Allegra W. Smith, Purdue University

DIGITAL AGE: a study of older adults' user experiences with technology

BA Professional Writing, Gender Studies, Michigan State University, 2013 MA Digital Rhetoric & Professional Writing, Michigan State University, 2015 PhD Rhetoric & Composition (ABD), Purdue University, 2021





EDUCATOR

Technical & professional writing; multimodal composing

RESEARCHER

User experience (UX); design; online writing instruction & curriculum

Who I Am



ADVOCATE

AARP Tax-Aide volunteer; community engagement for elders

My Research Agenda

PEOPLE, TECHNOLOGY, COMMUNICATION

How do intersectional facets of our identities mediate our experiences with technology? INTEGRATED THREE-PART APPROACH

Design (UX) Documentation Education

My Research Combines...

TECHNICAL & PROFESSIONAL WRITING

USER EXPERIENCE DESIGN

AGE STUDIES / LIFE COURSE WRITING

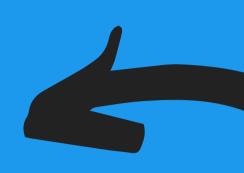
FEMINIST RESEARCH METHODOLOGY

Today's Agenda

DISSERTATION PROJECT OVERVIEW EXIGENCY + RATIONALE METHODS RESULTS + IMPLICATIONS RESEARCH AGENDA + TRAJECTORY QUESTIONS

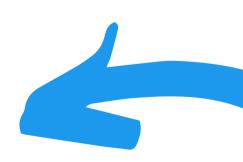
A CHANGING POPULATION PYRAMID...

Older adults are expected to outnumber children by 2035. This year, over one billion senior citizens are alive on the planet.



BUT AN UNCHANGED RESEARCH LANDSCAPE?

Technical and professional communication (TPC) research overwhelmingly focuses on school and work, though (despite a 2004 call to attend to aging!)





Literature on Older Adults + Technology

TECH COMM

Manifestos + Calls for Action

Lippincott, 2004 Chisnell, Redish, & Lee, 2006 O'Hara, 2004

HCI & UX

Experience Reports + Best Practices

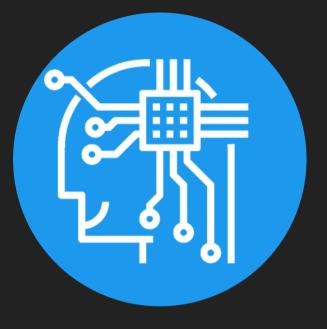
Kang & Yoon, 2008 (mp3 players) Brajnik & Giachin, 2014 (thermostats) Johnson & Finn, 2017; Wilkinson & Gandhi, 2015

COMP + LITERACY

Advocacy To Value Older Adult Computing as Literate Act

Bowen, 2011 & 2012 McKee & Blair, 2016 Rumsey, 2009

What's missing?





Users are depersonalized: the human element of HCI is forgotten

No deep dives looking at individual users or communities of users



No work on retirement communities as subjects or sources of data

Research StionS StionS

What does "everyday" computer and internet use look like for older adults living in a residential senior community?

What factors (material, infrastructural, embodied, cognitive, cultural, design, etc.) help or hinder older adults from realizing their technological goals?



What are the goals and purposes for technology usage articulated by older adults in this community? What motivations shape these?



What recommendations can be generated for a more inclusive experience architecture, given this age cohort's experiences and reflections on technology:?

Methods

1: SEMI-STRUCTURED INTERVIEWS

Answering questions about computing skills, learning, problems 15 participants, 7-30 minutes

2: NATURALISTIC (UNSTRUCTURED) OBSERVATIONS Walking through "everyday" computer use while "thinking aloud" 7 participants, 10–40 minutes

3. STRUCTURED TASK ANALYSES Completing a series of tasks to identify pain points 6 participants, 15-45 minutes

OOHAY

701 First Avenue

Summyvale, CA 94089

February 19, 2015

Attn: Communications Director

Dear Sire:

Term seeing RED. After 3 days of trying to change my a-mail with your organization with no success I am appealing to Corporate to solve my problem. I recently moved to a senior independent living apartment from my home. I no longer an able to use my former e-mail (dge1492@compost_em) as they do not service this place for froe. My new e-mail is dge1492@compost_em) as they do not service this place for accept text messages as I have had problems with bad calls So as a result your security won't allow me to make the necessary change in my e-mail. At E3 years old, I am quite able to talk with a representative which now is impossible. Of all the doctors, lawyers, companies, hospitals, and etc. you are the only company that is so unveschable by "CUMB" phone flease help me to resulve this problem as toon as possible as I would like to participate in rour services before I die. Computers are fine but sometimes a person that "talks" is important. Generely, hors J. Woodward (Highusprano30)

he Villages, Ff. 32162-2173

LIMB PHONE #352-638-3646 No service on text)

one phone 352-674-3882

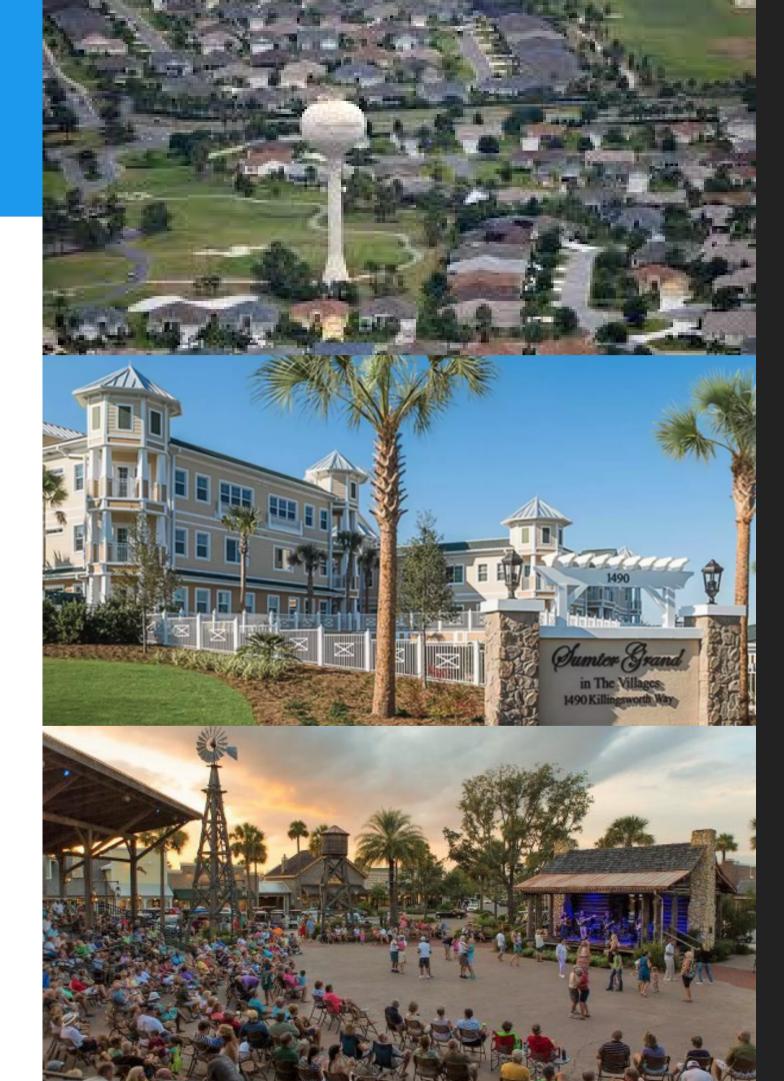
aast for it and let me know, PS 1 am on FACEBOOK if security really wants photo 10





PERSONAL CONNECTIONS & EXIGENCY

Spring Break visits with Grandma and the "red letter"



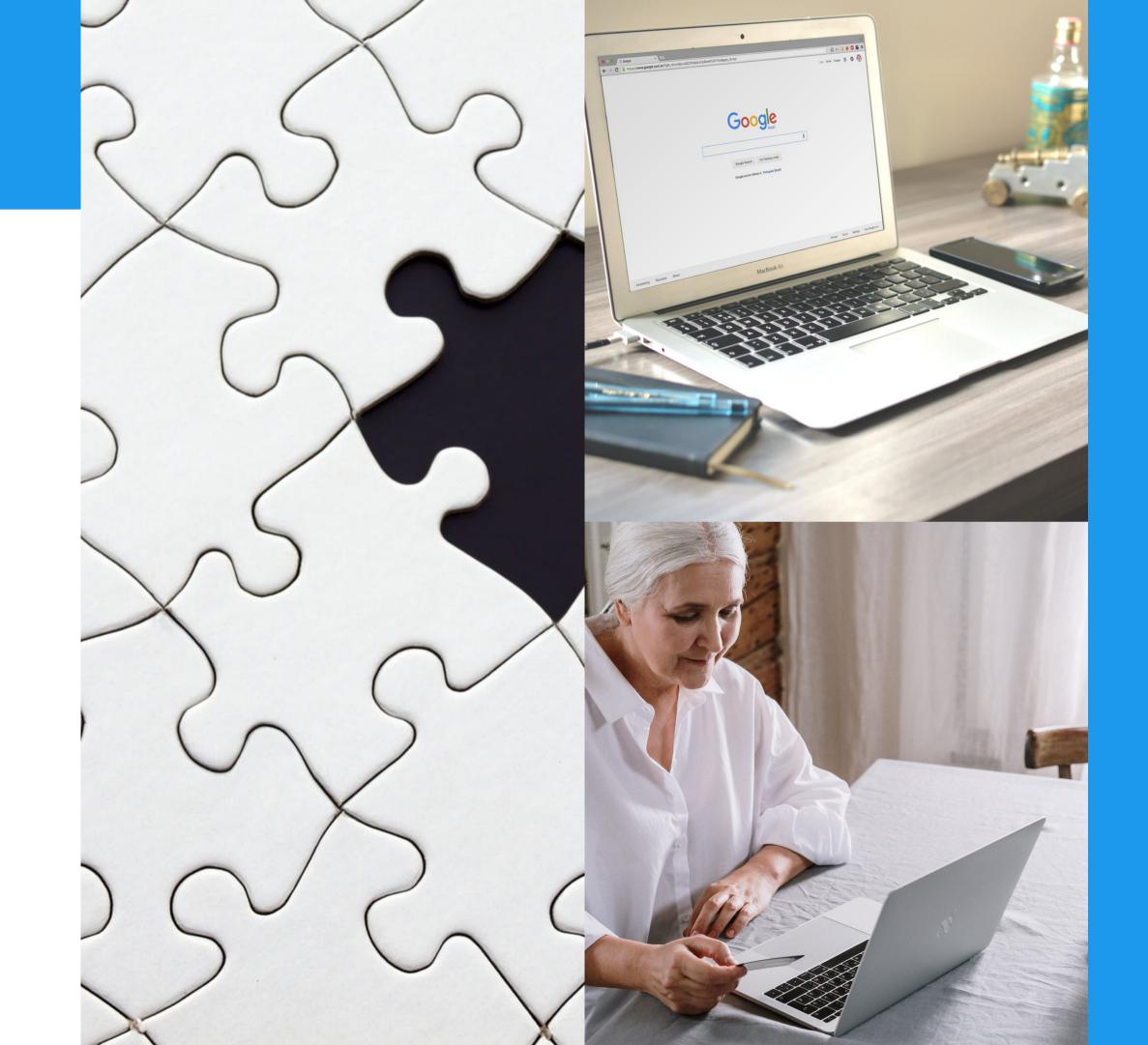
Median community age of 67.4 (research sample median age was 82.2)

Research Site

THE VILLAGES, A CENTRAL FLORIDA RETIREMENT COMMUNITY

The United States' fastest growing city

Population has doubled since 2010 (51,000 to 114,000 residents)



ILLUSTRATING RESULTS

Through participant Holly's structured task user experience

Search Strategy

M 🔟 💭 🚃	+ - 0 ×	
← → C @ https://mail.g	joogle.com/mail/u/0/?q=crouse+award&zx=16h65o18o6gm#inbox 🐵 🍳 🚖 🧐 🞯 🦛 📄 🚳 🖪 🖪 🙆 🕹 🧳 🍪	1
★ Bookmarks 附 Gmail 📑 Fac	cebook 😏 Twitter 🔞 Pinterest 🚯 Tumble 🔯 gCal 🔯 Blackboard 🐵 ABC 🔜 Weather 🗅 Website 💟 TweetDeck 🗢 Tax-Aide 🛛 😐 🧧 Other bookmarks	
= M Gmail	Q www.info on trumps finances.com X →	
	Q 1-20 of 20 < > \$	
Compose		
Inbox	There are no recent records that match your search.	
C Snoozed	Search the web for "www . info on trumps finances . com"	
> Sent		
	□ ☆ D +	
-		
(B)		
- v v		

Holly's User Journey

CLICK FIRST RESULT

[AD] TaxDeductible MedicalExpenses | Search &Find Quick Results

SPONSORED RESULTS APPEAR

For the same query on a different site, Information Vine (potentially dangerous paid search provider) SCAN RESULTS, SELECT OPTION

[AD] MedicalExpense TaxDeductions - FindYour Answer Today

NEW SEARCH RESULTS APPEAR

Advertisement links to ask.com's results for the same query; lather, rinse, repeat.

Holly's User Journey

Vine

Information

deduct medical expenses from taxes driving to doctors appointments

Did you mean: deduct medical expenses from taxes driving to doctor's appointments?

Need A Doctor In Your Area? - Request An Appointment

Ad · www.ahn.org/ • Save Time By Requesting In-Network Doctors Near You in Three Easy Steps. Online Bill Paying.

Find A Doctor Browse Our Network Of More Than 7,000 Health Care Professionals.

Specialties & Services Browse Our Specialties & Services Library To Find The Care You Need.

TurboTax® Official Site - File Your Taxes for Free

Ad . turbotax.intuit.com/live *

File Free or Connect with Experienced Tax CPAs Online. Also Available Nights and Weekends. Free Tax Calculators. Maximum Refund Guarantee. No Tax Knowledge Required. Maximize Your Deductions. Free Edition. File Tax Forms Online. Audit Support. Free Online Support. Types: Free Edition, Premier Edition, Online Products, Mobile Products, Military Discount, Deluxe Edition.

Free Tax Calculator Easily Import Your W-2 Import 2017 Tax Data E-File Your Taxes Today

Medical Expenses Tax Deduction - Instantly On Info.com

Ad · www.info.com/tax/results • Find Medical Expenses Tax Deduction Faster on Info.com. Save Time & Find it Here.

Tax Deductible Medical Expenses. - Tax Deductible Medical Expenses

Ad · www.govtsearches.com/SearchNow • Find Government results for Tax Deductible Medical Expenses! Learn More. Fast Results. Government Questions. Easy to Explore. Types: Government, Law, Resources, Tax Info.

Tax Deductible Expenses · List Of Tax Deductibles

SEARCHES



RELATED SEARCH

Tax Deductible Medical Expenses Tax Deductible Medical Expense Quest...

Ζ ATIO 0 Σ

SO WHAT CAN WE DO **ABOUT THIS?**

literate activity

- 2. Intervene through design, documentation, and instruction
- communities
- ourselves



1. <u>Revalue</u> older adults' technology engagement as

3. Give back to older adults in our regions and

4. Incorporate age and aging into the technology design process, considering users different from

Carliner's (2000) Info Design Dimensions





COGNITIVE

Helping users UNDERSTAND information

PHYSICAL

Helping users FIND information



AFFECTIVE

Motivating users to PERFORM

CONSIDERATIONS SHAPING OLDER ADULTS' UX

1. Embodied / Material 2.Cognitive / Psychological 3. Educational 4. Generational / Cultural

Embodied & Material Dimensions

OPTICAL-VISUAL Presbyopia, cataracts (make reading small text difficult

AUDITORY Reduced hearing capacity

MOTOR SKILLS & CONTROL Touch screen interfaces often preferred; trackpads or mice difficult to use

MOBILITY

ADDRESSING THESE DIMENSIONS IN DESIGN **INCREASES THE PRODUCTIVITY** & SATISFACTION OF ALL USERS (UNIVERSAL DESIGN)

DEXTERITY & FLEXIBILITY

Cognitive & Psychological Dimensions

COGNITION

Memory, attention, decision-making decrease as age increases

MENTAL FLEXIBILITY

SORTING & FILTERING

Ability to disregard perceptual information that's unrelated to the user's goal

ADDRESSING THESE DIMENSIONS IN DESIGN INCREASES THE PRODUCTIVITY & SATISFACTION OF ALL USERS (UNIVERSAL DESIGN)

I took a night course [in computers] at the high school with a friend of mine, and we were the oldest ones in the class. When they asked our age, we laughed... and that was a very basic course.



E D U C A T I O N A D I M E N S I O N S

MINNIE, 86 YEARS OLD



E D U C A T I O N A I D I M E N S I O N S

I didn't work for 25 years [after] having children]. The school system asked me to come back, and they had computers. And without the secretary at another elementary school, who helped me out considerably, I wouldn't have had a clue... because it just never entered my lifestyle! Typewriting and all, but not a computer.

HOLLY, 80 YEARS OLD

Cultural / Generational Dimensions



CURRICULUM OF AGING

The set of assumptions about what it means to be old or growing old in a society: in the US now, linked to bodily disrepair, supposed incompetence or inability to learn new technology, etc.

VAHOO-

701 First Avenue

Summyvale, CA 94089

February 19, 2015

Attn: Communications Director

Dear Sirs:

I am seeing RED. After 3 days of trying to change my e-mail with your organization with no success I am appealing to Corporate to solve my problem. I recently moved to a serior independent living apartment from my home. I no longer am able to use my former e-mail (dge1492@cormostl.eet)) as they do not service this place for free. My new e-mail is djw1492@col.com. I have a very "DUMII" phone that does not accept text messages as I have had problems with bad calls So as a result your security won't allow me to make the necessary change in my e-mail. At E3 years old, I am quite able to talk with a representative which now is impossible. Of all the doctors, lawyers, companies, hospitals, and etc. you are the only company that is so unreachable by "CUMB" phone please help me to resolve this problems as soon as possible as I would like to participate in your services before I die. Computers are fine bits sometimes a person that "talks" is important. Sincerely,

Doris J. Woodward (Highsuprano30) 1490 Killingsworth Way, #340 The Villager, H. 32162-2173 (DUMB PHONE #352-638-3646. No service on text) Home phone 352-674-3882 Or Just fix it and let me know, PS 1 am on FACEBOOK if security really wants photo ID

CULTURAL / GENERATIONAL

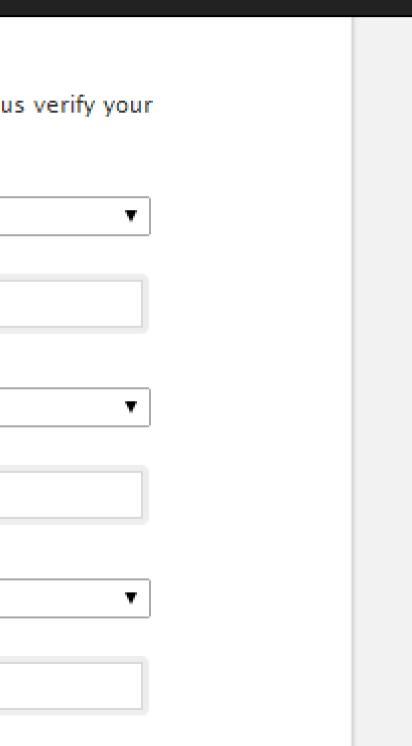
Single "points of access" for displaying content or achieving user goals

CULTURAL / GENERATIONAL

Security Questions.

Select three security questions below. These questions will help us verify your identity should you forget your password.

Security Question	What was the name of your first pet?
Answer	
Security Question	What is your dream job?
Answer	
Security Question	In what city did your parents meet?
Answer	



Language & Identification "The" computer or "my" computer?





POSSESSIVE DETERMINERS

Allegra: 21 (70%) Participants: 17 (25%)

INDEFINITE ARTICLES

Allegra: 9 (30%) Participants: 52 (75%)

MEANING?

Obtrusiveness is a key factor shaping technology perceptions and adoption for older adults!

Working with Older Adults (Methodological Considerations)

GIVE DOUBLE TIME

Budget extra time into your interview, observation, interaction sessions

STORIES ARE GENERATIVE

Listen to tangents; map the experiences, motivations, and cultural logics that underlie them



DO CONTEXTUAL INQUIRY

Meet participants where they're at (literally and figuratively)

PROVIDING TECH SUPPORT & LO-FI DOCUMENTATION



RECIPROCITY & GIVING BACK



MESSAGES Dopen Facebook Type friend's name into search [top left corner of page] [F Dienrech torick "Enterry la their and Olick friend's Photo to go to their page D Click the Message button [right comer of the big photo] (D Message) 3 Type your MLSage in the chat window at the bottom of the screen 6) Press "Enter" on your keyboard when finished typing your message to sound

0 070 S

DISSERTATION / OLDER ADULTS

SEARCH INFO LITERACY

Article in <u>Technical</u> <u>Communication</u> (for scholars and practitioners)



TPC program/curriculum development

LEARNER EXPERIENCE DESIGN

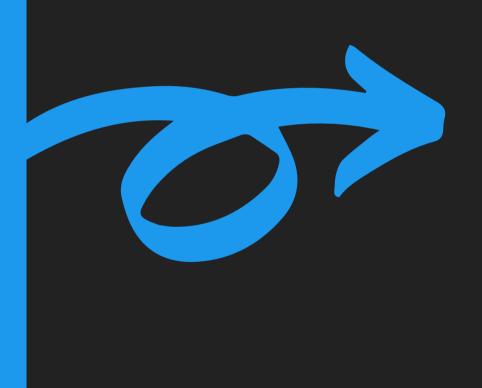
RHETORIC Ο F Η Ε Α L T Η & MEDICINE

Patient experience design (PxD) interventions made by older adults



JBTC article on business writing class grounded in social justice

Б



MC& BCBSFL Edited 3-15-18

y Lake, FL 32159 RENT MEDICATIO

Medical Record for

Lady Lake, FL 32159 Prescriptions: M.O.-90 day Express Surpts / Magretar Reserved States and States

Clouds Mono Pure 1300 2 per day. CoQ10 200 mg.1 per day, Vit B complex 1 per day, Acidophilus 2 tablet daily. HIGH DOSE FLU SHOT - September 26, 2017 Pneumonia shot - 2-4-10, Prenevar 13, 2015, ALLERGIES & Drug reactions: Food: Cantaloupe, strawberries & Mango - throat swells shut // dust, mold, pollen Medicines: Azithomycin-throat and mouth swelled & red ,cephalexin - throat & tongue swelled, Metoprolol ER Succinate 50mg, diarrhea and disorientation. Augmentin- Cl destress, tongue and throat swelled and red. Erythromycin-violently ill to stomach, Zoloft, Vioxx, Celebrex, Fosamax, Welchol, Pravachol, Cefadroxil , Boniva - Stomach queasiness and pain, Morphine - vomiting and TAPE - tears skin off, Mobic put me to sleep.(Note taken off of Zocor for muscle weakness and bad liver function)Lumigan eye swelling, Timolol(heart palpitations)Darvoset upset stomach and throat swelling.Gabapentin extreme drowsiness & problems with coordination. Flunisolide Nasal Solution Azopt-Irritated eve Ids, Zetia-upset GI Tract, Advance Liquid tears (eyelid redness).Polysporin-

Azopt-Irritated eye lids, Zetia-upset GI Tract, Advance Liquid tears (eyelid redness).Polysporinredness/rash

CURRENT PROBLEMS Cellulitis rt. Leg 6/17,... Falls on 5-26-17, Pain in left axilla, leaking heart valve, Stomach irritation due to ???, Upper GI endoscopy Dec.2016

Low back pain/ right leg Tremors in right arm & head when tired or stressed. Arthritis: S.I. joints, feet, knees, hands, shoulders, back Pain in face & teeth on right. (Shingles in the past left jaw and sinus congestion)

Both eyes: macular degeneration, glaucoma Osteoporosis ,hemorrhoids, anal fissue Broken right wrist 12-29-17,

CHILD BIRTH: daughter 1956 (natural), daughter 1958 (C Section), Son 1959 (C Section) SURGERY:

Appendectomy 1954 Hysterectomy 1965

Left lumpectomy (Breast CA) 1990 (Radiation and Chemo: Cytoxan/Adriamycin) Right lumpectomy 1992 Bilateral reconstruction 1995 (Radiation and Chemo: Cytoxan/Ad Bilateral reconstruction 1995

Incisional hernia 1997, 1998, 1999 (1999 infection in site - 4 weeks)

Excision Paget's disease of peri-anal area July 21, 2000 & Feb.12, 2003 Incisional hernia (different location) May 9, 2001

Bilateral submucous resection of the inferior turbinates 11-26-2002 Left thumb carpometacarpal joint resection

Back pain due to fractures of T12 and L1*epidurals X3 April 09 2009 Fracture of L5 March 2010.& 1-18-03) ...Carpal tunnel surgery right wrist 6-30-17

Left wrist carpal tunnel surgery (1-04-05

Kyphoplastie (06-16-09) L-1, Kyphoplastie (05-28-10) L5 /9-8-10 laminectomy L5-SI Kyphoplastie (06-16-09) L-1, Kyphoplastie (05-28-10) L5 /9-8-10 laminectomy L5-SI Rt. Eye, Cataract & Trabeculectomy several years ago--Lt eye cataract surgery 1-26-17 Excision of 5 lesions 2-2012=2 benign, 2 pre cancerous, 1 pre melanoma 3-21 excision of pre

Placement of 3 heart artery stents 12-18-15 1-11-18 plate & pins rt. Wrist following fracture OTHER PREVIOUS PROBLEM AREAS 205-7010 Colony



USEFUL

USABLE

DESIRABLE

VALUABLE

FINDABLE

ACCESSIBLE

CREDIBLE

PROGRAMMATIC AND CURRICULAR DESIGN

Applying methods and frameworks like the UX honeycomb (Morville) to the design of academic programs, services, experiences, and supports by prioritizing user narratives and journeys

The Next Five Years

2021-22

Older adult + technology journal articles

Initial IRB and pilot work on TPC student study

2022 - 23

Dissertation monograph (ATTW series?): older adult user personas

CPTSC/ATTW grant for student study

2023 - 24

Preliminary result article(s) from TPC student study

Fan studies retrospective article (20 years)

2024 - 25

Feminist research methodology special issue or webtext article

Long-term result article(s) from TPC student study

QUESTIONS?

Allegra W. Smith allegra.w.smith@gmail.com

