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Exploring How Science and Technology Shape Lives

A Life Span Approach in Science & Technology with Community Integration and Impacts
Presented by: Talethia O. Edwards

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Setting the Stage: Access, Education, and Opportunity



- Access: The ability to reach and utilize science and technology resources.



- Education: Building skills and knowledge to understand and use technology.



- Opportunity: Translating access and education into career, health, and social success.



- How science and technology play critical roles in economic growth, health equity, and social mobility.

Life Span Perspective on Barriers

- Childhood: Early-stage access to tech and science resources.
- Adolescence: Deepening skills but facing educational disparities.
- Adulthood: Retraining and adapting to a changing workforce.
- Elderhood: Digital literacy and technology for quality of life.



Early Barriers in Childhood (Ages 0-12)

- Lack of early exposure to technology due to socioeconomic status.

- Limited school funding for STEM programs, especially in underserved communities.

- Parental lack of digital literacy can hinder support at home.

- Community centers and nonprofits often fill this gap, but resources are limited.

Adolescence: Educational Gaps and Opportunities Missed (Ages 13-18)

- Unequal distribution of tech education resources in schools.

- Gender and racial disparities in tech-focused extracurricular activities.

- Economic barriers to access after-school programs, internships, and competitions.

- Lack of mentorship or role models in science and technology fields for marginalized youth.

Adulthood: Limited Access to Retraining and Career Tech

- Economic constraints limit access to online courses, certifications, or retraining programs.

- Time constraints (family responsibilities, work) prevent adult learners from pursuing tech education.

- Workplace inequality: Unequal opportunities for upskilling, especially in lower-income jobs.

- Emerging fields in tech are often inaccessible to those without a STEM background.

Elderhood: Overcoming Digital Literacy and Tech Access Challenges

- Seniors often have limited digital literacy, making it hard to access online services.
- Financial constraints may prevent access to modern technology (e.g., smartphones, tablets).
- Healthcare technologies (telemedicine, health monitoring devices) are often inaccessible due to tech hesitancy or lack of training.
- Communities with fewer resources for senior programs suffer greater digital divides.



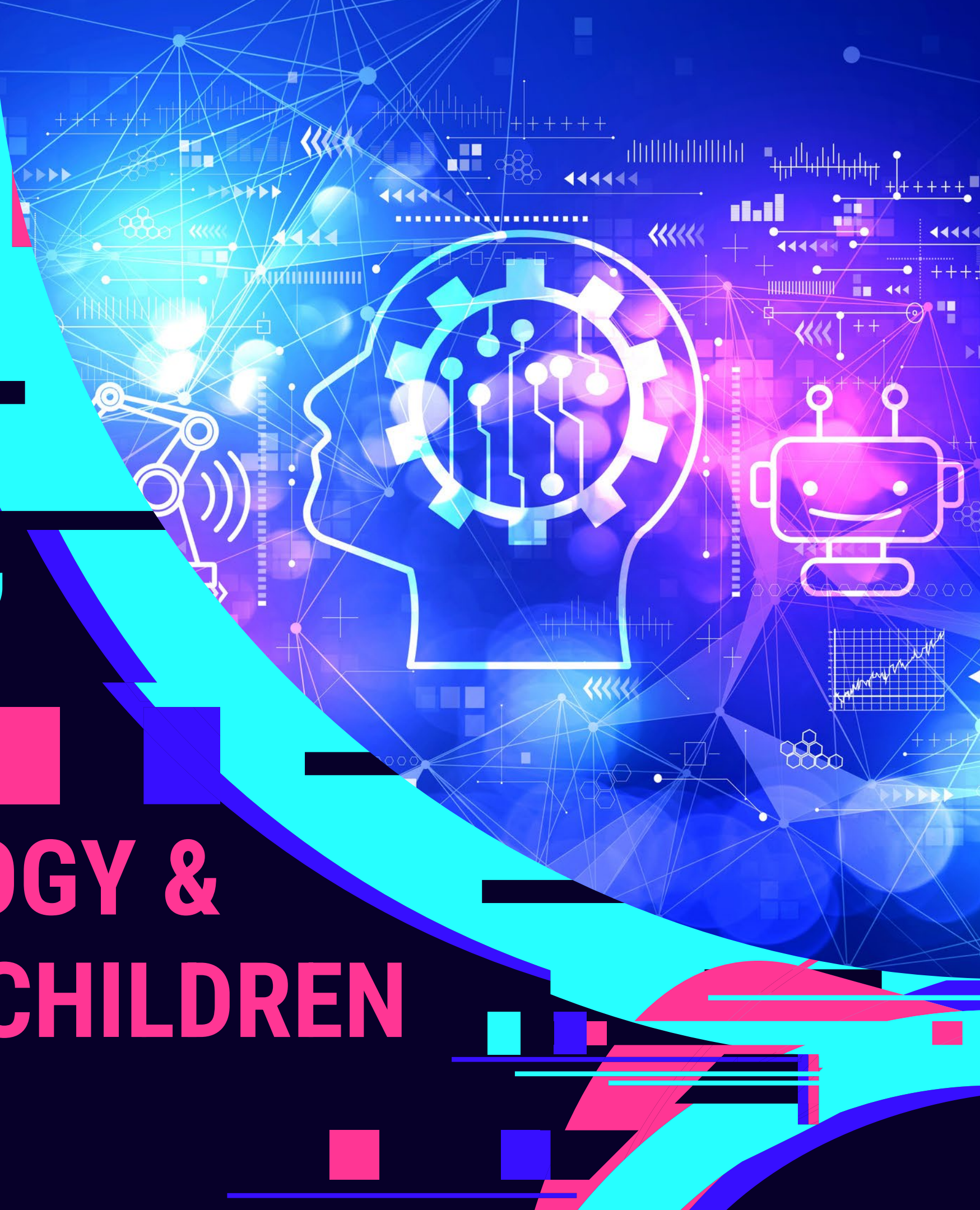
Community-Level Barriers: Resources and Inequality

- Urban vs. rural divides in internet infrastructure, with rural areas often having no broadband access.
- Underfunded public libraries and community centers cannot provide adequate tech education.
- Lack of community investment in tech-forward initiatives, particularly in underserved neighborhoods.
- Nonprofits and local organizations are often overstretched trying to fill these gaps.



OUR COMMUNITY, OUR HEALTH

THE IMPACT OF TECHNOLOGY & HEALTH ON ELEMENTARY CHILDREN



About Us

Scientiae is a leader in innovative STEM and health education, providing engaging, hands-on project-based learning experiences for students in grades K-12. Our mission is to fuel curiosity and inspire the next generation of scientists, engineers, health professionals, and innovators.

Through afterschool programs, summer camps, and community workshops, we focus on project-based learning, real-world problem-solving, and interdisciplinary collaboration. We empower students from diverse backgrounds with the skills and knowledge needed to thrive in a rapidly evolving world, preparing them for future success in STEM and health careers.

We emphasize addressing health challenges using technology, equipping students with the tools to develop innovative solutions in fields such as telemedicine, medical devices, and health data analytics.



Programs Addressing Tech and Health

- Our Science, Technology, Health, and AI programs provide dynamic, hands-on experiences that engage students in real-world applications of STEM concepts.
- From robotics, coding, AI development, and environmental science to health innovations, our programs are designed to foster critical thinking, problem-solving, and creativity.
- We focus on interdisciplinary learning, integrating science, technology, engineering, AI, and health fields to prepare students for future careers in cutting-edge industries. A key component of our approach is infusing AI into our curriculum, projects, and research opportunities, ensuring students are equipped with the latest knowledge and skills to innovate across various fields.
- Through project-based learning and interactive activities, students gain the tools and knowledge needed to excel in the 21st-century workforce, with a strong emphasis on AI's transformative role in STEM and health disciplines.

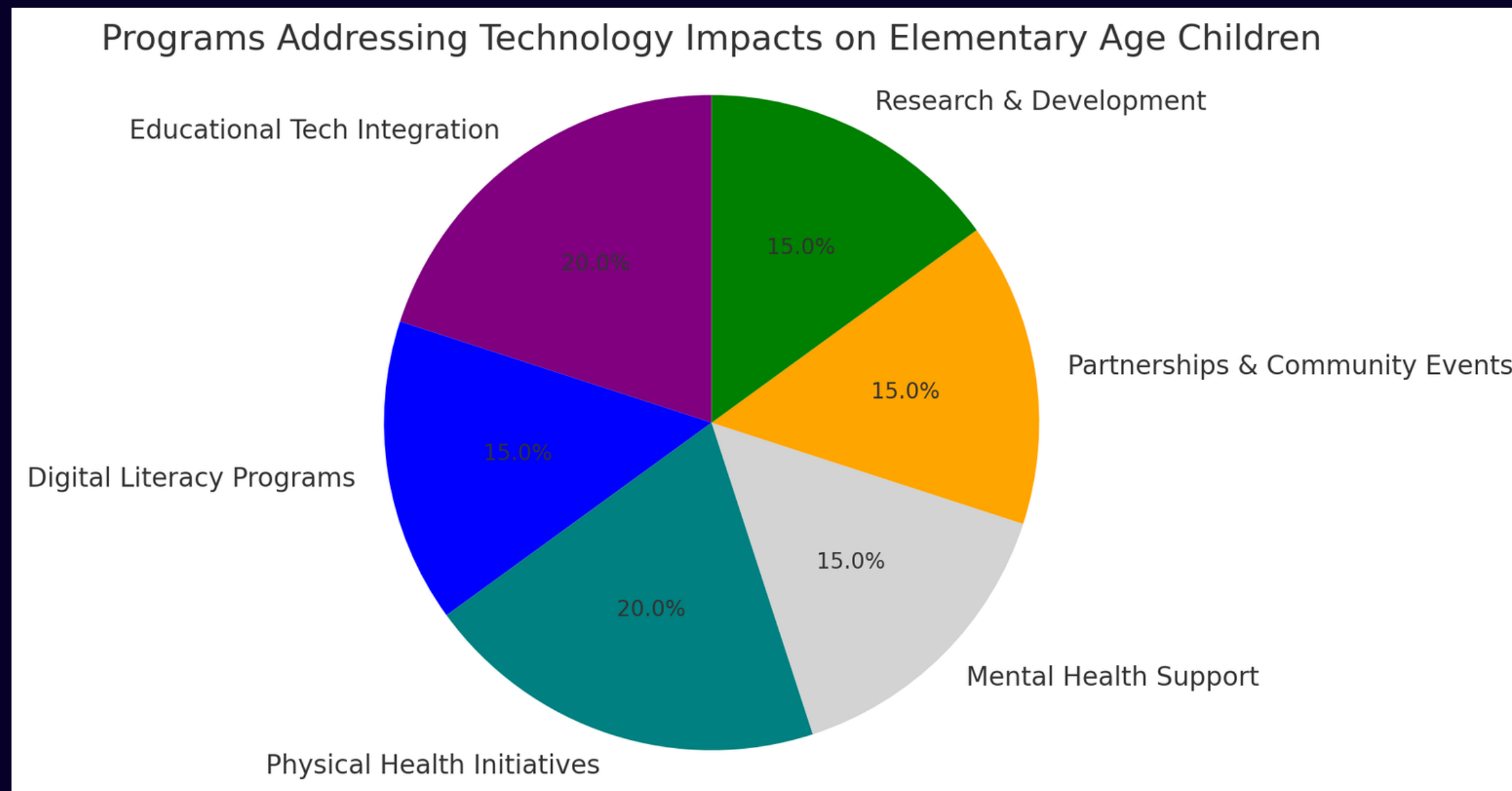


Current Impact of Technology and Health in Elementary Age Children

- Physical Health - Sedentary Lifestyle , increase in Obesity and other health related issues
- Mental and Emotional Health - Attention and Concentration Issues
- Social Development - Impacts on Social Skills
- Behavioral Changes - Addictive Behavior and Tech Dependence

Impact of Technology and Elementary Age Children

Developing interactive educational programs that enhance learning while promoting physical health and social interaction.



DISCUSSION: OPPORTUNITIES FOR THE FUTURE



AI-Driven Personalized Health
and Wellness Plans



Tech-Enhanced Physical
Education Programs




Digital Health Literacy
Curriculum




Telehealth for School
Wellness

THANK YOU

 contactus@iscientiae.org

 www.iscientiae.org

 850-815-2394

Digital Transitions: Harnessing Technology as You Grow

Jaquesha Jefferson, MPH, CAPM



CommHIT HQ @
Kennedy Space Center



Jaquesha Jefferson is a dedicated professional with a strong background in public health, project management, and managing and leading rural health initiatives. She holds a Bachelor's degree in Health Sciences on a Pre-Clinical track, and a Master of Public Health degree. She has worked collaboratively with health organizations, government entities at all levels, partners, and communities overseeing strategic planning, budgeting, and implementation to ensure programs meet federal compliance standards and delivered measurable improvements in performance.

Jefferson is a Journeyworker for one of CommHIT's Cyber First Responder apprentices. Jefferson oversees trainees in CommHIT's Tech-based Community Health Worker (CHW-T) program, aimed at empowering clients to use computers and the Internet safely.

Previously, Jefferson worked for the Florida Department of Health as the FLEX Grant Coordinator and served as CommHIT's Lead Data Analyst. Jefferson has a true passion for serving others and expanding access to care for all.



Jaquesha Jefferson, MPH, CAPM
Director of Outreach, Communications,
& Data, CommHIT



MISSION

Increase community health, develop workforce, and improve lives by planning & operationalizing complex programs that involve combinations of community, health, & technology in areas that are rural, underserved, or otherwise remote.

Welcome to the Digital Frontier

- Just a few years ago, Zoom and Microsoft Teams were unheard of, can we imagine that now?
- Technology is now incorporated in everyday life
 - Doctor appointments
 - Remote/Telework opportunities
 - A normality to connect with long distance family
- Rapid changes in technology emphasize the importance of adaptability. We must be adept to increase the potential for growth.



- Tech-based Community Health Worker
 - Community Paramedics have trained in this program as well.
- U.S. Dept of Health and Human Services Cyber Training: 405(d) Program
- Pre-Apprenticeship Programs
- Apprenticeship Program- Technology and Health Apprenticeship Program (THAP)



LET'S HELP EACH
OTHER WITH
**GOOD
JOBS
FOR ALL**



Good Jobs For All

- ✓ Provides up to \$2,125 in training for each apprentice
- ✓ Provides in-kind documentation
- ✓ CommHIT assists with obtaining additional funds for you through the local CareerSource Boards

For more information, contact:
Jaquesha Jefferson, MPH, CAPM
Jaquesha.Jefferson@CommHIT.org



Apprenticeship Success Story: Lake Butler Hospital



Digital Literacy Matters!

Employability and Career Advancement

- Many jobs now require digital skills, even outside of tech-focused industries.

Online Safety and Security

- Many people fall victim to scams because they don't know how to spot fraudulent emails or fake websites.

Enhancing Learning and Education

- Digital literacy is essential for academic success. It enables students to navigate online learning tools effectively and helps them differentiate between reliable sources and misinformation

Business Growth and Innovation

- Digital literacy allows businesses to thrive in a competitive market by adapting to new technologies, improving efficiency, and expanding their customer base through digital channels.



Come to CommHIT24 on Oct 17 & Tech Zone & CP Zone meetings on Oct 18

CommHIT24

Oct 17 9am-5pm @ Kennedy Space Center

Hear Kathy's CommHIT24 Message
Scan or Call Toll-Free: 877-959-4101



Co-Hosts:



FLORIDA DEPARTMENT OF
EDUCATION
fldoe.org



You must register by **OCT 9**
CommHIT.org/commhit24event

Keynote: Kathy Ireland
You're invited!

Use code kiWW50 for 50% off the cost of registration.

LabGenie: An AI-Powered Patient-Facing Application for Lab Results Comprehension

Zhe He, PhD, FAMIA

Interim Director, Institute for Successful Longevity

Associate Professor

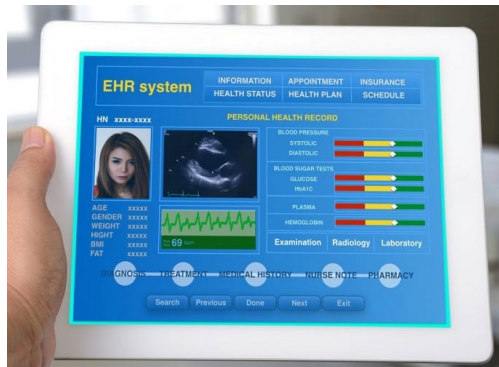
School of Information

Florida State University

zhe@fsu.edu

www.labgenie.us

- Patients have easy access to their clinical data via patient portals
 - **Viewing lab results**
 - Communicating with providers
 - Viewing medications
 - View medical history
 - ..
- Patients often find lab results confusing and hard to understand
 - Health literacy
 - Complexity of the results



Mayo Clinic to charge for MyChart messages

Giles Bruce - Monday, August 14th, 2023

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Rochester, Minn.-based Mayo Clinic plans to charge patients up to \$50 for patient portal messages to their providers, the *Star Tribune* reported Aug. 14.

Mayo joins a growing list of health systems that have started billing for MyChart messages in response to an explosion in the digital interactions. Mayo's new policy starts Aug. 18, according to the story.

"The volume and type and complexity of these messages has been increasing really exponentially," Conor Loftus, MD, chair of Mayo's outpatient practice subcommittee, told the news outlet. "Within those messages, the type of care being delivered ... often involves care coordination and complex decision-making."

The charges will apply to messages that require a diagnosis or other clinical decision, according to the story. Mayo providers received 6.4 million messages from patients in 2022. Patients who can't afford the charges will be referred to financial assistance.

Other health systems that now bill for the messages include Cleveland Clinic, Baltimore-based Johns Hopkins Medicine, and Renton, Wash.-based Providence.

HEALTH | WELLNESS

Raw Medical Test Results Right to Your Inbox Spark Confusion and Concern

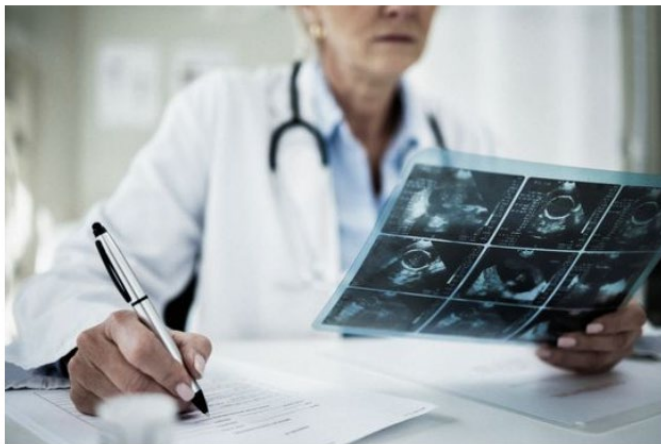
People more often are seeing test results before their doctors do

By [Sumathi Reddy](#) [Follow](#)

Sept. 14, 2023 5:30 am ET

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[Listen](#) (2 min)



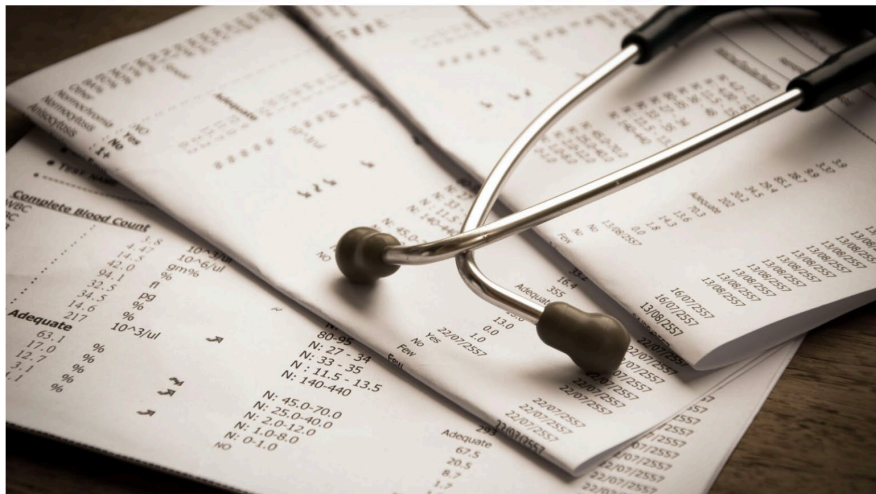
The push to release information was intended to make sure that patients had easy, immediate access to their health records. PHOTO: ISTOCK

FIRST OPINION

What happens when patients beat their doctors to their test results

By Christopher Medrano June 15, 2023

[Reprints](#)



ADOBE

Not so long ago, a father broke down in tears with me over Zoom — tears of relief.

When this father had received test results for his child, some of the values in the report appeared in red. That font color made him terrified for his child's health. It was only when we hopped on Zoom to go over the results that I was able to reassure him: They were in red because the system was comparing them with *adult* range values.

Lab Results Could Be Confusing

TESTS	RESULT	FLAG	UNITS	REFERENCE INTERVAL
Comp. Metabolic Panel (14)				
Glucose	70		mg/dL	65 - 99
BUN	15		mg/dL	6 - 24
Creatinine	1.00		mg/dL	0.76 - 1.27
eGFR If NonAfricn Am	92		mL/min/1.73	>59
eGFR If Africn Am	106		mL/min/1.73	>59
BUN/Creatinine Ratio	15			9 - 20
Sodium	139		mmol/L	134 - 144
Potassium	4.0		mmol/L	3.5 - 5.2
Chloride	100		mmol/L	96 - 106
Carbon Dioxide, Total	25		mmol/L	20 - 29
Calcium	9.0		mg/dL	8.7 - 10.2
Protein, Total	6.5		g/dL	6.0 - 8.5
Albumin	4.0		g/dL	3.5 - 5.5
Globulin, Total	2.5		g/dL	1.5 - 4.5
A/G Ratio	1.6			1.2 - 2.2
Bilirubin, Total	1.0		mg/dL	0.0 - 1.2
Alkaline Phosphatase	45		IU/L	39 - 117
AST (SGOT)	40		IU/L	0 - 40
ALT (SGPT)	40		IU/L	0 - 44

≤ 4 mg/dL

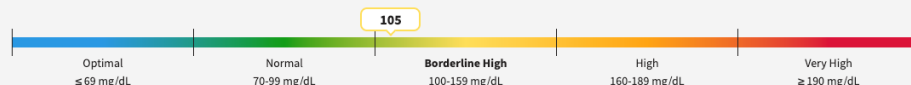
5-40 mg/dL

41-50 mg/dL

≥ 51 mg/dL

High LDL Chol Calc (NIH)

Measures the amount of low-density lipoprotein (LDL) cholesterol in the blood, known as "bad" cholesterol because LDL particles can build up in the walls of your arteries, which increases the risk of heart attack and stroke, among other conditions.



Thyroid stimulating hormone (TSH):

0.45- 4.50 mIU/L: normal

5-10 mIU/L: mild hypothyroidism

>10 mIU/L: thyroid failure

American Association of Clinical Endocrinologists:

0.3-3.0 mIU/L: normal

National Academy of Clinical Biochemistry:

0.5-2.0 mIU/L: normal

Pregnant? First trimester: 0.2 – 2.5 mIU/L



User-Centered System Design for Communicating Clinical Laboratory Test Results: Design and Evaluation Study

Zhan Zhang¹ ; Lukas Kmoch¹ ; Xiao Luo² ; Zhe He³ 

Article

Authors

Cited by (1)

Tweetations (3)

Metrics

- [Abstract](#)
- Introduction
- Methods
- Results
- Discussion
- References
- Abbreviations
- Copyright

Abstract

Background:

Personal clinical data, such as laboratory test results, are increasingly being made available to patients via patient portals. However, laboratory test results are presented in a way that is difficult for patients to interpret and use. Furthermore, the indications of laboratory test results may vary among patients with different characteristics and from different medical contexts. To date, little is known about how to design patient-centered technology to facilitate the interpretation of laboratory test results.

Objective:

The aim of this study is to explore design considerations for supporting patient-centered communication and comprehension of laboratory test results, as well as discussions between patients and health care providers.

Methods:

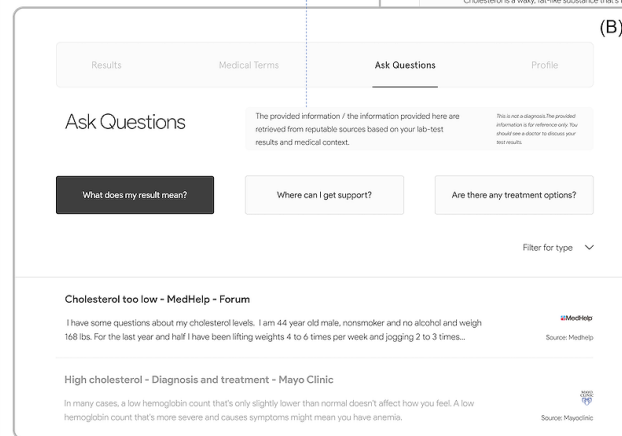
We conducted a user-centered, multicomponent design research consisting of user studies, an iterative prototype design, and pilot user evaluations, to explore design concepts and considerations that are useful for supporting patients in not only viewing but also interpreting and acting upon laboratory test results.

Results:

The user study results informed the iterative design of a system prototype, which had several interactive features: using graphical representations and clear takeaway messages to convey the

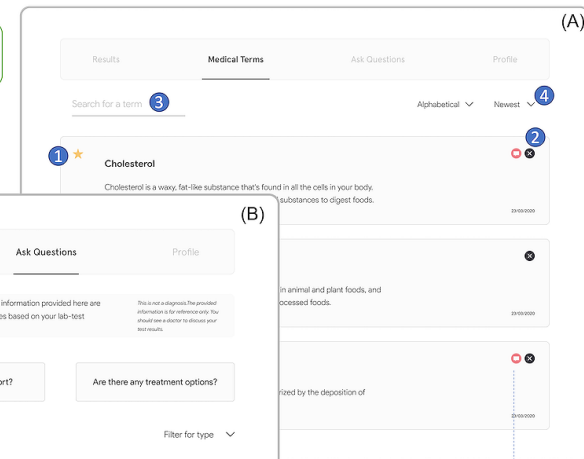
The user can (1) mark a favorite medical term, (2) delete a term from this list, (3) search, and (4) sort the saved terms.

A side note explaining what user can obtain from this page and how they should use the provided information.



The user can click on highlighted medical terms to view more patient friendly explanations.

What is high LDL?



An indicator that annotations and comments have been added to a specific term section.

LabGenie: A Patient-Engagement Tool to Aid Older Adults' Understanding of Lab Test Results (R21HS029969)

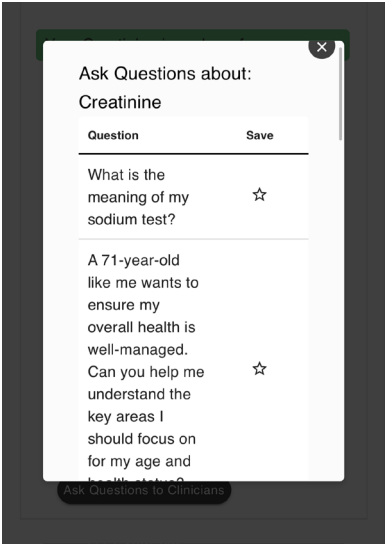
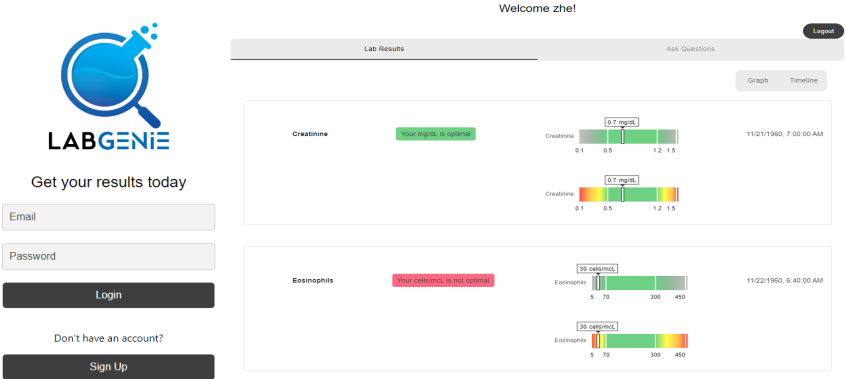
- There is increasing interest in promoting the use of ICT to engage patients in their own healthcare.
- Use of patient-facing tools like patient portals has been found to improve the overall quality of preventive or follow-up care, improve medication adherence and compliance with treatments, as well as reduce caregiver burden
- However, multiple factors have been found to hinder older adults' ability to fully optimize their use of these tools and their ability to retrieve and understand health information provided.
- Viewing lab test results is one of the most used features of patient portals, but older adult patients with limited health literacy and technology skills encounter the most problems locating and interpreting lab results.

Funded by: Agency for Healthcare Research and Quality
Funding Period: 4/2024 - 3/2029
Total Amount: \$1,014,336



How can we improve older adults’ ability to comprehend their lab tests better?
How can we improve older adults’ confidence to participate in shared decision making with their doctors?

In this project, we will design, develop, and evaluate **LabGenie**, a web-based patient-facing tool that will provide visual presentations of lab results to help patients comprehend their lab results. Using AI, we will also generate contextualized information about their lab test results and create personalized question prompts that they can use in follow-up.



Core Team



Zhe He, PhD (Contact PI)



Mia Lustria, PhD (MPI)



Zhan Zhang, PhD
(Co-Investigator)



Xiao Luo, PhD
(Co-Investigator)



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Michael Killian, PhD
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Karim Hanna, MD
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Allen Gavilan
(Software Consultant)



Balu Bhasuran, PhD
(Data Scientist)



Dhruv Kale
(App Developer)



Xiaoyu Wang
(GRA)



Lovinta Atrinawati
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Thy Tran
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Angelique Deville
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Hailey Thompson
(Data Curator)

Advisory Panel and Collaborators



Dawn Carr, PhD



Jing Wang, PhD, RN, FAAN



Neil Charness, PhD



Yang Gong, MD, PhD, FIAHSI



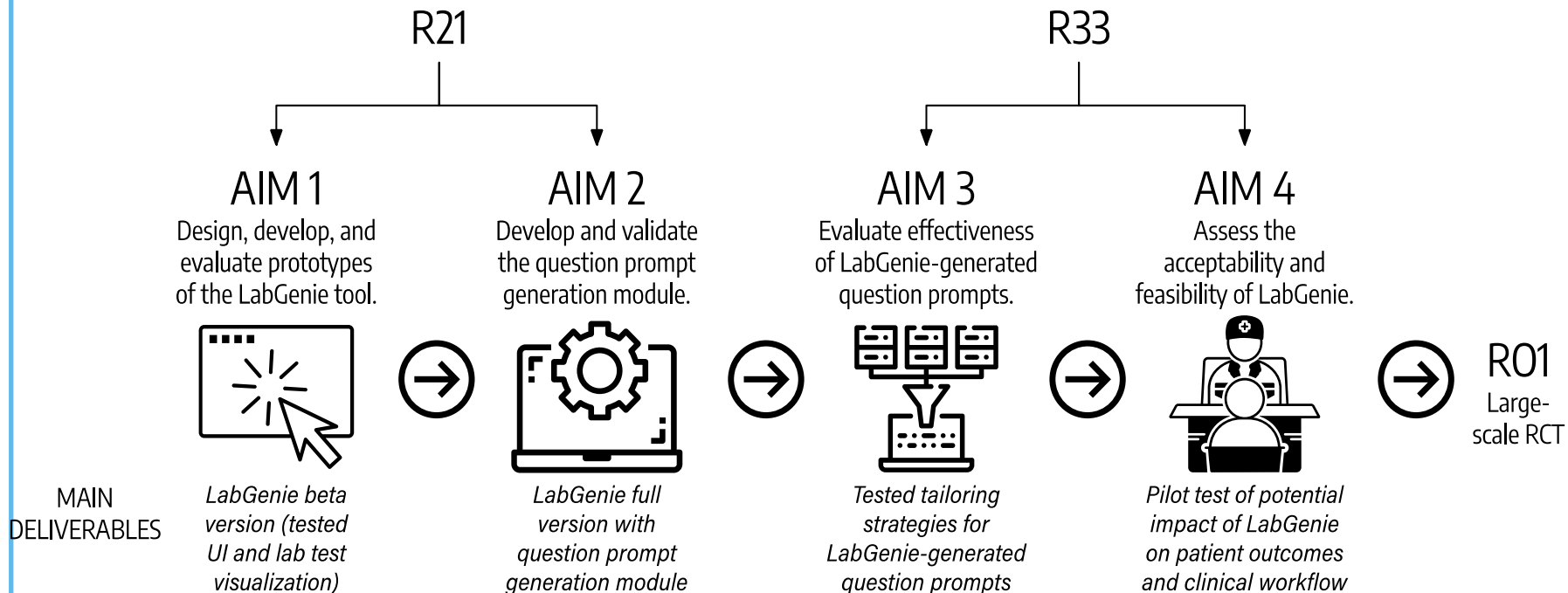
Lisa Granville, MD



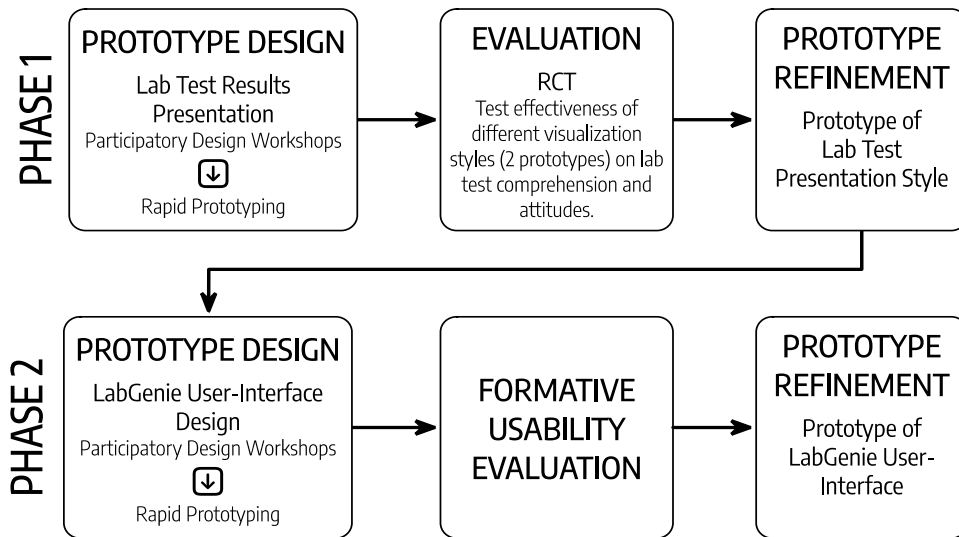
Zhiyong Lu, PhD,
FACMI, FIAHSI



Qiao Jin, MD



User-Centered Design Studies



Recruitment at Tallahassee Senior Center



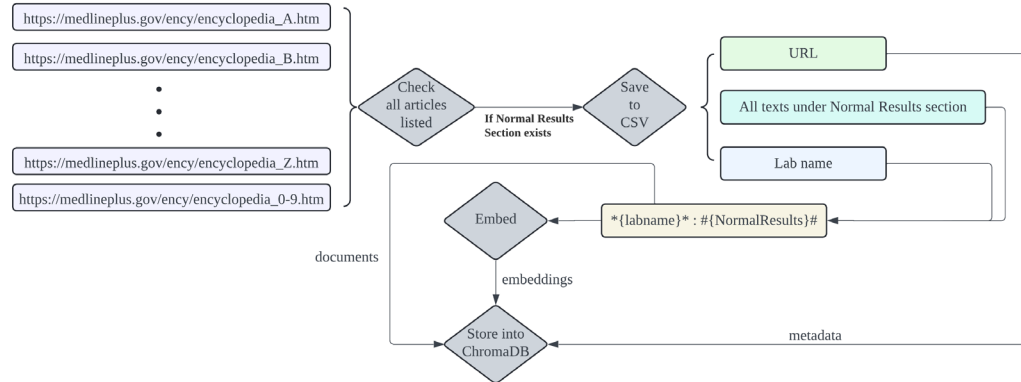
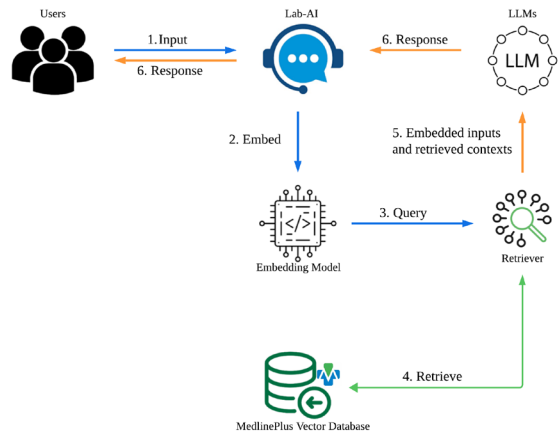


Table 2: Factor Retrieval Performance

Factor retrieval	Normal Range Retrieval
<p>System Prompt: You are an AI assistant specialized in analyzing medical lab test data. Your task is to extract key factors that definitively determine the normal range for various lab tests. You will be given the lab test name. Please do the following:</p> <ol style="list-style-type: none"> 1. Analyze the paired normal ranges and any accompanying criteria of the lab test from the vector database. 2. Extract and list only the key factors that influence the normal range and are associated with specific numeric values or ranges. Factors mentioned without corresponding numeric ranges should be ignored. 3. Present the output as a simple list of keywords, without explanations. If there are no key factors with associated numeric ranges, present the output as None. <p>Be concise and focus only on the most crucial determining factors that have explicitly stated numeric ranges.</p> <p>Analyze the following lab test information and provide a list of keywords that are decisive in determining the normal range. Output should be in the format: [keyword1, keyword2, keyword3, ...] or [None]</p> <p>Example 1: Male adult: 15g, Female adult: 10g, Male child: 8g, Female child: 4g Response: [Sex, Gender]</p> <p>Example 2: normal range: 1-10g. Normal values may vary with age and sex. Response: [None]</p> <p>User: Erythrocyte sedimentation rate (ESR)</p> <p>Response: [Age, Sex]</p>	<p>System Prompt: You are a medical expert. You will be provided a question about the normal range of the test and you will give the answer based on the information from the vector database. Leave "N/A" if not found. Please only give the reference range. (e.g., 13.5-24.5 mg / hour, less than 60 mL, N/A)</p> <p>User: What is the normal range for erythrocyte sedimentation rate (ESR) test in men under 50 years old?</p> <p>Response: Men under 50 years old: less than 15 mm/hr</p> <p>User: What is the normal range for erythrocyte sedimentation rate (ESR) test in men over 50 years old?</p> <p>Response: Men over 50 years old: less than 20 mm/hr</p> <p>User: What is the normal range for erythrocyte sedimentation rate (ESR) test in women under 50 years old?</p> <p>Response: Women under 50 years old: less than 20 mm/hr</p> <p>User: What is the normal range for erythrocyte sedimentation rate (ESR) test in women over 50 years old?</p> <p>Response: Women over 50 years old: less than 30 mm/hr</p>

	Non-RAG			RAG		
	Precision	Recall	F-1	Precision	Recall	F-1
GPT-3.5-turbo	0.612	0.65	0.630	0.353	0.663	0.461
GPT-4-turbo	0.632	0.688	0.659	0.95	0.95	0.95
GPT-4	0.477	0.638	0.545	0.796	0.925	0.855

Table 4: Normal Range Retrieval Performance

		GPT-4-turbo			GPT-4-turbo with RAG		
		w/o factor	w/ factor	Overall	w/o factor	w/ factor	Overall
Question Level	# of total	38	113	151	38	113	151
	# of correct	18	40	58	37	113	150
	Accuracy	0.474	0.354	0.384	0.974	1.00	0.993
Lab Level	# of total	38	30	68	38	30	68
	# of correct	18	13	31	37	30	67
	Accuracy	0.474	0.433	0.456	0.974	1.00	0.985

Prompt

What questions should I ask my physician based on the following clinical data to ensure my treatment plan is holistic, addresses all underlying conditions, and adapts to changes in my health status? Please make sure to ask four questions for each lab test, considering the lab test values with reference ranges. Only provide the questions to the physician.

I am a 78 year old white male.

The following are the lab test results:

Lab Test Date, Lab Test name, Test Value, Unit

[Timestamp('2020-03-07 00:00:00'), 'Alanine aminotransferase', 14.0, 'U/L']

[Timestamp('2020-03-07 00:00:00'), 'Thyroxine.free', 1.1, 'ng/dL']

[Timestamp('2020-03-07 00:00:00'), 'Calcium', 9.5, 'mg/dL']

[Timestamp('2020-03-07 00:00:00'), 'Glomerular filtration rate/1.73 sq

M.predicted.black', 37.0, 'mL/min/{1.73_m2}']

[Timestamp('2020-03-07 00:00:00'), 'Carbon dioxide', 18.0, 'mmol/L']

[Timestamp('2020-03-07 00:00:00'), 'Creatinine', 2.0, 'mg/dL']

The following medications were recently used:

'START_DATE', 'Drug_CUI', 'Medication

'2020-02-20 00:00:00, 1300791, mirabegron 25 MG 24HR Extended Release Oral Tablet

2019-10-17 00:00:00, 1652639, insulin lispro 100 UNT/ML in 3 ML Pen Injector

The following diagnoses were listed into my chart:

'START_DATE', 'ICD Code', 'Diagnosis

2020-11-21 00:00:00, N39.0, Urinary tract infection, site not specified

2020-02-20 00:00:00, D46.9, Myelodysplastic syndrome, unspecified

2020-02-20 00:00:00, E11.9, Type 2 diabetes mellitus, without complications

2020-02-13 00:00:00, N28.1, Cyst of kidney

2019-11-04 00:00:00, E78.2, Mixed hyperlipidaemia

Questions

Given my use of insulin and mirabegron, how often should my thyroid function be checked, considering my thyroxine level of 1.1 ng/dL?

Considering my current medications, what monitoring is necessary for my liver function tests, given my alanine aminotransferase level of 14.0 U/L?

Given my creatinine level of 2.0 mg/dL, should we consider adjusting my medications?

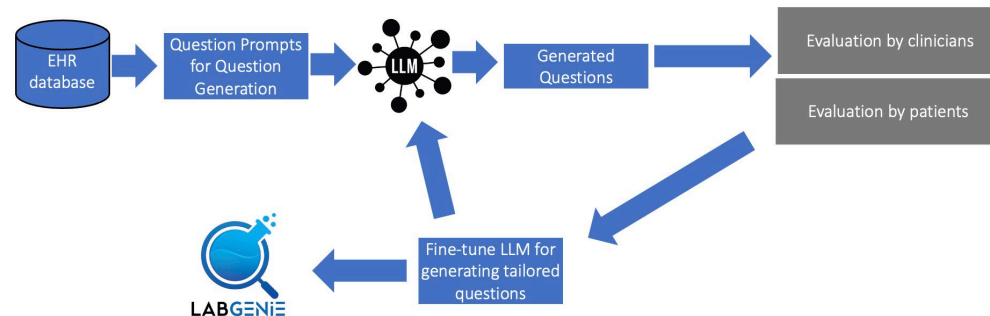
Considering my history of mixed hyperlipidemia, how should I interpret and manage my triglyceride level of 329 mg/dL?

What are the implications of my current medication on managing my mixed hyperlipidemia, given my cholesterol level of 185 mg/dL?

How does mirabegron potentially impact my kidney function, given my creatinine level of 2.0 mg/dL and GFR of 37 mL/min/{1.73_m2}?

What specific dietary and lifestyle recommendations can help manage my calcium level of 9.5 mg/dL and support bone health?

What symptoms or changes in my health should I watch for that might indicate issues with my thyroid function given my free thyroxine (T4) level of 1.1 ng/dL?





Kick-off Meeting (4/2024)



UROP Symposium (4/2024)



FSU Foundation Visit (9/2024)

Website of LabGenie Project

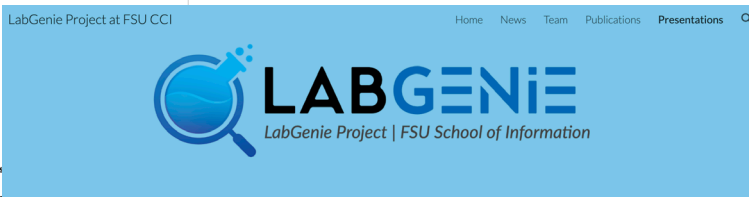


Project Description

There is increasing interest in promoting the use of information and communication technologies, for example, can provide patients with secure access to lab communication with healthcare providers. Use of patient-facing tools like follow-up care, improve medication adherence and compliance with the healthcare needs, such as older adults with multiple chronic conditions, have been found to hinder older adults' ability to fully optimize their information provided. Viewing lab test results is one of the most used features and technology skills encounter the most problems locating and interpreting develop and evaluate a working prototype of *LabGenie*, a web-based comprehension of lab results, and engagement in managing and acting on lab results and generate question prompts tailored and contextualized to a user-centered approach focused on rapid prototyping and usability testing.



- Publications**
- Under Development**
1. Mia Lustria, Lovinta Atirawati, Obianuju Aliche, Zhe He. *Systematic Review of Lab Test Results Reporting and Comprehension in Healthcare Informatics Research*.
 2. Balu Bhasuran, Qiao Jin, Karim Hanna, Cindy Shavor, Jennifer Costa, Carl Yang, Zhiyong Lu, Zhe He. *Evaluating the Impact of Language Models Generated Differential Diagnoses from Clinical Case Vignettes*. Target venue: npj Digital Medicine
 3. Balu Bhasuran, Qiao Jin, Mengqian Lyu, Yonghui Wu, Zhiyong Lu, Zhe He. *LabQAR: A Curated Dataset for Question Answering Ranges and Interpretation*. Target venue: Scientific Data
 4. Zhe He, Balu Bhasuran, Hansita Penikalapati, Wade Rogers, Karim Hanna, Cindy Shavor, Lisbeth Garcia Arguello, Xiao Luo, Mi. *Approach to Generate Tailored Questions Prompts about Lab Test Results for Patients for Physician Consultations*. Target venue: JAMIA
- Submitted / Under Review**
1. Mahshad Koochi Habibi Dehkordi, Yehoshua Perl, Fadi Deek, Zhe He, Vignina Keloth, Hao Liu, Gai Elhanan, Andrew J. Einstein. *Models Summarization by Highlighting Clinical Notes*. Submitted to the *Journal of Medical Internet Research*.
 2. Xiaoyu Wang, Haoyong Ouyang, Balu Bhasuran, Xiao Luo, Karim Hanna, Mia Liza A. Lustria, Zhe He. *Lab-AI - Retrieval-Augmented Personalized Lab Test Interpretation in Clinical Medicine*. Submitted to *AMIA 2025 Informatics Summit*.



- Presentations**
- Oral Presentations**
1. Dr. Zhe He gave a webinar talk "Towards An AI-Powered Application for Laboratory Test Results Comprehension" at University of Pittsburgh Department of Health Information Management in September 2024.
 2. Dr. Zhe He gave a webinar talk "Using Informatics and Generative AI to Support Patients' Understanding of Lab Test Results" at OneFlorida+ Clinical Research Consortium in April 2024.
 3. Dr. Zhe He gave a webinar talk "Using Informatics and Generative AI to Support Patients' Understanding of Lab Test Results" at the National Institutes of Health Text Mining and Natural Language Processing Special Interest Group in January 2024. ([NIH Videocast link](#))
 4. Dr. Zhe He gave a webinar talk "Using Informatics and AI to Support Patients' Comprehension of Lab Test Results" at FSU Institute for Successful Longevity in November 2023.

<https://sites.google.com/view/labgeniefsu/home>



Thank you!!

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Addressing Systemic Barriers



- Policy change is necessary to provide equitable funding for STEM education and community resources.



- Public-private partnerships can bring tech resources to underserved communities.



- Investing in digital literacy programs for all ages is critical.



- Tech companies and institutions should foster inclusive mentorship and scholarships for underrepresented groups.

Solutions Along the Life Span

- Childhood: Expand STEM programs in underserved schools, partner with nonprofits.

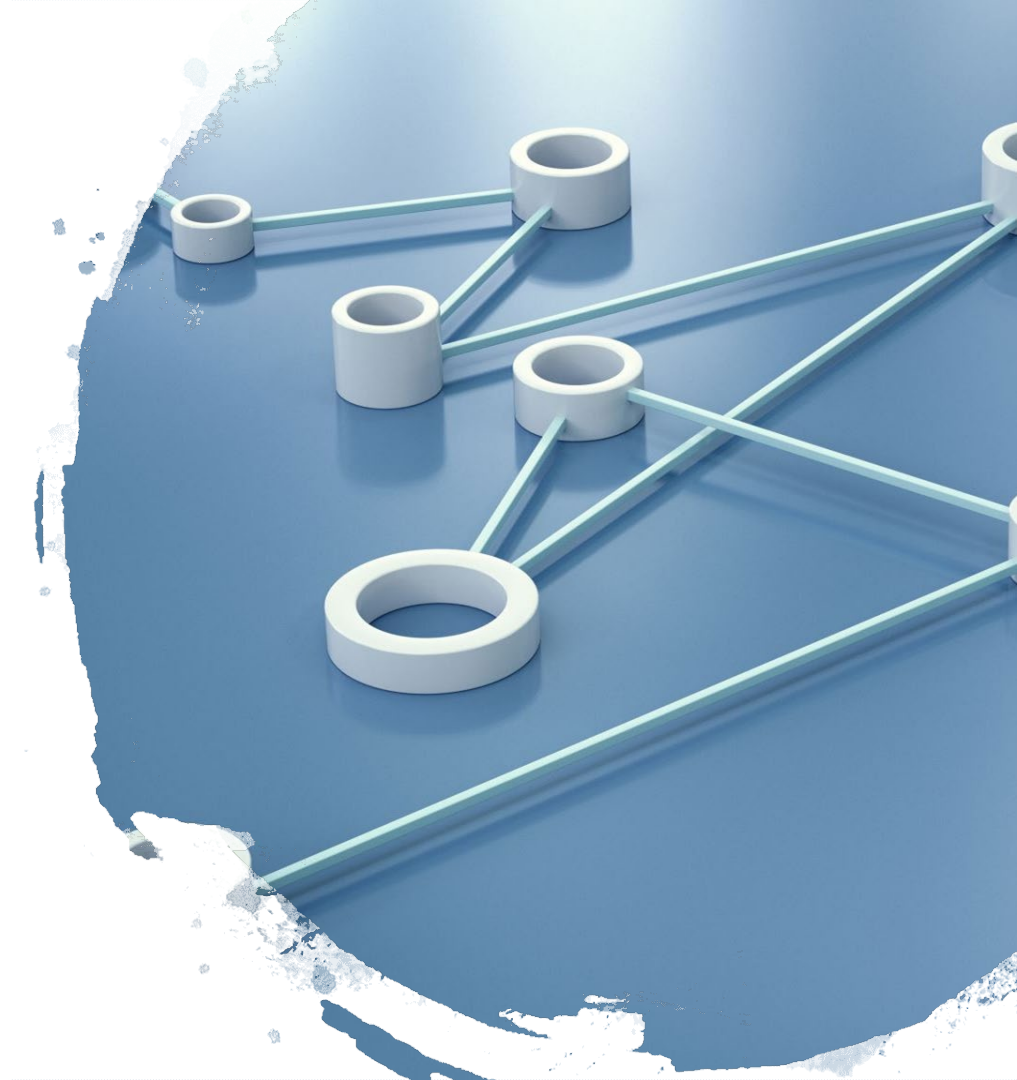
- Adolescence: Mentorship programs, scholarships, and tech internships for marginalized groups.

- Adulthood: Subsidize online learning and retraining opportunities.

- Elderhood: Community-driven tech support and digital literacy programs.

Overcoming Barriers for Equitable Access

- Access, education, and opportunity must be addressed together to overcome tech-related barriers in communities.
- A life span approach ensures that no age group is left behind in tech advancement.
- Community, policy, and organizational collaboration are key to driving change.





Questions & Discussion