Control Team. This is where I actually spend most of my time. The most important part of making these vaccines is knowing if they actually work and will protect the animal from getting sick otherwise, veterinarians can't administer them to our pets. I work with a team to make sure every vaccine is safe and effective.

Making vaccines requires lots of teamwork, and hundreds of people in the Athens Laboratory work together to make these animal vaccines. Each person usually has a unique job, so it is important everyone contributes. I started working at Boehringer Ingelheim Animal Health seven years ago after leaving the medical field, and it's been very rewarding. I graduated from Georgia College and State University with a Bachelor of Science in Molecular Biology. I have always had a strong connection and love for animals, but also really enjoy science and medicine. I feel lucky that I found a career that does both.

Lee Webb, Veterinarian

My name is **Lee Webb**, and I am a companion animal veterinarian at Crossroads Animal Hospital in Newnan, Georgia. I have been at this practice since January 1998. All my patients are dogs and cats except for the rare goat or other animal. I enjoy helping people keep their companions healthy and happy. I have seen patients come in as young puppies and kittens and cared for them into their golden years. Mondays are surgery days for me that start in the morning and continue until lunchtime. Surgeries may be spays and neuters, dental procedures, or other procedures. In the afternoon and the rest of the week, I see patients and clients in exam rooms to evaluate their health and treat any conditions they may have. It is important to treat patients for diseases and parasites because they may transmit some of these to their owners and it improves the patient's life. Diseases that are transmitted from animals to people are called zoonotic diseases and can include rabies, roundworms, hookworms, leptospirosis, and other diseases. The workday typically begins at 8 am and continues until we are finished in the evening (even though we close at 5 pm). After finishing patient exams, communication with other clients through phone calls or emails are done.

I chose veterinary medicine because I always had a love for animals growing up and I enjoyed science in school. I grew up in Carrollton, Georgia. My mother was an active Coweta County 4-H member, so she encouraged me to join the 4-H club in fifth grade. I participated in district project achievement in Performing Arts General my first year. Mr. Larry Dewberry was my county agent and he convinced me to join the Livestock Judging Team after DPA. This led to Poultry Judging, Dairy Judging, Forestry Field Day, Land Judging, and Cotton Boll over time. Participating in animal judging exposed me to farm animals and production systems.

4-H provided many travel opportunities for me over the years. Our Dairy Judging Team placed second at the state contest and we traveled to Louisville, Kentucky for the North American International Livestock Exposition. I attended National 4-H Congress in Chicago, Citizenship Washington Focus and National 4-H conference in Washington, DC, and we even went to Brussels, Belgium, and Amsterdam on a district 4-H trip. Summer camps were a great joy growing up as well as a windy, spring trip to Cumberland Island. I had so many excused absences from school that when I graduated from Central of Carrollton High School, I received my diploma and a bag of chicken manure from the high school faculty.

After high school, I was a camp counselor at Rock Eagle in Shawnee land for 1 year and at Wahsega 4-H center for 2 years. I was head counselor at Wahsega my last year as a camp counselor. I continued participation in Collegiate 4-H and numerous other clubs and activities in the UGA community (AGHON, Ag Hill Council, Block and Bridle, Alpha Zeta, Blue Key, Mortar Board, Student Government Association, UGA Cattleman's Association, Dairy Judging, Livestock Judging, Animal Science Quadrathlon and others).

Veterinary school is competitive, and communication and leadership skills are important. I became a Double Dawg with degrees in Animal and Dairy Science from the University of Georgia College of Agricultural and Environmental Sciences (1991) and Doctor of Veterinary Medicine from the University of Georgia College of Veterinary Medicine (1995). As a veterinarian there are multiple career options including clinical medicine, teaching and research, regulatory medicine, public health, uniformed services, and Industry. Clinical practice is where most veterinarians work. This involves examining animal patients, vaccination against infectious diseases, diagnosis of disease, performing medical and surgical treatments, and parasite control. Clinical practice can be in companion animals, food animals, horses, exotic animals, or aquatic animals. Some veterinarians specialize in one species like cats, fish, poultry, horses, pigs, or other birds.

Rabies Clinic

Being Pet Smart

Each year since the late 1970s, the Lumpkin County 4-H Club partners with VCA Chestatee Animal Hospital to host a not-for-profit Rabies Clinic for the Lumpkin County community and surrounding areas. The 4-H Rabies Clinic is unique in that it offers low-cost vaccine services, public education, and youth involvement.

Services offered include rabies shots for both cats and dogs as well as parvo and distemper. Community members arrive in their personal vehicles at the Lumpkin County Courthouse and Elementary Schools. The people and pets stay in their car while the veterinarian administers the vaccine. This is less stress on the animals and easier on the VCA veterinarian and staff. The 4-H members are present to distribute information about keeping pets safe as well as helping to process payments.

The American Veterinary Medical Association gives these top 5 reasons to vaccinate your pet:

1. Vaccinations prevent many pet illnesses.
2. Vaccinations can help avoid costly treatments for diseases that can be prevented.
3. Vaccinations prevent diseases that can be passed between animals and also from animals to people.
4. Diseases prevalent in wildlife, such as rabies and distemper, can infect unvaccinated pets.
5. In many areas, local or state ordinances require certain vaccinations of household pets.

Scan the QR code to see vaccination schedules for both dogs and cats.

Many other 4-H programs offer annual animal vaccine clinics. Check with your local UGA Extension/4-H office to see if there is one in your or a nearby community!

DETOUR

Debunking Vaccine Myths!

TRUE OR FALSE:

1. Infant (baby) immune systems cannot handle vaccines.
2. Vaccines are not worth the risk.
3. Vaccines can infect me with the disease that they claim to prevent.
4. The United States has low infection rates so we do not need to vaccinate.
5. Vaccine developers and researchers rushed the development of the COVID-19 vaccine, so it is not effective or safe.
6. Animals should not be vaccinated.

Surprise! All of these are FALSE.

My 4-H *Journey*

*"I pledge my **Head** to clearer thinking,*
*My **Heart** to greater loyalty,*
*My **Hands** to larger service,*
*and my **Health** to better living,*
for my club, my community, my country, and my world."

Georgia 4-H is dedicated to the empowerment of youth through various educational and leadership programs. Take a look at how our featured 4-Her has "pledge[d] her health to better living."

Lexi Lemmings

County: Chattooga
District: Northwest
Grade: 11th

How long have you been involved with Georgia 4-H?

I have been involved with Georgia 4-H since the 5th grade in 2017. Since 2019, 4-H has given me a platform to educate youth on various health topics, focusing on nutritional and mental health. I've taught several health classes and have presented about various health topics throughout my 4-H experience.

Did you have any concerns about getting the COVID-19 vaccine?

My main concern about the COVID-19 vaccine was about experiencing any major side effects.

What helped you overcome your fear?

To overcome my fear, I decided to research the COVID-19 vaccine. After reviewing credible information, I realized that the vaccine wouldn't only protect me, but it would protect others around me. I am a relatively healthy teenager, however, I am around many people who have major health problems.

How did 4-H help shape your decision?

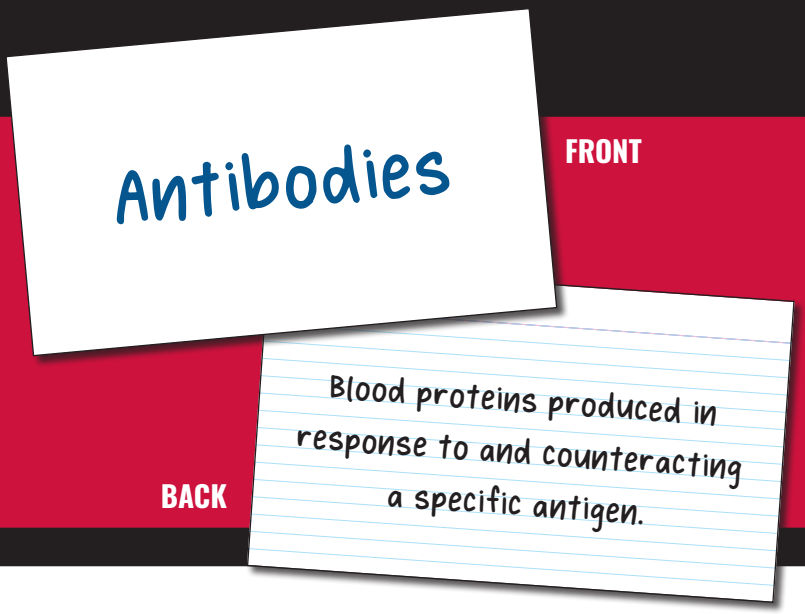
4-H helped shape my decision in several ways. One of the H's in 4-H stands for "Health." We are taught a variety of health topics and how to look out for others. 4-H has also taught me to be a leader with compassion. This is important because it taught me to take charge for the benefit of others. As an active member of 4-H, I meet youth from all over the state of Georgia. I have made so many close friends because of 4-H, and I want to help them anyway I can. Getting the vaccine reassured me that I was doing everything possible to protect the health of others.

Vaccine Vocabulary

FLASH CARDS!

Use the definitions below to create flash cards.

Be sure to put the vocabulary word on the front and its definition on the back.



Antibodies- blood proteins produced in response to and counteracting a specific antigen

Antigens- substances our bodies recognize as being foreign, which can include viruses or bacteria. In vaccines, this may include a weakened or inactivated ("dead") form of the virus or bacteria, or a piece of it (e.g., a protein)

Epidemiology- the branch of medicine which deals with the incidence, distribution, and possible control of diseases and other factors relating to health

G.R.I.T.S.- Georgia Registry of Immunization Transaction and Services; an immunization information system for Georgia that records immunization dates and dosages

Immune System- a complex network of cells, tissues, organ and the substances they make that helps the body fight infections and other diseases

Immunity- the body's ability to prevent the invasion of microorganisms that cause disease.

Immunology- the branch medicine that focuses on immunity

Innoculation- the process of giving someone a weak form of a disease, usually by injection, to build their immunity

Public Health- protecting and improving the health of people and their communities

Rabies- a preventable viral disease that can affect the central nervous system and is transmitted through the bite of rabid animals

Shelf Life- length of time an object remains usable

Vaccines- substances used to stimulate the production of antibodies and provide immunity against one or several disease

Vaccine Efficacy- measurement of how much vaccines lowered the risk of a particular disease and/or illness

Vaccine/Immunization Schedule- recommended timing and dosage of a vaccine or a series of vaccines

Vaccine Preventable Diseases (VPDs)- infectious diseases caused by viruses or bacteria that can be prevented with vaccines

Vial- a tall cylindrical bottle typically made of glass to store liquid medicine

Zoonosis- an infectious disease transmitted from animal to humans or humans to animals

GEORGIA 4-H

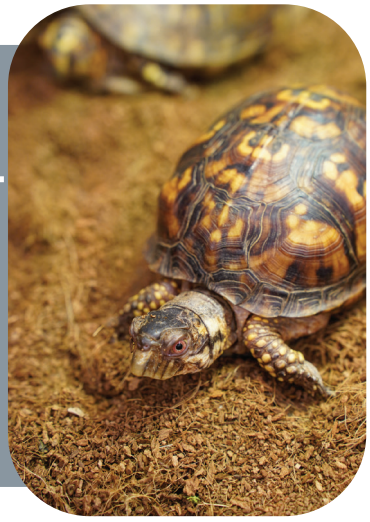
Project Achievement

Explore Your Interests

Pursue one of your passions or select a topic that excites you! Then we will help you choose the right Project Achievement category for you to compete in based on your topic of interest.

Unleash Your Creativity

Research, write, and design your demonstration. Project Achievement is like researched and planned show-and-tell. You can choose a new topic each year or stick to one.



Share Your Story

This is your time to shine! Participants present their demonstrations in small groups to trained judges in a friendly, supportive environment.

Celebrate Your Achievements

Awards are given for top presentations in each category. You will learn about yourself and improve skills while studying the topic you chose.

Project Achievement specifically seeks to help students grow by:

- Increasing self-confidence
- Improving communication and public speaking skills
- Developing responsibility and time management skills

For more information, contact your local county Extension office!

UNIVERSITY OF GEORGIA EXTENSION