CURRICULUM VITAE

ANTHONY FAIOLA

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ACADEMIC & ADMINISTRATIVE APPOINTMENTS

UNIVERSITY OF CINCINNATI (UC), College of Nursing

- Full Professor, Department of Population Health — 2024—
- Key Research Affiliations / Memberships: — 2024—
  - UC Cancer Center—*Focus: Neuro-oncology and Breast Cancer Survivorship*
  - UC Brain Tumor Center**,** Gardner Neuroscience Institute—*Focus: Dementia*
  - UC Cancer Center Institutional Research Grant Committee

UNIVERSITY OF KENTUCKY (UK), College of Health Sciences

- Full Professor, Department of Health and Clinical Sciences — 2020-24
- Associate Dean, Research and Scholarship, College of Health Sciences — 2020-21
- Key Research Affiliations / Memberships: — 2020-24
  - UK Markey Cancer Center Member—*Prevention and Control Research Program*
  - Joint Appointment, College of Engineering—*Department of Biomedical Engineering*
  - Leadership Board, College of Medicine—*Alliance Initiative for mHealth Technology*
  - Faculty Associate, College of Design—*Department of Industrial/Product Design*
  - Steering Committee, Biomedical Informatics Institute

UNIVERSITY OF ILLINOIS—CHICAGO, College of Applied Health Sciences

- Full Professor, Department of Biomedical and Health Information Sciences — 2016-20
- Chair and Head, Department of Biomedical and Health Information Sciences — 2016-20
- Joint Appointment, Department of Computer Science, College of Engineering — 2016-20
- Interim Director, PhD Program, Biomedical and Health Informatics — 2019-20

INDIANA UNIVERSITY—INDIANAPOLIS, Luddy School of Informatics, Computing, & Engineering[1]

- Associate Professor, Department of Human-Centered Computing — 2001-16
- Founding Director, Human–Computer Interaction Program, Dept. of Human-Centered Computing — 2002-14
- Director, Media Arts and Science Program — 2007-09
- Executive Associate Dean—*Chief Administrating Officer, Indiana University—Indianapolis* — 2008-13
- Director, Informatics Program — 2011-13

PURDUE UNIVERSITY, Polytechnic Institute

- Assistant Professor, Department of Computer Graphics Technology — 1998-01

EDUCATION

Ph.D.	Purdue University, School of Communication, Communication Studies, W. Lafayette, IN.[2]	2005
M.A.	The Ohio State University, College of Arts & Sciences, Industrial Design, Columbus, OH.[3]	1984
M.F.A.	The Ohio State University, College of Arts & Sciences, Fine Arts, Columbus, OH.	1979
M.A.	University at Albany (SUNY), N.Y., College of Arts & Sciences, Fine Arts, Albany, NY.	1977
B.F.A.	SUNY New Paltz, NY, School of Fine and Performing Arts, Fine Arts, New Paltz, NY.	1975

Certificates[4] and Study Abroad

- Harvard University, Div. of Continuing Education, Design Thinking Workshop, Cambridge, MA. — 2017
- Institute of Design, Illinois Institute of Technology, Design Thinking Workshop, Chicago, IL. — 2017
- Assoc. for Advancement of Medical Instrumentation, Human Factors of Med. Devices (FDA), Minn., MN.[5] — 2010
- Academy of Fine Arts (Accademia di Belle Arti di Urbino), Urbino, Italy.[6] — 1976

ACADEMIC HIGHLIGHTS

RESEARCH			TEACHING	
PUBLICATIONS & PRESENTATIONS			**45**	PhD, MS, & UG Courses Taught
97	Journals, Proceedings, Abstracts, Posters—*Referred*		**24**	PhD & MS Dissertation/Thesis Advised
126	Keynotes, Presentations—*Referred/Invited*		**62**	MS Capstone & Final Project Advised
19	Book Chapters, Books, & Educational Workbooks		**44**	Faiola Research Team Members (2013-26)
GRANTS & CONTRACTS			**SERVICE**	
$4,950,000	Active External/Internal Funding		**53**	Professional Conference Admin/Services
$9,933,124	**Total Current/Past Awarded External Grants**		**10**	University-Wide Committees
$3,354,000	Pending/Forthcoming (NIH, ACS)		**5**	University Administrative Leadership Roles
$192,620	Past Internal Funding		**19**	Departmental Committees: Chair/Member
Google Scholar: 2566 Citations / 24 h-index / 42 i10 index			**PRODUCT INNOVATION LINKS**	
Pubs Data Links: myNCBI / PubMed / DBLP-CS-Bib			**Press Release:** FamCare+, **Patents:** See Patent List	

JOURNAL & CONFERENCE SPECIAL ISSUE EDITOR & REVIEWER

2025—26 MDPI Healthcare, Journal Special Issue Editor: Virtual/Augmented Reality in Therapeutic Medicine.
2010 4th International Conference on Pervasive Computing Technology for Healthcare, Munich, Germany.
2011 1st International Conference on Serious Games and Applications for Health, Braga, Portugal.
2011 Human-Computer Interaction—Inter. Conf. on Biomedical and Health Visualization Design, Orlando, FL.

JOURNAL REVIEWER

2025—Present Journal of Medical Extended Reality
2023—Present BMC Public Health (BioMed Central)
2017—Present American Medical Informatics Association
2016—Present Journal of Applied Clinical Informatics
2016—Present Journal of Biomedical Informatics
2015 Behavior Research Methods
2015 American Medical Informatics Association Symposium 2015
2011 MIT Press
2009 Human-Computer Interaction Journal
2006 Interacting with Computers
2003 Behavior and Information Technology

ACADEMIC WORKING GROUPS AND REVIEW BOARDS

2019 Agency for Healthcare Research & Quality, U.S. Dept. of Health & Human Services
2015-16 American Medical Informatics Association, Intensive Care Informatics
2014-16 Fulbright Scholarship Review Board
2009-16 Transportation Active Safety Institute, Exec. Board, Purdue University, School of Engineering

PROFESSIONAL ORGANIZATIONS

2025—	American Medical Extended Reality Association	AMXRA
2025—	Alzheimer's Assoc. Society to Advance Research/Treatment, Tech & Dementia Group	ISTAART
2017—	Center for Health Design	CHD
2017—20	American Society for Healthcare Engineering	ASHE
2017—20	Society for Participatory Medicine	SPM
2016—20	American Congress of Rehabilitation Medicine	ACRM
2014—	American Medical Informatics Association	AMIA
2002—24	Industrial Designers Society of America (Professional Member)	IDSA
2001—17	Association of Computing Machinery—Special Interest Group	ACM
1999—10	Fulbright Association Fellow	

DIVERSITY FACULTY MENTORING

2023-24 **Research Sr. Scholars Mentor, College of Medicine,** Research Scholars Program, Jr. Faculty Diversity Mentoring, Markey Cancer Center. UNITE Research Priority Area.

RESEARCH

BRIEF RESEARCH STATEMENT

My research lies at the intersection of biomedical informatics and human-centered computing, where I leverage the medical sciences, social/cognitive sciences, human factors, and usability science to develop, test, and clinically study the effects of digital health solutions with targeted patient populations and clinicians. My formative education, coupled with acquired cross-disciplinary knowledge and research methods, has enabled me to map a progressive line of inquiry with increasing focus and innovation. Since 2006, the aim of my translational research has been to generate new knowledge and innovative digital health interventions that have a direct impact on the therapeutic treatment of patients with a range of non-communicable diseases. **My current research falls within the broader domains of (1) Digital Health Solutions and (2) Health Behavior.**

Digital health, as my primary research focus, includes three emerging health information technologies (HIT) with their respective patient populations and interdisciplinary methods. This research includes collaboration with physicians, nurses, biomedical and mechanical engineers, biochemists, biomedical informaticians, and medical researchers who share my passion and focus on several diseases and health conditions. The three HITs include: Virtual/Mixed Reality Therapeutic Medicine (VRx), Diagnostic Biosensors, and Mobile Health (mHealth). **See page 41 for a comprehensive Research Statement, including current and forthcoming projects and funding.**

GRANTS & CONTRACTS

ACTIVE GRANTS: EXTERNAL & INTERNAL

GRANTING AGENCY & PROJECT TITLE	ROLE/EFFORT	AMOUNT	DATE	COLLABORATORS
AGENCY: NIH R01 **AREA**: National Heart, Lung, & Blood Institute **TITLE**: Hand-held Smart Sensor for Detecting Cystic Fibrosis Pulmonary Exacerbations **AWARD ID#/TYPE:** 1R01HL177812-01	**Co-I** **Site PI**[7] **Yr. 1-7.79%** **ACTIVE**	$599,243 (3 Yrs.)	9/2024 – 8/2027	**PIs:** M. Agarwal, (Contact PI), Indiana U.; PIs: DB. Sanders, S. Cao, M. Woollam, Indiana U.
AGENCY: American Cancer Society **AREA**: Diagnostic Biosensors **TITLE**: Canine-inspired Identification and Analysis of Volatile Organic Biomarkers of Prostate Cancer using Portable GC-MS & Develop, of a Hand-held Nanosensor System. **AWARD ID#/TYPE:** Team-23-1076327-01-PASD	**Team Principle:** **Site PI** **15%**[8] **ACTIVE**	$1.2M (5 Yrs.)	1/2024 - 12/2028	**PIs:** Drs. Mangilal Agarwal, PhD, Purdue U. & Mark Woollam, Indiana U.
AGENCY: Merck Foundation **AREA**: Alliance for Equity **TITLE**: Comprehensive Connected Cancer Care (C4) Center **AWARD ID#/TYPE:** 1000400609	**Co-I** **7%** **ACTIVE**	$2M (5 Yrs.)	7/2022 – 6/2027	**PIs:** Hull, T. Mullett, M. Chih, B. Shelton, UK
AGENCY: University of Cincinnati Cancer Center **AREA**: Cancer Survivorship - LINK **TITLE**: Measuring the feasibility, acceptability and effect of a VR cognitive training intervention for brain cancer survivors with cancer-related cognitive impairment	**PI** **10%** **ACTIVE**	$50K (2 Yr.)	2025- 2027	**Co-Is:** Drs, Yogendran, Shatz, Morrison, & Lambert (Colleges of Medicine and Nursing)
AGENCY: Indiana University Health Values Grant, **AREA**: IU Health - Alzheimer's/Dementia **TITLE**: Virtual Reality Cognitive Intervention for Critically Ill Delirium Survivors (VR-Cog)	**Consultant** **ACTIVE**	$200K	7/2025- 6/2026	**PIs: S. Khan, MD,** Indiana U. School of Medicine and the Regenstreif Institute.
		***Total Active Funding*: $4,650,000**		

GRANTS PENDING & IN PROGRESS				
GRANTING AGENCY, FOA, & TITLE	**ROLE/EFFORT**	**AMOUNT**	**DATE**	**COLLABORATORS**
AGENCY: **American Cancer Society** **TITLE**: Measuring the feasibility, acceptability, and fidelity of intervention delivery for a virtual-reality game cognitive training platform for breast cancer patient survivors at risk for mild cognitive impairment **AWARD ID#/TYPE: Discovery Boost Grant**	**PI** **20%** **PENDING**	$297K	7/2025-6/2027	**Co-Is:** R. Shatz, M. Charif, E. Shaughnessy, S. Rai, C. Morrison, Colleges of Medicine and Nursing, University of Cincinnati
AGENCY: **Sapienza University, Office of Research, Rome, Italy** **TITLE:** Measuring cognitive performance among post-stroke patients: A pilot study. Lectures: Digital health solution methods and innovation **AWARD ID#/TYPE: Sr. Research Fellow**	**Co-PI** **100%** **PENDING**	$7K	3/2026-4/2026	**PI: Marco Iosa**, Dept. of Neuropsychology, Sapienza University of Rome.
AGENCY: **NIH/NIA** **TITLE:** A feasible and acceptable study using NeuroVirt to improve postural balance and depression/anxiety symptoms, with significant reductions in risk of falling. **AWARD ID#/TYPE: R21, Exploratory Alzheimer's/Dementias, PAR-22-094**	**Consultant** **PENDING**	$275K	4/2026-3/2028	**PI:** Junhyoung Kim, Dept. of Health Behavior, School of Public Health, Texas A&M U., College
AGENCY: **NIH/NIA** **TITLE**: Measuring the feasibility and effect of a virtual reality cognitive training intervention for Alzheimer's and dementias patients. **AWARD ID#/TYPE: R21, PAR-22-094**	**PI** **10%** **IN PROGRESS**	$275K (2 Yrs.)	TBD	**Co-Is:** Drs. Shatz and Yogendran, College of Medicine, U of Cincinnati
AGENCY: **NIH/NIMH** **TITLE:** Measuring the feasibility, acceptability, and fidelity of intervention delivery for virtual-reality cognitive gaming exercise among critically ill older adults at risk for ICU-acquired mild cognitive impairment (Alzheimer's and dementias; including its effect on pain, anxiety, delirium). **AWARD ID#/TYPE: R01, PAR-21-210**	**Co-PI** **10%**[9] **IN PROGRESS**	$2.5M (5 Yrs.)	TBD	**PIs: B. Khan, & S. Khan**, Indiana University School of Medicine / Regenstrief Institute.
		Potential Forthcoming Funding: **$3,354,000**		

RECENTLY COMPLETED PILOT STUDY GRANTS: (FOR PRELIMINARY DATA)

GRANTING AGENCY & PROJECT TITLE	ROLE / EFFORT	AMOUNT	DATE	COLLABORATORS
AGENCY: Markey Cancer Center, University of Kentucky **AREA**: Mobile Health in Cancer Care, **LINK** **TITLE:** Addressing the mental health disparities of families of cancer patients from rural Kentucky: Investigating the efficacy to reduce mental trauma using FamCare. **AWARD ID#/TYPE:** Community-Engagement and Partnership Grant	**PI—20%** **Ended: 8/14/24** ***Internal Funding*** **(*Clinical Pilot Study for Preliminary Data*)**	$10K (1 Yr.) *With 1 Yr. Extension*	2022-2024	**Co-Is:** Drs. Hao and Munker, Professors of Medicine, College of Medicine, Div. Oncology
AGENCY: Center for Computational and Translational Sciences, University of Kentucky **AREA**: Digital Solutions **TITLE:** A health game intervention for cancer patients suffering from acute cognitive impairment: A clinical study to assess a form of brain stimulation therapy with the potential to improve synaptic plasticity**.** **AWARD ID#/TYPE:** Pilot Grant	**PI—20%** **Ended: 8/14/24** ***Internal Funding*** **(*Clinical Pilot Study for Preliminary Data*)**	$8K (1 Yr.) *With 1 Yr. Extension*	2022-2024	**Co-Is:** P. Meulenbroek, Com Sciences and Disorders; J. Villano, College of Medicine, Div. Oncology
		Total Active Funding: **$18,000**		

PRIOR EXTERNAL GRANTS & CONTRACTS

GRANTING AGENCY & PROJECT TITLE	ROLE / EFFORT	AMOUNT	DATE	COLLABORATORS
AGENCY: USDA **AREA**: National Institute of Food & Agriculture **TITLE:** Children Eating Well (CHEW) Smartphone Application for WIC Families. **AWARD ID#/TYPE:** 1000100537. **Grant Site**	**Co-PI—10%**[1]	$2,524,922 (5 Yrs.)	2017-2024	**PI:** P. Hull, UK Medicine (Project Dir.); **Co-PI:** S. Mulvaney, Vanderbilt U.
Agency: NIDILRR-ARCP **AREA**: Advanced Rehab. Research Training Program) Dept. of Health & Human Services, Admin for Community Living. **TITLE:** Advanced Training in Translational and Community-Engaged Scholarship to Improve Community Living & Participation for People with Disabilities **AWARD ID#/TYPE:** 311122. **Grant Site**	**CoPI—5%** Multiple PIs (*Funding contract ended once CoPI left UIC*)	$999,995 (5 Yrs.)	2020-2025	**CoPIs: Tamar Heller,** Dept. of Intellectual Disability & Human Develop.; **Yolanda Balcazar,** Dept. of Occupational Therapy, **Angela Young,** Dept of Kinesiol & Nutrition
AGENCY: **Agency for Healthcare Research & Quality** **Site Link** **AREA**: Health Systems **TITLE:** An Etiology for Medication Ordering Errors in CPOE Systems **AWARD ID#/TYPE:** **R21 HS25443-02**	**Site PI—10%**	$297,108 (2 Yrs.)	2018-2020	**PI: Joanna Abraham, PhD,** Washington University (School of Medicine)

AGENCY: **NSF** **AREA**: Smart & Connected Health **TITLE**: Canine-Inspired Smart Sensor for Detecting Hypoglycemia from Human Breath[10 11] **AWARD ID#/TYPE: 1502310**	**Site PI** **30%**	$738,311 (3 Yrs.+ 1 Yr. no-cost extension)	2015-2019	**PIs: Mangilal Agarwal**, PhD (Contact PI), **Peter Roach, MD**; **Sudhir Shrestha, PhD,** Purdue U.
AGENCY: King Saud Bin Abdulaziz University for Health Sciences, Dean's Office **AREA**: Health Informatics **TITLE**: Health Information Management Curriculum Licensing **AWARD ID#/TYPE: Program**	**Contract** 100%	$450,000	2017-2018	**Contractors: Drs. Salamah & Alshammari,** College of Public Health & Health Informatics, Riyadh, Saudi Arabia
AGENCY: MacArthur Foundation Grant **AREA**: Humanities, Arts, Science, and Technology Alliance / Collaboratory Grant **TITLE**: Creatures Classified: An exploration of cataloging creatures across the galaxy **AWARD ID#/TYPE:** 08-91858-000-HCD	**Grant Director** (PI Admin. Oversight) **2%**	$40,000 1 Yr.	201020 12	**PIs: Mathew Powers, MFA, Clint Koch, MA, Jennifer Stewart, MS,** IU School of Informatics and Computing
AGENCY: U.S. Dept. of Veterans Affairs **AREA**: Health Services Research and Development **TITLE**: Pre-Implementation of a Decision Support Tool for Improving Patient Handoff **AWARD ID#/TYPE: RRP 06-156**	**Contract** **5%**	$6,800 1 Yr.	2006	**PI: Bradley Doebbeling, MD MSc & Mindy Flanagan PhD,** Richard L. Roudebush VA Medical Center, Indianapolis, IN
AGENCY: Clarian Health **AREA**: Diabetes Patient Education **TITLE**: Computerized Education to Prevent Hypoglycemia When Driving **AWARD ID#/TYPE: VFE-183**	**PI** **15%**	$79,841 2 Yrs.	2007-09	**Co-PIs: Donald Orr , MD,** IU School of Medicine**; Joseph DeFazio, PhD,** IU School of Informatics & Computing
AGENCY: Walther Cancer Institute **AREA**: Health Systems **TITLE**: A Web-Based System to Support Family Caregiving for Cancer Patients **AWARD ID#/TYPE: 601-3200-00-0002**	**Co-PI** **8.3%**	$396,147 2 Yrs.	2009-2011	**PI: Anna McDaniel,** IU School of Nursing)
		Total Funding: **$5,533,124**		

PRIOR INTERNAL GRANTS
FOR RESEARCH, TRAVEL, AND TEACHING EXCELLENCE

GRANTING AGENCY & TITLE	ROLE / EFFORT	AMOUNT	DATE	COLLABORATORS
Digital Health Informatics				
AGENCY: Indiana University Solution Center Grant **TITLE:** Medical Information Visualization Assistant – System Design (Phase 1-4 Funding)	**PI** 100%	$73,600	2008-2014	**Co-PI: Simon Hillier, MD**, IU School of Medicine
AGENCY: Indiana University Research Support Grant – Seed Funding **TITLE:** Using Interactive Games to Improve Treatment Adherence in Children with Type 1 Diabetes	**Co-PI** 10%	$29,000	2009	**PI: Hadi Kharrazi,** IU Schools of Informatics and Computing
AGENCY: Indiana University Research Support Grant – Seed Funding	**Co-PI**	$15,000	2009	**PI: Hadi Kharrazi,** IU Schools of Informatics and

TITLE: Using Interactive Frameworks to Enhance Treatment Adherence in Type 1 Diabetes	10%			Computing
AGENCY: IU Research Support Funds Grant Application **TITLE:** Support for Purchase of BioPac Psycho-physiological Measuring Equipment	**PI** 25%	$13,000	2010	**Co-PI: Mark Pfaff**, PhD, IU Schools of Informatics and Computing
AGENCY: Purdue Research Summer Grant **TITLE:** Qualifying Digital Color Targets for Skills and Knowledge Standard	**PI** 100%	$5000	2000	Graphic Arts Tech. Found. Pitts., PA
Human-Centered Computing Education				
AGENCY: IU Learning Environments Grant **TITLE:** Tablet PC Presentation for Diabetic Patients: Diabetes Prevention and Control	**Consultant** 100%	$25,000	2010	**PI: David G. Marrero, MD and Paris Roach, MD**, IU School of Medicine,
AGENCY: IU Learning Environments Grant **TITLE:** Media Arts Research Learning Arcade (MARLA): A Research/Learning Game Community Lab - **LINK**	**Co-PI** 15%	$25,000	2009-10	**PI: Mathew Powers, MFA,** Media Arts & Science Faculty
Research Travel Funding				
AGENCY: **IU Research Grant, Part 1 and 2** **Title:** Russian and American Cross-Cultural Study of Hypermedia Design & Accessibility	**PI** 100%	$3,070	2002-03	SoIC & Institute of Tech., Optical Design & Engineer., St. Petersburg, Russia.
AGENCY: IU Office of International Prog. Overseas Conf. Fund **TITLE:** 12th International Conf on Information Visualization: HCI Symposium	**PI** 100%	$600	2008	IU Schools of Informatics and Computing
AGENCY: IU International Travel Grant **TITLE:** CATac'06 Cultural Attitudes Towards Technology and Communication	**PI** 100%	$600	2006	Estonia England
AGENCY: **IU International Travel Grant** **TITLE:** Study of Cross-cultural Behavior of International Online Gamers	**PI** 100%	$2000	2006	Moscow State University, Russia
AGENCY: **IU International Travel Grant** **TITLE:** The Copernican shift: HCI education and the design enterprise	**PI** 100%	$750	2003	Crete, Greece
		Total Funding: **$192,620**		

FULBRIGHT SCHOLARSHIPS

GRANTING AGENCY & TITLE	ROLE / EFFORT	AMOUNT	DATE	COLLABORATORS
AGENCY: **Fulbright U.S. Scholar Program**. Bureau of Educational and Cultural Affairs (U.S. Dept. of State). **Senior Specialist Lectures**. **TITLE:** Communication & Online Publishing Tech.	**PI** 100%	$6,000	2003	Moscow State University of the Printing Arts, Russia
AGENCY: **Fulbright U.S. Scholar Program**. Bureau of Educational and Cultural Affairs (U.S. Dept. of State). **Senior Specialist Lecture**. **TITLE:** Communication & eBook Technologies	**PI** 100%	$6,000	2002	Moscow State University of the Printing Arts, Russia
AGENCY: **Fulbright U.S. Scholar Program**. Bureau of Educational and Cultural Affairs (U.S. Dept. of State). **Traditional/Core Award.** **TITLE:** Interactive Media, Usability, and Design Com.	**PI** 100%	$30,000	1999-2000	St. Petersburg State U of Information Technology, Mechanics, and Optics, SP, Russia
		Total Funding: **$42,000**		

PUBLICATIONS

Refereed Journals (Under Development)

1. **Faiola, A**., Villano, J. and Soroya, S. (Under Dev.). Investigating the Efficacy of Virtual Reality on Brain Cancer Patients with Mild Cognitive Impairment: A Report on a Single-Arm Pilot Study, *Journal of Medical Internet Research*.
2. **Faiola, A**., Naeem, S. B., and Nimoh, G. (Under Dev.). Enhancing Cognitive Function in Patients with Mild Cognitive Impairment through Mixed Reality Interventions: A Systematic Review and Meta-Analysis, *Virtual Reality*.

Refereed Journals (Under Review)

1. **Faiola, A.,** Soroya, S., Hao, Z, and Munker, R., and Lambert, J. (Under Review). Investigating the Efficacy of a Mobile Application to Reduce Anxiety and Depression of Critical Care Cancer Patient Family Members: A Pilot Study, *MDPI Healthcare*.
2. De Giorgi, R., Cuscito, R., Piccionetti, A., Gentili, F., Casolani, S., Rubeca, C., Salera, C., Iosa, M., **Faiola**, **A.**, DeBartolo D., Barbato, S., Morone, G., and Tieri, G. (Under Review). Psychometric and physiological assessment of the effects of virtual reality in cardiovascular rehabilitation: a randomized controlled trial, *MDPI Brain Sciences*.

Refereed Papers (Journals, Proceedings**,** Extended Abstracts, (*Accepted/In Press/Published*)

1. **Faiola, A.,** Soroya, S., Hao, Z, and Munker, R. (Accepted) Examining the Mental Health of ICU Patient Families and Their Need for Mobile Health as Interventional Support: A Correlational Pilot Study, *JMIR, Formative Research (Digital Health Interventions).*
2. Naeem, S. B., Boulos, M. K., & Azam, M., **Faiola, A.** (In Press). Determinants of mHealth adoption among people aging with chronic diseases in rural areas: the unified theory of acceptance and use of technology model, *Future Internet*.
3. Thompson JR, Weber SJ, Mulvaney SA, Goggans S, Brown M, **Faiola A**, Maamari L, Hull PC. (2025) Parental Perceptions of Priorities and Features for a Mobile App to Promote Healthy Lifestyle Behaviors in Preschool Children: Mixed Methods Evaluation. *JMIR Pediatr Parent*. 2025 Feb 19;8:e65451. doi: 10.2196/65451. PMID: 39970437; PMCID: PMC11888088.
4. Soroya SH, Sharif A, **Faiola A**. (2024) Role of Pakistani e-libraries in promoting health awareness for the attainment of Sustainable Development Goal-3. *Health Information and Libraries Journal*. DOI:https://doi.org/10.1111/hir.12554
5. Naeem, S. B., **Faiola, A.**, Rehman, A. U., Boulos, M. K. (2024). Electronic Health (eHealth) Literacy and Self-Care Behaviors—Results from a Survey of University Students in a Developing Country, *Information, 15*(10), 636; https://doi.org/10.3390/info15100636.
6. Azam, M.; Bin Naeem, S.; Kamel Boulos, M.N.; **Faiola, A.** (2023) Modelling the Predictors of Mobile Health (mHealth) Adoption among Healthcare Professionals in Low-Resource Environments. *Int. J. Environ. Res. Public Health, 20*, https://doi.org/10.3390/ijerph20237112
7. Weber, S., Mulvaney, S., **Faiola, A.,** Brown, M., Koyama, T., Sun, L., Goggans, S., Hull, P. (2023). Commercially Available Mobile Apps With Family Behavioral Goal Setting and Tracking for Parents: Review and Quality Evaluation, *JMIR Pediatr Parent; 6*:e41779, URL: https://pediatrics.jmir.org/2023/1/e41779, DOI: 10.2196/41779
8. Soroya, S., Sharif, A., & **Faiola, A**. (2023). Investigating the Contribution of Pakistani e-Libraries in Promoting Health Awareness for the Attainment of Sustainable Development

Goal-3. *Association for Information Science & Technology, 27-31 October 2023 at Novotel London West, London, UK.*

9. Liu, H., Azam, M., Bin Naeem, S., & **Faiola, A**. (2023). An overview of the capabilities of ChatGPT for medical writing and its implications for academic integrity. *Health Information & Libraries Journal*, 1–7. https://doi.org/10.1111/hir.12509
10. Rehman, A., Bin Naeem, S., & **Faiola, A.** (2023). The prevalence of low health literacy in undergraduate students in Pakistan. *Health Information & Libraries Journal*, *40*(1), 103–108. https://doi.org/10.1111/hir.12475
11. Zolnour A, Eldredge CE, **Faiola A,** Yaghoobzadeh Y, Khani M, Foy D, Topaz M, Kharrazi H, Fung KW, Fontelo P, Davoudi A, Tabaie A, Breitinger SA, Oesterle TS, Rouhizadeh M, Zonnor Z, Moen H, Patrick TB and Zolnoori M (2023). A Risk Identification Model for Detection of Patients at Risk of Antidepressant Discontinuation, *Frontiers in Artificial Intelligence (Medicine and Public Health), 6.* https://doi.org/10.3389/frai.2023.1229609
12. Soroya, S.H., Rehman, A.U. and Faiola, A. (2024), Exploring the impact of Internet and media sources exposure on self-care behavior: mediating the role of health anxiety, literacy and information-seeking behavior, *Kybernetes*, 53(11), pp. 4797-4817. https://doi.org/10.1108/K-06-2023-1003
13. Soroya, S. H. and **Faiola, A**. (2023). Why did people avoid information during the COVID-19 Pandemic? Understanding information sources' dynamics among Pakistani Z generation. *Library Hi Tech*, 40(6):150. DOI 10.1108/LHT-02-2022-0113
14. **Faiola A,** Kamel Boulos MN, Bin Naeem S, ur-Rehman A. Integrating Social and Family Support as a Measure of Health Outcomes: Validity Implications from the Integrated Model of Health Literacy. *International Journal of Environmental Research and Public Health*. 2023; 20(1):729. https://doi.org/10.3390/ijerph20010729
15. Soroya, S. H., Nazir, M., & **Faiola, A.** (2022). Impact of health-related internet use on disease management behavior of chronic patients: Mediating role of perceived credibility of online information. *Information Development*, *40*(3), pp. 357-375. https://doi.org/10.1177/02666669221144622
16. Zolnoori, A., Eldredge, C., Topaz, M., **Faiola, A**., Fontelo, P. & Zolnoori, M. (2020)**,** Developing a risk identification algorithm for identifying patients at risk of medication non-adherence in patients with depression, *Proceedings of American Medical Informatics Association Summit***,** *Chicago, IL, March 21, 2022.*
17. Belkacem I., Pecci I., **Faiola A.,** Martin B. (2020) Investigating a Design Space for Developing Design Thinking in Electronic Healthcare Records. In: Stephanidis C., Marcus A., Rosenzweig E., Rau PL.P., Moallem A., Rauterberg M. (eds) *HCI International 2020 - Late Breaking Papers: User Experience Design and Case Studies. HCII 2020. Lecture Notes in Computer Science, vol 12423*. Springer, Cham. https://doi.org/10.1007/978-3-030-60114-0_2
18. **Faiola, A.**, & Papautsky, E.L. (2019). mHealth that supports the role of the MICU nurse in family mental healthcare, Session 4: Informatics Support for Practice-based Knowledge Generation and Nursing and Healthcare Practice Sponsored by Shadow Health, Extended Abstract, *Health Informatics Kobb Symposium, College of Nursing, University of Florida, Gainesville, FL.*
19. Zolnoori, M., Ngufor, C., **Faiola, A.,** Eldredge, C. E., Luo, J. Patrick, T., Sohn, S. Balls-Berry, J. Tafti, A. & Shah, N. (2019). Identifying factors affecting drug discontinuation in patients with depression: Text analysis of patient drug review posts (2019). Extended Abstract. *American Medical Informatics Association, Annual Symposium, Washington, DC***.**

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Refereed Posters and Workshops

1. **Faiola, A.,** Hao, Z., Munker, R., Soroya, S., Schrader, S. & Burch, M. (2023). Addressing the Mental Health Disparities of Families of Cancer Patients from Rural Kentucky: Investigating the efficacy of FamCare+ to reduce mental trauma using a mobile health service that connects families at home with the bedside, *College of Medicine, Alliance Research Initiative Seminar, University of Kentucky, October 4, 2023.*
2. **Faiola, A.,** Villano, J., Mayer, K., Meulenbroek, P., Mayer, K., Soroya, S., Schrader, S. & Burch, M. (2023). Health Gaming Intervention as Neurostimulation Therapy for Brain Cancer Patients Suffering from Acute Cognitive Impairment: A Clinical Study to Improve Cognitive Function and Synaptic Plasticity, *College of Medicine, Alliance Research Initiative Seminar, October 4, 2023.*

3. **Faiola, A.,** Hao, Z. Montgomery-Yates, A., Soroya, S., Lenox, S., Piekarski, S., Tenuta, G., & Schrader, S. (2023). Addressing the Mental Health Disparities of Families of Cancer Patients from Rural Kentucky: A clinical study on the efficacy to reduce mental trauma using the mobile app intervention FamCarePlus, *Markey Cancer Research Day, May 12, 2023.*

4. **Faiola, A.,** Villano, J., Montgomery-Yates, A., Mayer, K., Soroya, S., Meulenbroekk, P., Lenox, S., Piekarski, S., Tenuta, G., & Schrader, S. (2023). Health Gaming Intervention as Neurostimulation Therapy for Brain Cancer Patients Suffering from Acute Cognitive Impairment: A Clinical Study to Improve Cognitive Function & Synaptic Plasticity, *Markey Cancer Research Day, May 12, 2023.*

5. **Faiola, A.,** Hao, Z., Soroya, S., Naeem, S., Lenox, S., Piekarski, S., & Tenuta, G. (2022). Addressing the Mental Health Disparities of Families of Cancer Patients from Rural Kentucky: Investigating the Efficacy of FamCare+ to Reduce Mental Trauma among Families (A Mobile Health Service that Connects Families at Home with Point-of-Care at the Bedside). *12th Annual Appalachian Translational Research Network Summit "Community-Academic Engagement: Building Resilience Together*," November 14 and 15, 2022, University of Kentucky, Lexington, KY.

6. **Faiola, A.**, Abraham, J. & Papautsky, E.L. (2019). Delivering Patient Information and Access to Mental Health Counseling for ICU Families: Towards a Human-Centered Mobile Health System for Room-to-Family Communication. Poster, Extended Abstract and Presentation, *Proceedings from Human Factors and Ergonomics in Health Care, Chicago, IL, March 2019.*

7. **Faiola, A.,** Minh, H, & Bergey, D. (2019). Supporting the Mental Health of Families in the ICU: A Family-Centered Approach to Mobile Information Communication. Poster, University of Illinois at Chicago, Research Day, April 7, 2019.

8. **Faiola, A.**, Belkacem, I., Bloodworth, M., Bergey, D., Pecci, I., & Martin, B. (2019). Towards the Design of a Smart Glasses Application for MICU Decision-Support: Assessing the Human Factors Impact of Data Portability and Accessibility, Poster, *Human Factors and Ergonomics in Health Care, Chicago, IL, March 2019.*

9. Greenhill, K., **Faiola, A.** Lebowiz, L. & Bond, S. (2017). Creating Common Ground: A Medical Visualization Tool to Aid Physician / Family Communication in a Medical Intensive Care Unit Setting, Poster, *Applied Health Sciences Research Day*, November 1, 2017, University of Illinois at Chicago.

10. Boyd AD, Abraham J, Kitsiou S, Papautsky E, & **Faiola A.** (2017). Health Informatics Research Projects, Medical Technology Enterprise Consortium (MTEC), Poster, 2nd Annual Conference, March 30th, 2017. San Antonio, TX.

11. Tunnell, H. D., **Faiola, A.** & Bolchini, D. (2017). Guidelines to Incorporate a Clinician User Experience (UX) into the Design of Patient-Operated mHealth. Poster and Interactive Demo, *CHI 2017, ACM CHI Conference, Denver, CO*, April. 2017.

12. Zolnoori, M. Patrick, T. B., Conways, M., **Faiola, A.,** & Luos, J. (*2016*) Evaluating Acceptability and Efficacy of Antidepressant Medications using Patients Comments in Social Media. Poster, *American Medical Informatics Association, Annual Symposium*, *November, 2016*.

13. Tunnell, H. D., **Faiola, A.** & Pfaff, M. (2016). Secondary Users and the Personal mHealth Record: Designing Tools to Improve Collaboration Between Patients and Providers, Poster: 2016 IEEE International Conference on Healthcare Informatics 2016 (ICHI) in Chicago, IEEE Computer Society.

14. Ansah-Koi, K., Srinivas, P., Strzeszkowski, D., Gross, M., & **Faiola, A.** (2016) **Building Healthy Social Media for All: Investigating How Different Cultures Seek and Process**

Health Information, Extended Abstract. *Indiana University Purdue University Indianapolis (IUPUI) Research Day, April 8, 2016.*

15. Putka, J., Cavalcanti, L., Ahgharian, N., & **Faiola, A.** (2016) Reducing Cognitive Load of Unmanned Aerial Vehicle Soldier-Operators: A Novel Weapon-UAV Control Design, *IUPUI Research Day Poster Session, April 8.*

16. Srinivas, P, Cavalcanti, L., & **Faiola, A.** (2016) The Impact of Excessive Smartphone Usage: A Study on Flow and the Psychosocial Wellness of Students, *IUPUI Research Day Poster Session, April 8.*

17. Ansah-Koi, K., Srinivas, P., Strzeszkowski, D., Gross, M., & **Faiola, A.** (2016) Building Healthy Social Media for All: Investigating How Different Cultures Seek and Process Health Information, *IUPUI Research Day Poster Session, April 8.*

18. Srinivas, P., **Faiola, A.** & Hillier, S. (2015). Improving patient safety: Integrating data visualization and communication into ICU workflow to reduce cognitive load. Poster. *Human Factors and Ergonomics in Health Care (Improving the Outcomes)*, April 26, 2015, Baltimore, MD. https://doi.org/10.1177/2327857915041013

19. Srinivas, P., & **Faiola, A.** (2014). Smartphone dependency and consciousness: Observing flow in the everyday life. Extended Abstract. *Indiana University—Purdue University, Research Day, April 11, 2014.*

20. Srinivas, P., & **Faiola, A.** (2014). Modeling daily rounds to support efficient task management in ICU workflow. Poster, *Workshop on Interactive Systems in Healthcare (WISH 2014). In conjunction with the American Medical Informatics Association Annual Symposium, November 15, 2014.*

21. **Faiola, A.** & Srinivas, P. (2014). Extreme mediation: observing mental and physical health in everyday life. Poster. *Proceedings of the 2014 Association for Computing Machinery (ACM) International Joint Conference on Pervasive and Ubiquitous Computing (UbiComp 2014),* September 2014.

22. Boston-Clay, C., Jones, J., **Faiola, A.,** Dixon, B. & Pfaff, M., (2014). AMIA 2014, Assessing Health Information Technology Acceptance: Developing a Human Computer Interaction Activity-Centered Acceptance Framework, *Dissertation Poster, American Medical Informatics Association (AMIA) Annual Symposium, Washington, DC,* November 15-19, 2014.

23. Finch, R. J., Srinivas, P., Karanam, Y., Koval, O., & **Faiola, A.** (2014). Augmenting consciousness through invasive technologies: How do cochlear implant patients engage activity in the world? *Indiana University—Purdue University, Research Day, April 11, 2014.* Poster and Extended Abstract.

24. **Faiola, A.,** Srinivas, P., Karanam, Y., & Koval, O. (2014). Reducing diagnostic error in the ICU: A novel approach to clinical workflow -- visualization-communication integration. *Indiana University—Purdue University, Research Day, April 11, 2014.* Poster and Extended Abstract.

25. Srinivas, P., Karaham, Y., Chartash, D., Doebbeling, B., & **Faiola, A.** (2014). VizCom: A Novel Workflow Model for ICU Clinical Decision Support. In ACM CHI '14, Poster Session, May 1, Toronto, Canada. New York, NY: Association for Computing Machinery Press.

26. **Faiola, A.,** Srinivas, P., Karanam, Y. & Kovel, O. (2014). Reducing Diagnostic Error in the ICU: A Novel Approach to Clinical Workflow—Visualization-Communication Integration, *IUPUI Research Day Poster Session, April 11.*

27. Finch, R.J., Srinivas, P., and Karanam, Y., Koval, O., & **Faiola, A**. (2014). Augmenting Consciousness through Invasive Technologies: How Do Cochlear Implant Patients Engage Activity in the World? *IUPUI Research Day Poster Session, April 11.*
28. Srinivas, P. & **Faiola, A**. (2014). Smartphone Dependency and Consciousness: Observing Flow in Everyday Life, Poster, *IUPUI Research Day, April 11.*
29. Karaham, Y., **Faiola, A**., & Chartash (5/25/2013) MIVA: Decision Support, *Poster Session*. World Usability Day, IUPUI, Indianapolis, IN.
30. Stupiansky, N., Cummings, T., **Faiola, A**., Defazio, J. & Orr, D. P. (2011). The Effects of a Computer-Based Driving Game on Hypoglycemia Education among Adolescents with Type-1 Diabetes, *Abstract/Poster for the Society for Adolescent Health and Medicine*, *Poster Session*, 2011 Annual Conference, Seattle, Washington, March 29-April 1.
31. **Faiola, A.** and Rosenbaum, H. (4/23/2002). *Challenges in teaching usability theory and testing for new media and novel interface technologies*. *Special Interest Group Forum for Educators of HCI, ACM CHI '02 Conference*. *Poster Session*, Minneapolis, MN.

Invited Book Chapters

1. **Faiola A.,** Vatani H., & Srinivas P. (2018) The Impact of Smartphone Use on the Psychosocial Wellness of College Students. In: *Alexandrov D., Boukhanovsky A., Chugunov A., Kabanov Y., Koltsova O. (eds) Digital Transformation and Global Society. DTGS 2018. Communications in Computer and Information Science, vol 859*. Springer, Cham., *264-276.* https://doi.org/10.1007/978-3-030-02846-6_21
2. Bolchini, D., & **Faiola, A**. (2013). Usability assessment. In: *Dubitzky, W., Wolkenhauer, O., Yokota, H., and Cho, K.H. (Eds.). Encyclopedia of Systems Biology*. New York: Springer Science and Business Media, pp. 2328-2329. DOI**:** https://doi.org/10.1007/978-1-4419-9863-7_217
3. **Faiola, A.** & Newlon C. (2011) Advancing Critical Care in the ICU: A Human-Centered Biomedical Data Visualization Systems. In: *Robertson M.M. (eds) Ergonomics and Health Aspects of Work with Computers. Ergonomics and Health Aspects of Work with Computers. Lecture Notes in Computer Science, Vol 6779*. Springer, Berlin, Heidelberg, 119-128. https://doi.org/10.1007/978-3-642-21716-6_13
4. Bolchini D. & **Faiola A.** (2011) The Fusing of "Paper-in-Screen": Reducing Mobile Prototyping Artificiality to Increase Emotional Experience. In: *Marcus A. (eds) Design, User Experience, and Usability. Theory, Methods, Tools and Practice. DUXU 2011. Lecture Notes in Computer Science, vol 6770. Springer, Berlin, Heidelberg*, 548-556. https://link.springer.com/chapter/10.1007/978-3-642-21708-1_61
5. **Faiola, A**. & Kharrazi, H. (2010). Diabetes education and serious gaming: Teaching adolescents to cope with diabetes. In: *B. M. Hayes and W. Aspray (Eds.), Health Informatics: A Patient-Centered Approach to Diabetes*. *Cambridge, MA: MIT Press*, pp. 151-178.
6. Duke J., **Faiola A.,** & Kharrazi H. (2009) A Novel Visualization Tool for Evaluating Medication Side-Effects in Multi-drug Regimens. In: *Jacko J.A. (eds) Human-Computer Interaction. Interacting in Various Application Domains. HCI 2009. Lecture Notes in Computer Science, vol 5613. Springer, Berlin, Heidelberg*, pp. 478-487. https://doi.org/10.1007/978-3-642-02583-9_52
7. **Faiola A**. & Smyslova O. (2009) Flow Experience in Second Life: The Impact of Telepresence on Human-Computer Interaction. In: *Ozok A.A., Zaphiris P. (eds) Online Communities and Social Computing. OCSC 2009. Lecture Notes in Computer Science, vol*

5621. Springer, Berlin, Heidelberg, 574-583. https://doi.org/10.1007/978-3-642-02774-1_62

8. Kharrazi H., **Faiola A.**, & Defazio J. (2009) Healthcare Game Design: Behavioral Modeling of Serious Gaming Design for Children with Chronic Diseases. In: *Jacko J.A. (eds) Human-Computer Interaction. Interacting in Various Application Domains. HCI 2009. Lecture Notes in Computer Science, vol 5613. Springer, Berlin, Heidelberg*, 335-344. https://doi.org/10.1007/978-3-642-02583-9_37
9. Luzcando E., Bolchini D., & Faiola A. (2009) Evaluating Usability-Supporting Architecture Patterns: Reactions from Usability Professionals. In: *Jacko J.A. (eds) Human-Computer Interaction. New Trends. HCI 2009. Lecture Notes in Computer Science, vol 5610. Springer, Berlin, Heidelberg*, 320-328. https://doi.org/10.1007/978-3-642-02574-7_36
10. **Faiola, A**. & Matei, S. (2007). Cultural cognitive style and the Web: Toward a theory and practice of web design for international users. In*: K. St. Amant (Ed.), Linguistic and Cultural Online Communication Issues in the Global Age. Hershey, PA: Idea Group Published*, pp. 143-159. https://www.igi-global.com/book/linguistic-cultural-online-communication
11. **Faiola A.,** & Voiskounsky A.E. (2007) Flow Experience of MUD Players: Investigating Multi-User Dimension Gamers from the USA. In: *Schuler D. (eds) Online Communities and Social Computing. OCSC 2007. Lecture Notes in Computer Science, vol 4564. Springer, Berlin, Heidelberg*, 324-333. https://doi.org/10.1007/978-3-540-73257-0_36
12. Faiola, A. (2005). Toward an HCI theory of cultural cognition. In: *C. Ghaoui (Ed.), Encyclopedia of Human-Computer Interaction. Hershey, PA: Idea Group Published*, pp. 609-614.

Books and Educational Workbooks

1. **Faiola, A.** & Johnson, C. (Ed). (2004). *Psychology of human-computer interaction*. (Course Workbook) Indianapolis: IUPUI Publishing Services.
2. **Faiola, A.** & Larew, M. (Ed). (2004). *Human-computer interaction: Advanced concepts*. (Course Workbook) Indianapolis: IUPUI Publishing Services.
3. Faiola, A. (2003). *Typography for print and the Web: Web usability tools and methods*. (*Шрифты для печати и Web-дизайна*) Saint Petersburg, Russia: BHV Publishing GmbH.
4. Faiola, A. (Ed). (2003). *Human-computer interaction: Basic concepts for I300* (Course Workbook) Indianapolis: IUPUI Publishing Services.
5. Faiola, A. (Ed). (2002). *New media basics: Understanding message design theory in a post-information society*. New York: John Wiley and Sons, Inc., Custom Services.
6. Faiola, A. (2000). *Typography primer*, Sewickley, PA: Graphic Arts Technical Foundation Press.
7. Faiola, A. (Ed). (2001). *Human-computer interaction: An overview of theories for user interface design and usability*. New York: John Wiley and Sons, Inc., Custom Services.

Non-Refereed Papers and Theses

1. Faiola, A. (2005). *Cross-cultural cognition and online information design: Identifying cognitive styles among web designers of diverse national origin*. Ann Arbor, MI: UMI. http://docs.lib.purdue.edu/dissertations/AAI3191458/
2. Faiola, A. (2004). Advancing the design of more useable technologies: Human-computer interaction at IUPUI, *Informatics, 2*(2), 14-15.

3. Faiola, A. (2004). *Information Visualization: The mountain-view project. Informatics, 2*(2), 16.
4. Faiola, A. (2000). Culture and visual intelligence: A cross-cultural comparison of American and Russian students in visualization processes. *International Association for Cross-Cultural Psychology Bulletin.*
5. Faiola, A. (1989). Enhancing the skills of the graphic specialist for CBT development. *Instruction Delivery Systems*.12(5), 12-14.
6. Faiola, A. (1988). Principles and Guidelines for a Screen Display Interface. *VideoDisc Monitor*. 8(2), 27-29.
7. Faiola, A. (1984). *A computer-assisted instruction overview and prototype*. Unpublished master's thesis, The Ohio State University, Columbus, OH.
8. Faiola, A. (1979). *The transient object: A look at contemporary thinking and issues as applied to my recent artwork*. Master's Abstracts International, 65 l.

PRESENTATIONS (*First Name: Primary Presenter*)

Invited Talks, Keynotes, and Panels (*Local, National, and International*)

1. Faiola, A. (October 7, 2025). *Digital Health Solutions*: *Transforming Healthcare Through Translational Research and Innovation*, Seminar Keynote, Beta Iota Founders' Day Annual Seminar. University of Cincinnati, College of Nursing.
2. Faiola, A. (October 10, 2025). *The Synergetic Effects of Virtual Reality Immersion and Selective Attention Therapy for Brain Cancer Patients with Mild Cognitive Impairment: Recent Findings*, Seminar Speaker, University of Cincinnati, Gardner Neuroscience Institute Brain Tumor Symposium, University of Cincinnati.
3. Faiola, A. (April 11, 2025). *AI-Powered VR as In-Home Interventional Treatment for Cancer and Dementia Patients with Mild Cognitive Impairment: Generating Non-Invasive Stimuli in the Frontoparietal Neural Network*. Seminar Speaker. University of Cincinnati, Cancer Center 2025 Research Retreat, College of Medicine.
4. Faiola, A. (March 4, 2025). *AI-Powered VR as In-Home Interventional Treatment for Cancer and Dementia Patients with Mild Cognitive Impairment: Maximizing Frontoparietal Network Stimulation through Immersion, Selective Attention Therapy, and Non-Player Character Modelling*. Sapienza University of Rome, Italy, Department of Psychology, Area: Neuropsychology.
5. Faiola, A. (October 8, 2024). *A Virtual Reality Health Game Intervention for Neuro Oncology Patients Suffering from Mild Cognitive Impairment: A Review of Other Research Directions in Mobile Health and Biosensor Diagnostics*, University of Poland, Department of Cognitive Psychology, Human Interactivity & Language Lab
6. Faiola, A. (Sept. 20, 2023). *Making Cancer Care Portable & Equitable for Patients and Their Families: Using mHealth and Health Gaming to Impact Health Outcomes*, Markey Cancer Research Seminar Series, Seminar Speaker, College of Medicine, University of Kentucky.
7. Faiola, A. (Aug. 25, 2023). *Health disparities and information behavior: The Role of Mobile Health in Mitigating Mental Trauma in Families of Cancer Patients*, Social Hour Special Event, Association for Information Science & Technology, Guest Speaker.
8. Faiola, A. (Nov. 22, 2022). *Addressing the mental health disparities of families of critically ill patients from rural populations: Investigating the efficacy to reduce mental trauma using*

mobile health technology that connects families at home with clinicians at the bedside, 2nd International Conference on Interdisciplinary Approach in Social Sciences 2022 (Mental Health for All), Keynote (*Zoom*): Punjab, Pakistan.

9. **Faiola, A.,** Mathews, S., & Woodbury, M. (Sept. 14, 2022). *Panel on Digital Health Education, Nexus Summit 2022, Minneapolis,* Sept. 14, 2022, Virtual Panel, Sept. 13-14.
10. Faiola, A. (May 2018). *The Rise of the Digital Health Information Society? Empowering People by Connecting Mobile Health to Healthy Lifestyle Management*, Keynote, 3rd International Conference on Digital Transformations & Global Society, St. Petersburg State University of Information Technology and Optics, Russia.
11. Faiola, A. (Nov. 2017). *Consumer Health Informatics: Empowering Patients with Noncommunicable Diseases through mHealth*, Keynote, International Conference on Informatics, Health, & Technology, King Saud bin Abdulaziz University for Health Science, Riyadh, Saudi Arabia. [News Link]
12. Faiola, A., (Oct. 2018). *The Rise of Consumer eHealth Informatics: Advancing Mobile Health for the Rheumatoid Patient*, American College of Rheumatology**,** University Club of Chicago, Chicago, IL, Keynote (*Zoom*): Panel/Presentation.
13. Faiola, A., (Oct. 31, 2016). *Future Implications of Health Information Management Systems in Non-Communicable Disease Management*, Session: Mobile Health Technology and Chronic Disease Management: Applications in Rehabilitation, The American Congress of Rehabilitation Medicine, Chicago, IL Panel Presentation.
14. **Faiola, A.,** Khairat, S., & Kaufman, D. (June 29, 2016). *From coexistence to convergence: The pedagogical transpositioning of human-computer interaction within biomedical informatics*. 2016 InSpire, Education Symposium, American Medical Informatics Association. Panel/Presentation (S12), Columbus, OH.

Refereed Presentations / Talks

1. Chih M-Y, **Faiola A,** Alexander JL, Stroebel C, McCann C III, Brown K, Hull P, Mullett T. *Developing a Cancer Patient Navigation System: Usability Results*. Poster Presentation. 2025 American Medical Informatics Association (AMIA) Annual Symposium, Atlanta, GA. November 18, 2025.
2. Zolnoori, M., Ngufor, C., **Faiola, A.,** Eldredge, C. E., Luo, J. Patrick, T., Sohn, S. BallsBerry, J. Tafti, A. & Shah, N. (Nov 6, 2019). *Identifying factors affecting drug discontinuation in patients with depression: Text analysis of patient drug review posts*. (S09: Oral Presentations – Mental Health) Presented at the American Medical Informatics Association, Annual Symposium, Washington, DC. https://www.amia.org/amia2019/oral-presentations
3. Faiola, A. (Feb 14-15, 2019). *mHealth that supports the role of the MICU nurse in family mental healthcare,* Presented at*:* Session 4: Informatics Support for Practice-based Knowledge Generation and Nursing and Healthcare Practice Sponsored by Shadow Health, Health Informatics Kobb Symposium, College of Nursing, University of Florida, Gainesville, FL. https://kobbsymposium.nursing.ufl.edu/topics/
4. Faiola, A. (**Nov** 11, 2018). *FAMcare: A MICU Room-to-Mobile System—Supporting the Communication Needs of Families*, Presented at the: American Medical Informatics Association, Annual Symposium, San Francisco, CA. https://symposium2018.zerista.com/event/member/508059
5. Zolnoori, M., **Faiola, A**., & Patrick, T. B (Nov 11, 2018). *Utilizing Consumer Health Posts to Identify Underlying Factors Associated with Patients' Attitudes towards Antidepressants*, Presented at: American Medical Informatics Association, Annual Symposium, San Francisco, CA.

https://knowledge.amia.org/67852-amia-1.4259402/t006-1.4263223/t006-1.4263224/2976194-1.4263228/2973531-1.4263225

6. **Faiola, A.,** Vatani, H., Greenhill, K., Bhuma, M., & Agarwal, M. (May 21, 2018). *HYPOalert: Designing Mobile Technology for Hypoglycemic Detection and Monitoring—Based on Human Breath*, Presented at the: 11th Pervasive Health Conference 2018, New York Academy of Medicine, New York, New York.
7. **Faiola, A.,** Vatani, H., & Srinivas, P. (June 1, 2018). *The impact of smartphone use on the psychosocial wellness of college students*, Presented at the: 3rd International Conference—Digital Transformation and Global Society 2018, St. Petersburg, Russia.
8. Zolnoori, M., Patrick, T., Fung, K., **Faiola, A.,** Wu, Y., Zhu, J., and Eldredge, C. (Nov, 2017). Development of an Adverse Drug Reaction Corpus from Consumer Health Posts for Psychiatric Medication, (Oral Presentations – Mental Health) Presented at the American Medical Informatics Association, Annual Symposium, Washington, DC. https://digitalcommons.usf.edu/si_facpub/444/
9. **Faiola, A.,** Papautsky, E. L., & Greenhill, K. (Oct 5-7, 2017) eMental health for family members of ICU patients: Findings that support a mobile family-centered approach to wellness, *7th Annual European Conference on Mental Health,* Berlin, Germany.
10. **Faiola, A.** & Srinivas, P. (Oct 8-12, 2017). Excessive smartphone use and mental health: The impact of extreme mediation on psychosocial wellness, *17th World Congress of Psychiatry (World Psychiatric Assoc.)*, Berlin, Germany.
11. Boyd AD, Abraham J, Kitsiou S, Papautsky E, & **Faiola A.** (March 30, 2017). Health Informatics Research Projects, Medical Technology Enterprise Consortium (MTEC), Presentation, 2nd Annual Conference, San Antonio, TX.
12. **Faiola, A.,** Papautsky, E. L. and Joo, M. Supporting Patient Healing through ICUsmartCARE: Technologies that Enable Family Collaboration, Presence, and Information Flow, *2016 IEEE International Conference on Healthcare Informatics (ICHI)*, 2016, pp. 297-300. doi: 10.1109/ICHI.2016.42.
13. **Faiola, A.** Srinivas, P. & Duke, J. (Nov 18, 2015). Supporting clinical cognition: a human-centered approach to a novel ICU information visualization dashboard, Presented at: *American Medical Informatics Association, Annual Symposium*, *2015*, San Francisco, CA. https://pubmed.ncbi.nlm.nih.gov/26958190/
14. Srinivas, P., **Faiola, A.,** & Doebbeling, B. (Oct 15, 2015). A Ubiquitous Situation-Aware Data Visualization Dashboard to Reduce ICU Clinician Cognitive Load, Presented at: *IEEE HealthCom 2015 Conference, Boston, MA*.
15. Srinivas, P., **Faiola, A.,** & Khan, B. (Oct 15, 2015). Supporting Information Management in ICU Rounding: A Novel Mobile System for Managing Patient-Centered Notes and Action-Items, Presented at: *IEEE HealthCom 2015 Conference, Boston, MA*.
16. Srinivas, P., Tunnell, H., **Faiola, A.,** & Haggstrom, D. (Oct 11, 2015). Clinicians as Secondary Users of Patient-Centered, Mobile Technology in Complex Healthcare Settings, Presented at: *IEEE HealthCom 2015 Conference, Boston, MA*.
17. Srinivas, P. & **Faiola, A.** (April 26, 2015). Improving patient safety: Integrating data visualization and communication into ICU workflow to reduce cognitive load. Presented at: *Conference for Human Factors and Ergonomics in Health Care (Improving the Outcomes) April 26, 2015, Baltimore, MD*.
18. **Faiola, A.** & Srinivas, P. (Sept 15, 2014). Extreme mediation: observing mental and physical health in everyday life. Presentation. *Proceedings of the 2014 Association for Computing Machinery (ACM) International Joint Conference on Pervasive and Ubiquitous Computing (UbiComp 2014)*.

19. **Faiola, A**., Srinivas, P., & Karanam, Y. (Nov 15, 2014). A novel approach to ICU data visualization and communication integration. Presentation. WISH 2014, *Workshop on Interactive Systems in Healthcare (WISH), Washington, DC. In Conjunction with the American Medical Informatics Association Annual Symposium.* https://wish2014.wordpress.com/

20. **Faiola, A.,** Srinivas, P., Karanam, Y., Chartash, D., & Doebbeling, B. (April 23-31, 2014). VizCom: a novel workflow model for ICU clinical decision support. Extended Abstract. ACM *CHI'14, Human Factors in Computing Systems*, *Association for Computing Machinery,* Toronto Ontario, Canada. https://dl.acm.org/doi/10.1145/2559206.2581332

21. Srinivas, P., & **Faiola, A.** (Nov 15, 2014). Modeling daily rounds to support efficient task management in ICU workflow. Presented at: *WISH: Workshop on Interactive Healthcare Systems, Washington, DC, in conjunction with the American Medical Informatics Association (AMIA) Annual Symposium*.

22. **Faiola, A.** & Srinivas, P. (Oct 22, 2014). Reducing error in the intensive care unit: A novel approach to workflow modeling and distributed clinical intelligence. Presented at: *eHealth Initiative's Data and Analytics Council Webinar: A System Approach to Healthcare*.

23. Boston-Clay, C., Jones, J., **Faiola, A.,** Dixon, B. & Pfaff, M., (Nov 15, 2014). Assessing Health Information Technology Acceptance: Developing a Human Computer Interaction Activity-Centered Acceptance Framework, Presented at: *Dissertation Review, Presented at the Conference for American Medical Informatics Association (AMIA) Annual Symposium, Washington, DC, November 15-19, 2014*.

24. Srinivas, P**.** & **Faiola, A**. (Sept 13, 2014). Extreme mediation: Observing mental and physical health in everyday life, Presented at: *2014 ACM International Joint Conference on Pervasive and Ubiquitous Computing, Presentation, Seattle, WA*.

25. Srinivas, P., & **Faiola, A.** (April 26, 2014). Modeling daily rounds to support efficient task management in ICU workflow. Presented at: WISH 2014: *Workshop on Interactive Healthcare Systems*, Presentation *Nov. 15,2014, Washington, DC.*

26. **Faiola, A.,** & Srinivas, P. (Nov 15, 2014). A novel approach to ICU data visualization and communication integration. Presented at: *Workshop on Interactive Systems in Healthcare (WISH)*, *AMIA, Washington, DC. (in conjunction with the American Medical Informatics Association (AMIA) Annual Symposium).*

27. **Faiola, A**. (Nov 16, 2013). Sociocultural-Embodied Consciousness: An Integrated Theory, Presented at: *13th International Readings of L.S. Vygotsky: Psychology of Consciousness: Origins and Perspectives, Russian State University for the Humanities, Vygotsky Institute of Psychology*, Moscow, Russia, November 12-16, 2013.

28. **Faiola, A.** (May 31, 2013) Distributed Creative Activity: Augmenting Interpersonal Cognition in Clinical Activity through Health Information Technology. Presented at: *Scientific Conference on Fundamental Problems of Psychology, Extended Abstracts, Parallel Session on the Psychology of a Humans Immersed in Information Technology*, Moscow State University, Moscow, Russia.

29. **Faiola, A**., Boston-Clay, C., Jones, J., Newlon, C., Downey, M., & Comer, S. (May 5, 2012). Managing patient health across diverse spaces: Using activity theory to model clinical decision-support for the home. Presented at: *ACM CHI '12 Extended Abstracts on Bridging Clinical and Non-Clinical Health Practices: Opportunities and Challenges*, *Workshop, Austin, TX*. New York, NY: Association for Computing Machinery Press.

30. **Faiola, A.,** Boston-Clay, C., Jones, J., Newlon, C., & Downey, M. (May 2012). Managing Patient Health Across Diverse Spaces: Using Activity Theory to Model Clinical Decision-Support for the Home. Presented at: *ACM CHI '12 Extended Abstracts on Bridging Clinical and Non-Clinical*

Health Practices: Opportunities and Challenges, *Workshop, Austin, TX*. New York, NY: Association for Computing Machinery Press.

31. Boston-Clay, C., Jones, J., & **Faiola,** (May 2012). The Power of a Triangulation Study in Healthcare System Implementation. Presented at: *ACM CHI '12 Extended Abstracts on Bridging Clinical and Non-Clinical Health Practices: Opportunities and Challenges*, *Workshop, Austin, TX*. New York, NY: Association for Computing Machinery Press.
32. Bolchini, D. & **Faiola, A**. (July 15, 2011). It's Mobile Before It's Real: Extreme Prototyping with "Paper-in-Screen, In G. Salvendy and J. Jacko (Ed.), Presented at: *14th International Conference on Human-Computer Interaction.* Orlando, FL, 2011 (Lawrence Erlbaum).
33. **Faiola, A**. & Newlon, C. (July 15, 2011). Advancing Critical Care in the ICU: A Human-Centered Biomedical Informatics Approach to Designing Data Visualization Systems, In G. Salvendy and J. Jacko (Ed.), Presented at: *14th International Conference on Human-Computer Interaction*. Orlando, FL, 2011 (Lawrence Erlbaum).
34. **Faiola, A**. & Downey, M. (Nov 15, 2011). Transforming Clinician Psychology via Health Information Technology as Tools of Mediation: Understanding Medical Information Visualization Systems Using Cultural-Historical Theory, Presented at: *12th International Readings of L.S. Vygotsky: Sign as a Psychological Tool, Russian State University for the Humanities*, Moscow, Russia, November 14-17.
35. Pulido, D., Bolchini, D. & **Faiola, A**. (Feb 4, 2010). Paper-in-screen prototyping: Rapid techniques to test and anticipate the mobile user experience. Presented at: *Interaction Design 2010, 10th Annual International Conference*. Savannah, GA.
36. Edgardo, L., Bolchini, D. & **Faiola, A**. (July 2, 2009). Evaluating usability-supporting architectural patterns: Towards bridging the communication gap between software engineers and usability professionals. Presented at: Presented at: *13th International Conference on Human-Computer Interaction*. San Diego, CA.
37. Duke, J. & **Faiola, A**. (July 23, 2009). Health Informatics and Drug Effect Ranking: A Novel Data Visualization of Medication Side-Effects in Multi-Drug Regimens. Presented at: Presented at: *13th International Conference on Human-Computer Interaction*. San Diego, CA.
38. **Faiola, A.** & Smyslova, O. (July 23, 2009). Flow experience and telepresence in second life: Correlating pleasure, immersion, and interaction in virtual communities. Presented at: Presented at: *13th International Conference on Human-Computer Interaction*. San Diego, CA.
39. Kharrazi, H. & **Faiola, A.** (July 24, 2009). Healthcare Game Design: Behavioral Modeling of Serious Gaming Design for Children with Chronic Diseases. Presented at: Presented at: *13th International Conference on Human-Computer Interaction*. San Diego, CA.
40. Newlon, C., **Faiola, A.,** & MacDorman, K. (July 9, 2008). Building the Mega-Collaboration Interface: Behavioral, Cultural, and Cognitive Factors in the Design, Presented at: *The HCI Symposium – Information Visualization Conference 2008, IEEE***, London, England**.
41. **Faiola, A.** & Hillier, S. (Feb 17, 2007). Expediting Health Care Decision-Making Using Multivariate Relational Datasets: A Medical Data Visualization System for Complex Critical Care Patient Assessments. Presented at: *Workshop on HCI and Information Design to Communicate Complex Information*, University of Memphis, Memphis TN.
42. Voiskounsky, A. E. & **Faiola, A**. (July 23, 2007). Flow experience of MUD players: Investigating multi-user dimension gamers from the USA. Presented at: *12th International Conference on Human-Computer Interaction*. Beijing: China.
43. **Faiola, A.** & Matei, S. A. (March 15, 2007). *Online education and the cross-cultural learner: Toward a theory of cultural cognitive design for the web. Session: Research on Learning in Virtual*

Environments. Presented at: American Educational Research Association 2007 Annual Meeting, Chicago, Illinois.

44. Matei, S. A., Wheatley, D. J., & **Faiola, A**. (June 19, 2006). *Multipurpose mobile devices, graphic user interfaces and physical affordances: a case study*. Presented at the: International Communication Association Conference, Dresden, German.
45. Beatty, K, Elliott, R. & **Faiola, A.** (June 28, 2006). Seeking news on the internet: an analysis of user behavior in selecting online media outlets. Sudweeks, Fay; Hrachovec, Herbert; Ess, Charles (Editors). *Cultural attitudes towards technology and communication 2006: proceedings of the Fifth International Conference on Cultural Attitudes towards Technology and Communication*; Tartu, Estonia, 28 June-1 July 2006. Murdoch University, 2006. p. 707.
46. Newlon, C. & **Faiola, A.** (June 28, 2006). Support for mega-team collaboration. Sudweeks, Fay; Hrachovec, Herbert; Ess, Charles (Editors). *Cultural attitudes towards technology and communication 2006: proceedings of the Fifth International Conference on Cultural Attitudes towards Technology and Communication*; Tartu, Estonia, 28 June-1 July 2006. Murdoch University, 2006. p. 707.
47. **Faiola, A.** & Hillier, S. (July 5, 2006). Multivariate relational visualization of complex clinical datasets in a critical care setting: a data visualization interactive prototype. Presented at: *Information Visualization Conference 2006*, London, England.
48. Faiola, A. (July 25, 2005). Integrating the Visualization of Personal Histories to Enhance File Search in 3D Landscapes: Applying File Search to 3PDPView. Presented at: *11th International Conference on Human-Computer Interaction*., Las Vegas, NV.
49. **Faiola, A**. & Matei, S. (May 17, 2005). The cultural cognitive style of multimedia development: Identifying designer cognitive structures for the web. Presented at the: *International Communication Association Conference*. New York City, NY.
50. Faiola, A. (May 25, 2005). *The Design Enterprise: Rethinking the HCI Education Paradigm*. Presented at: Presented at: *11th International Conference on Human-Computer Interaction*. Las Vegas, NV.
51. Faiola, A. (May 25, 2005). *Cross-Cultural Computer-Mediated Communication and Online Learning: Assessing the Impact of Web Designer Cognitive Style on Information Design*. Presented at: *11th International Conference on Human-Computer Interaction*. Las Vegas, NV.
52. Faiola, A., (May 22, 2004). Living with computing: Thoughts on humanizing technology. (Colloquium Presentation.) Presented at the: *Second International Conference on New Directions in the Humanities, 2004*, Monash University Centre, Prato, Italy.
53. Buher, M. & **Faiola, A**. (May 24, 2004). Using 3D landscapes to navigate filespace: Extending the data mountain with mountainview. Presented at the: *HCI Symposium –Information Visualization Conference 2004, IEEE*, London, England.
54. Faiola, A. (July 10, 2003). *The Copernican shift: HCI education and the design enterprise*. Presented at: *10th International Conference on Human-Computer Interaction*. Crete, Greece.
55. Faiola, A. (June 27, 2003). *eBook Technologies in America and Russia*. Presented at the: Conference of the World Bank and Russian National Fund of Education and Training for Schoolbook Editors and Editorial Staff, Moscow, Russia.
56. Faiola, A. (June 24, 2003). *Children's Book Typography: An Overview of Practice and Empirical Study*. Presented at the: Conference of the World Bank and Russian National Fund of Education and Training for Schoolbook Editors and Editorial Staff, Moscow, Russia.
57. Faiola, A. (May 28, 2002). *eBook Market Potential in Russia: Trends, Copyrights, and Technologies.* Presented at the: Council on University Publishing in Russia, 10th Annual Conference, Moscow, Russia.

58. Faiola, A. and Sturm, C. (April 22, 2002). *Aspects of Remote Testing*. Presented at the: Computer-Human Interaction Conference, It's A Global Economy Out There: Usability Innovation for Global Market Places. Minneapolis, MN.
59. Faiola, A. (April 22, 2002). *Cross-cultural studies of hypermedia design and accessibility*. Presented at the Workshop of the 2002 Computer Human Interaction Conference, It's A Global Economy Out There: Usability Innovation for Global Market Places. Minneapolis, MN.
60. **Faiola, A.** & Rosenbaum, H. (April 23, 2002). *Challenges in teaching usability theory and testing for new media and novel interface technologies*. Presented at the Educational Forum of the 2002 Computer-Human Interaction Conference, Minneapolis, MN.
61. Faiola, A. (April 22, 2002). *Russian and American Mental Models and the World-Wide-Web: A Cross-Cultural Study of Hypermedia Design and Accessibility*. Presented at the: 2002 Computer Human Interaction (CHI'02), Usability Workshop: Usability Innovation for Global Market Places, Minneapolis, MN.
62. Faiola, A. (Nov 18, 2001). *Understanding Usability for New Media Products: Design and Testing Principles for Graphic User Interfaces, Information Architecture, and Navigation*. Presented at the: Graphica 2001, International Conference on Graphics Engineering for Arts and Design, San Paulo Brazil.
63. Faiola, A. (April 2000). *Cross-cultural landscapes of visual intelligence: An investigation across cultural boundaries*. Iowa State University, Presented at the: International Visual Literacy Association Annual Conference, Ames, Iowa.

Invited Research Presentations (U.S. and Abroad) [Total: 39]

1. Faiola, A. (2019). *mHealth Informatics: Integrating Interaction Design w/ Health Data Science*, Ramaiah University of the Health Sciences and College of Medicine, Bangalore, India.
2. Faiola, A. (April 26, 2018). *Enabling Human Systems: Biomedical and Health Informatics and Socio-Augmentation*, Presented to: Human Augmentics Group, University of Illinois at Chicago, Chicago, IL.
3. Faiola, A. (April 28, 2017). *mHealth Design for Patient and Family Care: Recent Studies Supporting Healthy Lifestyle Management*, Presented to: Department of Biomedical Informatics, College of Health Solutions / Mayo Clinic, Arizona State University, Scottsdale, AZ.
4. Faiola, A. (Dec 5, 2017). *Biomedical Interaction Science: Applying Informatics to the Design and Analysis of mHealth Information Technologies*, Presented to: Biomedical and Health Informatics Colloquium Series, University of Illinois at Chicago, Chicago, IL.
5. Faiola, A. (March 31, 2016). *Biomedical & Health Informatics: Empowering Patients and their Families through mHealth*, Presented to: Department of Informatics, Health Informatics Faculty, UC Irvine, CA.
6. Faiola, A. (Dec 6, 2016). *Biomedical Interaction Science: The Study of Healthcare Interactions that Impact the Design and Implementation of Health IT*, Presented to: Biomedical and Health Informatics Colloquium, The University of Illinois at Chicago.
7. Faiola, A. (Nov 11, 2016). *Biomedical Interaction Science: A Journey from the Fine Arts to Biomedical Informatics*, Presented to: Department of Computer Science, The University of Illinois at Chicago.
8. Faiola, A. (Nov 3, 2016). *A Double Helix: Parallel Journeys Separated by Time—From the Fine Arts to the Health Sciences*, Presented to: Frank Armitage Biannual Lecture Forum, The Department of Biomedical Visualization, The University of Illinois at Chicago.
9. Faiola, A. (May 15, 2014). *Technologies that Transform Health and Wellness: The Effects of Non/Invasive Systems on Human Consciousness*, Presented at: DeVault Otologic Research Laboratory, Indiana University School of Medicine, Colloquium Lecture Series.

10. Faiola, A. (Sept 18, 2014). *Technologies that Transform Health and Wellness: The Effects of Non/Invasive Systems on Human Consciousness*. Presented at: Moscow State University, Department of Psychology, Moscow, Russia.
11. Faiola, A. (May 31, 2013) *Distributed Clinical Intelligence: A Decision-Support VizCom System that Supports Intensivist Activity in the ICU*, *Work-in-Progress Speaker Series: Invited Talks*. Presented at: Regenstrief Institute, Indianapolis, IN.
12. Faiola, A. (Sept 24, 2012). *Managing Patient Health Across Diverse Spaces: Using Cultural Historical Activity Theory to Model Pervasive Decision-Support*, Presented at: Department of Informatics, Umeå University, Sweden.
13. Faiola, A. (Sept 11, 2012). *Managing Patient Health Across Diverse Spaces: Using Cultural Historical Activity Theory to Model Pervasive Decision-Support*, Presented at: Laboratory of Human-computer Interaction and Group Technology, Department of Information Processing Science, University of Oulu, Finland.
14. Faiola, A. (Nov 20, 2011). *The Effects of Flow in Virtual Worlds and Game-Based Learning Behavior*. Presented to: St. Petersburg State University, Department of Psychology, St. Petersburg, Russia.
15. Faiola, A. (Nov 20, 2011). *Data Visualization as Psychological Tools of Mediation and Clinical Learning*. Presented at: Beijing University, Department of Computer Science, HCI Lab, Beijing, China.
16. Faiola, A. (Dec 3, 2011). *Clinical Decision Support InfoViz Systems: Modeling Complex Medical Space Using Cultural-Historical Activity Psychology*. Presented at: Tallinn University, Informatics Institute, Tallinn, Estonia.
17. Faiola, A. (Nov 17, 2011). *Data Visualization as Psychological Tools of Mediation and Clinical Learning*. Presented at: Moscow State University, Department of Psychology, Moscow, Russia.
18. **Faiola, A**. & Hillier, S. (March 22, 2010). *Medical Data Visualization System for Complex Critical Care Patient Assessments*. Presented at: Research Day and Community Research Showcase, Indiana University Research and Technology Corporation, Indianapolis, IN.
19. Bakowski, D., **Faiola, A**. & Witt, G. J. (Oct 3, 2008). *Transportation Usability,* Presented to the: World Usability Day, Workshop and Seminar, Indiana Chapter Usability Professionals' Association (UPA), Indianapolis, IN.
20. **Faiola, A.,** Hillier, S., & Saleem, J. (Nov 8, 2007). *Usability of Health Information Technology: Biomedical Human-Computer Interaction for Improving Patient Care.* Presented to the: World Usability Day, Workshop and Seminar, Indiana Chapter Usability Professionals' Association (UPA), Indianapolis, IN.
21. Faiola, A. (Nov 14, 2006). *Return on investment and Usability. World Usability Day, Workshop and Seminar*, Presented to the: Indiana Chapter Usability Professionals' Association (UPA), Indianapolis, IN.
22. Faiola, A. (Dec 17, 2004). *Principles of Design and Usability for Web Publishing*. Presented at: Moscow State University of the Printing Arts, Moscow, Russia.
23. Faiola, A. (Dec 14, 2004). *Computer Graphics and Prototype Construction: Engineering Products that Work for Humans*. Presented to the: House of Scientists, St. Petersburg, Russia.
24. Faiola, A. (Dec 18, 2004). *HCI Pedagogy: A New Framework*. Moscow State University, Presented to the: Department of Psychology and ACM CHI Chapter in Moscow, Russia.
25. Faiola, A. (June 12, 2003). *New Media Usability: Theory and Best Practices*. Presented to the: St. Petersburg Institute of Information Technology and Optics, Russia, Department of Computer Graphics and Engineering, St. Petersburg, Russia.
26. Faiola, A. (Dec 17, 2003). *Multimedia Interface Design and Usability*. Presented to the: Moscow State University of the Printing Arts, Department of Information Technology, Moscow, Russia.

27. Faiola, A. (May 21, 2002). *eBook Technologies: An Overview*. Presented to the: Moscow State University of the Printing Arts, Department of New Media and Distance Education. Moscow, Russia.
28. Faiola, A. (May 16, 2002). *Designing a User-Centered Web Interface: Design, Architecture and Usability*. Presented to the: Art and Design Institute of Berlin, Industrial Design Department, Berlin, Germany.
29. Faiola, A. (May 14, 2002). *Web Usability and International User Interfaces: Theory, Tools, and Techniques*. Presented to the: University of Bremen, Computer Science Department, New Media Program, Bremen, Germany.
30. Faiola, A. (May 13, 2002). *Designing a User-Centered Web Interface: Design, Architecture and Usability*. Presented to the: Delpht Technical University, Computer Science Department, Media Knowledge, Delpht, Netherlands.
31. Faiola, A. (May 5, 2002). *New Media Interface Design and Usability: Design Theory and Testing for Web Products*. Presented to the: University of Amsterdam, New Media Department, Amsterdam, Netherlands.
32. Faiola, A. (June 6, 2002). *Web Usability Theory Models for Teaching and Application*. Presented to the: House of Scientists, St. Petersburg, Russia.
33. Faiola, A. (May 5, 2002). *Curricula and Cross-Cultural Issues in Interactive Media Usability*. Presented to the: Mediamatic Design, Consulting Group, Amsterdam, Netherlands.
34. Faiola, A. (June 3, 2002). *New Media Usability: Theory and Best Practices*. Presented to the: St. Petersburg Institute of Information Technology and Optics (Tech University), Department of Computer Graphics and Engineering, St. Petersburg, Russia.
35. Faiola, A. (June 2000). *The New Media Enterprise: The Emergence of ePublishing*. Presented to the: Moscow State University of the Printing Arts, Moscow, Russia.
36. Faiola, A. (May 8, 2000). *Preparing the Digital Designer for Future Trends and Strategies in an Info-Graphic Global Society—Part 2. (Human-Computer Interaction: User Interface Design for the Web)*, Presented to the: St. Petersburg Institute of Information Technology and Optics, Russia. Department of Computer Graphics and Engineering, St. Petersburg, Russia.
37. Faiola, A. (Dec 13, 1999). *Preparing the Digital Designer for Future Trends and Strategies in an Info-Graphic Global Society—Part 1. (Visual Communication Theory and Design*. Presented to the: St. Petersburg Institute of Information Technology and Optics (Tech University), Russia. Department of Computer Graphics and Engineering, St. Petersburg, Russia.
38. Faiola, A. (May 20, 1999). *New Media Graphics Curricula: Pedagogy and Methodology*. Presented to the: House of Scientists, St. Petersburg, Russia.
39. Faiola, A. (May 11, 1999). *Digital Publishing in the New Millennium*. Presented at: St. Petersburg Institute of Information Technology and Optics, Department of Computer Graphics and Engineering. Midwest Universities Consortium International Association, St. Petersburg, Russia.

Invited Service Presentations [Total: 10]

1. Faiola, A. (Feb 21, 2017). *Departmental Research Overview*. Presented at: Department of Health Informatics, King Saud bin Abdulaziz University for Health Science, Riyadh, Kingdom of Saudi Arabia.
2. Faiola, A., (Dec 21, 2011). *SoIC Recruitment Presentation: Research and Teaching and Overview of the Indiana University School of Informatics and Computing at IUPUI*, Presented to the: University of Public Relations, Beijing, China.
3. Faiola, A., (Dec 19, 2011). *SoIC Recruitment Presentation: Research and Teaching and Overview of the Indiana University School of Informatics and Computing at IUPUI*. Presented to the: School of Information Management, Sun Yat-Sen University, Guangzhou, China.

4. Faiola, A., (Dec 16, 2011). *SoIC Recruitment Presentation: Research and Teaching and Overview of the Indiana University School of Informatics and Computing at IUPUI*. Presented to the: School of Communication and Design, Sun Yat-Sen University, Guangzhou, China.
5. Faiola, A. (Oct 14, 2005). *Principles of web design and usability: Improving accessibility to law library online information*. Presented to the: Ohio Regional Association of Law Libraries (ORALL) and Chicago Area Law Librarians (CALL). Indiana University Purdue University Indianapolis, School of Law.
6. Faiola, A. (April 13, 2005). *Interaction design and system usability: Design an Effective strategy for Web and software development*. Presented to the: Indianapolis Quality Assurance Association Inc.
7. Faiola, A. (4/6/2005). *Web design and usability: Design an Effective strategy for academic Web development*. Presented to the: IUPUI Communications Division and Campus-Wide Web Deployment.
8. Faiola, A. (Nov 20, 2003). *Disciplinary Overview of Human-Computer Interaction: Bi-Annual Presentation to I502*. Presented to the: Indiana University – SoIC, IUPUI. Presented each semester to beginning graduate students.
9. Faiola, A. (March 14, 2001). *New Media Usability. TechConnect, Poster Session*, Presented to the: Indiana University Purdue University, Indianapolis, IN. (Invited presentation, initiated by the department.)
10. Faiola, A. (Feb 14, 2001). *Human Computer Interaction and Multimedia Usability Testing: Understanding the Key Components for Building Effective Interfaces*. Presented to the: Purdue University, Human Factors and Ergonomics Society, West Lafayette, IN.

PRODUCTS, PATENTS, AND COMPANIES

1. **Product**: MIVA: Medical Information Visualization Assistant, a data visualization clinical decision support system for use in the ICU or other clinical-data-intense environments.
   - **Patent #:** 8,645,164 B2 - **US Patent Link: [LINK]**
   - **Patent date filed**: 5/27/10 & 1/6/11 (**Patent date**: February 4, 2014; **Patent Expired**: 2018)
   - **Assignee**: Indiana University Research and Technology Corporation
   - **Inventors**: **Anthony Faiola**, Formally: Indiana University, Indianapolis; Currently: University of Kentucky, and **Simon C. Hillier,** Dartmouth College (EtnaNH) (Formally: Indiana University)
2. **Product**: Low Power Wireless Sensor System with Ring Oscillator and Sensors for Use in Monitoring of Physiological Data.
   - **Patent #:** 20150295562 (Provisional #) - **US Patent Link: [LINK]**
   - **Patent date filed**: April 13, 2015 (**Patent date published**: Oct. 15, 2015)
   - **Assignee**: Indiana University Research and Technology Corporation
   - **Inventors**: Mangilal Agarwal, Purdue University (IUPUI); Anthony Faiola, Indiana University (IUPUI); Hosseign Jafarian, Purdue University (IUPUI); Sudhir Shrestha, Purdue University; Khodadad Varahramyan, University of Maine; Ali Daneshkha, Purdue University.
3. **Product**: FamCarePlus
   - **Apple Store**: https://apps.apple.com/us/app/famcare/id6446958621
   - **Website**: https://famcareplus.org/
   - **Patent #:** No patent issued as of this date.
   - **Description: FamCarePlus supports access to patient health updates for family members, caregivers, and next-of-kin (NOK). FamCarePlus enhances communication and coordination between (remote) families and healthcare staff at point-of-care**.
4. **Product**: HomeTown Bound
   - **Patent #:** No patent issued as of this date.
   - **Description: Hometown Bound is an interactive gaming environment that includes cityscapes, persons and objects, through which cognitively impaired patients navigate. Moving through a 3D space as a (first-person) avatar, the game is designed to increase cognitive and sensory engagement through (embedded) selective attention (SA) exercises.**
5. **Company**: Advanced Insight Medical (AIM), LLC—Anthony Faiola, CEO
   - Registered in Indianapolis, Indiana, D&B DUNS Number: 078682124, Nov. 2016.
   - Dedicated to biomedical and health information technology such as mobile health and telehealth for purposes of self-monitoring, clinical support, and patient and family centered care.

TEACHING

SYMBOL DESCRIPTIONS		
COURSE TYPE	**NEW OR REVISED COURSES**	**LOCATION OF COURSES TAUGHT**
[R] = Research Methods	† = New Course Development	UC = University of Cincinnati
[P] = PhD Courses	†† = Completely Revision	UK = University of Kentucky
[I] = Introductory Course	* = Approx. semester enrollment	UIC = University of Illinois—Chicago
	** = Course Developed, not taught	IU = Indiana University
	# = Anticipated	PU = Purdue University

COURSES TAUGHT

(*1998 TO PRESENT*)

Courses Listed According to Discipline.

Health Sciences and Biomedical / Health Informatics

COURSE#	COURSE TITLE	TYPE	SIZE	NEW/REV	UNIVERSITY	
NURS8074	Introduction to Design Thinking for Health	**[R]**	10 (#)	†	UC	(Spg. 2026)
NURS8074	Introduction to Design Thinking for Health	**[R]**	5	†	UC	(Fall 2025)
HHS 454	Research (*Methods*) in Human Health Sciences	**[R]**	17	n/a	UK	(Spg. 2024)
CHS 150	Introduction to Interprofessional Healthcare	**[I]**	70	n/a	UK	(Fall 2023)
HHS 454	Research in Human Health Sciences	**[R]**	18	n/a	UK	(Spg. 2023)
HHS 455	Research Experience in the Health Sciences.	**[R]**	4	†	UK	(Spg. 2023)
PRD 560	Healthcare: Design Thinking for Mobile Health	**[R]**	15	†	UK	(Spg. 2023)
HHS 454	Research in Human Health Sciences	**[R]**	27	n/a	UK	(Fall 2022)
HHS 455	Research Experience in the Health Sciences.	**[R]**	3	†	UK	(Fall 2022)
CHS 150	Introduction to Interprofessional Healthcare	**[I]**	32	n/a	UK	(Spg. 2022)
HHS 455	Research Experience in the Health Sciences	**[R]**	6	n/a	UK	(Spg. 2022)
BHIS 501	Health Informatics Capstone Project	**[R]**	14	n/a	UIC	(2017-20)
BHIS 593	Design Thinking for Health: Seminar 1	**[R]**	5	†	UIC	(2019)
BHIS 500	Health Informatics Strategic Inquiry—Project	**[R]**	1	n/a	UIC	(2017-20)
INFO 305	Introduction to Research (*for Informatics*)	**[R]**	30	††	IU	(2014-16)
INFO 501	Introduction to Informatics for HCI	**[P/R]**	24	†	IU	(2014-16)

Human-Centered Computing (*Human Factors* / *Human-Computer Interaction*)

COURSE#	COURSE TITLE	TYPE	SIZE	NEW/REV	UNIVERSITY
INFO 270	Intro. to HCI Principles and Practices	**[I]**	12	††	IU
INFO 275	Intro. to Human-Computer Interaction Theory	**[I]**	25	††	IU
INFO 300	Human-Computer Interaction	**[I]**	30	††	IU
INFO 480	Exper. Design & Eval. of Ubiquitous Computing	**[I]**	12**	††	IU
INFO 563	Psychology of Human-Computer Interaction	**[R]**	15**	††	IU
INFO 541	Human Computer Interaction 1	**[I]**	15*	†	IU
INFO 542	Human-Computer Interaction II	**[I]**	15**	††	IU
INFO 564	Prototyping for Interactive Systems	**[R]**	5	†	IU
INFO 543	Usability and Evaluative Methods for HCI	**[R]**	8	†	IU
HCI 680	HCI Professional Practice 1 (*Capstone*)	**[R]**	15	†	IU
HCI 681	HCI Professional Practice 2 (*Capstone*)	**[R]**	15	†	IU

INFO 694	Thesis in HCI	**[R]**	3	†	IU
INFO 624	HCI Seminar I	**[P]**	8	†	IU
INFO 634	HCI Seminar 2	**[P]**	3	†	IU
INFO 694	Graduate Thesis / Research	**[R]**	7	†	IU
INFO 790	Research Rotations	**[P] [R]**	8	n/a	IU
HCI 890	Dissertation Research	**[P] [R]**	5	n/a	IU
T 519	Human Factors of Interface Design		8	††	PU

Digital Media & Computer Graphics

COURSE#	COURSE TITLE	SIZE	NEW/REV	UNIVERSITY
N499	New Media Capstone Research Project	4	n/a	IU
N450	Usability Principles for New Media Interfaces	18	†	IU
N420	Multimedia Project Development	16	††	IU
N100	Introduction to Digital Media Principles	80	††	IU
N500	Foundations of Digital Arts Production	18	††	IU
I554	Special Study in Computer-Mediated Com	5	†	IU
T115	Introduction to Illustration	37	††	PU
T203	Technical Graphics	38	††	PU
T203	Publishing I: Page Layout and Design	30	††	PU
T103	Publishing II: Basic Techniques	35	††	PU
T111	Design for Visualization and Communication	120	††	PU
T256	Human Computer Interaction Theory and Design	15	††	PU

ADVISING / MENTORING IN THE BIOMEDICAL AND HEALTH SCIENCES

Ph.D. Dissertation and/or Research Advising

STUDENTS	DATES	DEPT / SCHOOL	RESEARCH AREA OR DISSERTATION
Maryam Zolnoori	2015-17	U of Wisconsin Dept. of Informatics	Health Informatics: Exploring drug side-effects for depression in online healthcare communities: Examination of health & social media
Eric Vorm	2015-16	IU-SoIC / HCC	Health Information Technology
Luiz Cavalcanti	2015-16	IU-SoIC / HCC	Health Information Technology
Abdullah Almojaibel	2014-16	Health/Rehab Sci.	TeleRespiratory healthcare for acceptance scale development
Masoud Hosseini	2014-16	Health Inform., SoIC	Consolidating CCDs from multiple data: HL7 – Medical Record System sources
Yamini Karanam	2013-16	IU-SoIC / HCC	Health Information Technology
Preethi Srinivas	2012-16	IU-SoIC / HCC	Tools for Managing Notification Interruptions in the ICU
Harry Tunnel	2011-16	IU-SoIC / HCC	Promoting common ground in a clinical setting: A study of secondary users
Crystal Boston-Clay	2011-16	IU-SoIC / HCC / HI	Assessing health information tech. acceptance

MS Health Informatics Students

STUDENTS	DATES	SCHOOL	THESIS RESEARCH AREA
Kate Greenhill	2016-18	UIC	Visualizing Disease: An Aid to Physician-Family Communication
Titilola Akinyemi	2019-Fall	UIC	Opportunities & Challenges of Patient-Wearable Technology in In/Out-Patient Care
Amanda Bagus	2019-Fall	UIC	Mobile Health Applications for the Informal Caregiver: Impact on Elderly Treatment
Gregory Briddick	2019-Fall	UIC	Leveraging administrative data for identification of patients with possible Sepsis…
Ravin Ellis	2019-Fall	UIC	Improving Patient Care Using EMR systems in community pharmacies
Chris Hannon	2019-Fall	UIC	Alert Fatigue Related to Smart Infusion Pumps within the Inpatient Setting…
Haily Hopkins	2019-Fall	UIC	How telemedicine reduces hospitalizations in COPD patients
Annam Itteera	2019-Fall	UIC	The Impact of Mobile Health Monitoring on Diabetes Management
Lauren Krienert	2019-Fall	UIC	Consumer Health Informatics Tools to Improve Health Literacy
Vladana Nikolic	2019-Fall	UIC	Consumer Use of Mobile Healthcare Tech. for Cardiovascular Disease Mngnt…
Ambrish Sharma	2019-Fall	UIC	Using Quick Response Code Technology for Patient ID for Appointment Check-In…
Kirsten Staley	2019-Fall	UIC	Impacts of Anesthesia Biomedical Monitor. Devices on Patient Safety in an Integrated…
Jessica Watkin	2019-Fall	UIC	Telemedicine and Big Data Analytics for better Chronic Disease Mngnt in the US
Will Weider	2019-Fall	UIC	Patient Safety Event Management and Human Factors IT
Vicki Wortmann	2019-Fall	UIC	Efficacy of Smartphone Apps for Mental Health

ADVISING / MENTORING IN HUMAN CENTERED COMPUTING

Ph.D. Dissertation and/or Research Advising

STUDENTS	DATES	DEPT /SCHOOL / RESEARCH AREA OR DISSERTATION	
Christine Newlon	2010-16	IU-SoIC / HCC	Building the mega-collaboration interface
Afarin Pirzadeh	2010-12	HCC/HCI/SoIC	Emotion Communication
Jennifer Palilonis	2010-12	HCC/HCI/SoIC	Electronic Reading Systems
Rohani Romisa	2010-11	HCC/HCI/SoIC	Aural Browsing
Robert Morse	2008-10	HCC/HCI/SoIC	Visual Analytics

Thesis and/or Capstone Mentoring & Advising

Indiana University: HCI / Informatics Students

NAME	YEAR	CAPSTONE PROJECT TITLE
Bhuma Manjula	2016-17	Design of a Hypoglycemic Data Visualization mHealth System
Juan Campos	2015-16	Business Management System: A SalesForce App
Asa Blevins	"	"
Kelly Chan	"	"

Lindsay Kaser	“	“
Abdulaziz lderhami	2015-16	An Easter Seals System: An App for People w/ Disabilities
Dhanashree Bhat	“	“
Anwar Eaton	“	“
Alex Gountras	“	“
Lawrence Moore	2015-16	A Health-X App for Providers and Members
Soumya Dash	“	“
Natalie Hall	“	“
Dushyant Shrikhande	“	“
Gaurav Mallikarjuna	2015-16	An AV-Lab Adventure: A University Tour-Guide App
Shilpa Pachhapurkar	“	“
Erin Sheets	“	“
Manisha Yogan	“	“
Julie Elbin	2015-16	GiveHalvsies: A Crowd-Sourcing App
Deb Strzeszkowski	“	“
Kunal Bodke	“	“
Poorva Kulkarni	“	“
Xinxin He	2014-15	Notes Hub
Michael J. Frontz	2014-15	Art Fair Tracker-Application Management Sys. for Artists
Dennis Leonardo	2014-15	Patchwork: Collaborative Learning Hub
Daoyi Wang	2014-15	Food Solution-Food Justice
Ashleigh Young	2014-15	Better Days: Mental Health Application
Bunmi Akintomide	2014-15	Achat: Your Fashion Shopping Buddy
Yachung Cheng	2014-15	Help2Buy - A Sharing Economy Service
Meng Zhang	2014-15	Mappy - A collaborative navigation application
Ryan Ahmed	2014-15	HealthTrack – A Health Mobile App
Shivin Saxena	2014-15	CulAmi: Smart Kitchen UX using Touchless Interaction
Malvika Bansal	2014-15	Prox - Rapid Information Propagation using Beacons
Christopher Lee	2008-09	Mask Commun. of Afr.-Amer: Interpretive Interactions Online
Kevin Szerszen	2007-08	Testing the Validity of Skill Transference in Video Games
Diego Ramirez	2007-09	Paper-in-Screen Prototyping: An Agile Tech to Anticipate…
Amy Hu	2007-08	Prosodic Alignment in Human Computer Dialogues
Avery Nelson	2006-09	Info. Computerization: Investigating the Prod. Paradox
Keith Rodewald	2003-04	TrendVendor: An E-Commerce Web App Employing Data…
Tim Altom	2004-06	A Comparison of SPRT and Trad. Approaches for Determining…
Melynda Buher	2004-06	Toward a Theory for Online Instructional Design: Eval.…
Maira Parveen	2004-06	Investigating Children's Online Learn. Environment
Chatree Campiranon	2004-05	Web-Based Management for Email Overload
Ming-Liang Liu	2004-05	Assessing User Performance of Online Digital Photography Library
Victor Tanner	2005-06	Enhancing Student Perform. for 3D Modeling Software Learners
Edgardo Luzcando	2005-08	Design of Software Develop. Environments for Software Designers
Stuart Ough	2005-06	Affect Index: Testing the Validity of Affective States in Music
Young-Joo Cha	2005-07	Identifying cross-cultural differences of emoticons in computer…
Christine Newlon	2005-07	Exploring Support for Mega-Team Computer-Mediated Collab.
Piyanaat Taksaphan	2005-06	Strains on Human Short-Term Memory and Info Orientation…
Kristina Ledford	2005-09	The Effect of Telepresence on Flow Exper. within Non-Gaming…
Dipankar Roychow	2005-06	Enhancing Web Browser Search Histories: Design & Analysis…
Heather Wiltse	2006-07	Everyday Use of Tech-Mediated Commun.: A Social Shaping Per…
Keith Beatty	2006-07	External cognition and problem solving: A comparison of desktop..
Mark Tarrant	2006-07	Perceived Visual Aesthetics of emotionally Evocative Homepages

MS Graduate Students — General HCI Program Mentoring / Advising

NAME	ROLE	PERIOD	GRAD. SEM.
Vinay Kashyap	Primary Advisor	2011-13	Spring
John Wheeler	Primary Advisor	2010-11	Spring
David Craske	Secondary Advisor	2010-12	Spring
Rupa Chatterji	Primary Advisor	2010-12	Spring
Christopher Lee	Primary Advisor	2009-10	Spring
Jon Duke	Secondary Advisor	2009-10	Spring
Joseph Coram	Secondary Advisor	2009-10	Fall
Dennis Mann	Secondary Advisor	2009-11	Spring
Diego F. Pulido	Secondary Advisor	2009-10	Spring
James Lyst	Secondary Advisor	2009-12	Spring
Kristen Ledford	Primary Advisor	2009-12	Sum.
Michael Downey	Primary Advisor	2009-12	Spring
Wade Mitchell	Secondary Advisor	2009-12	Spring
Edgardo Luzcando	Primary Advisor	2008-09	Spring
Howard Ho	Secondary Advisor	2008-11	Spring
Adam Burton	Secondary Advisor	2008-10	Spring
Avery Nelson	Primary Advisor	2008-10	Spring
Sandosh Vasudevan	Secondary Advisor	2008-10	Spring
Timothy Whalen	Secondary Advisor	2008-10	Fall
Kevin Szerszen	Secondary Advisor	2007-10	Fall
Christine Newlon	Secondary Advisor	2006-08	Spring
Heather Wiltse	Primary Advisor	2006-07	Spring
Keith Beatty	Primary Advisor	2006-08	Spring
Mark Tarrant	Primary Advisor	2006-07	Spring
Rob Elliott	Primary Advisor	2006-08	Spring
Stuart Ough	Secondary Advisor	2006-07	Spring
Dip Roychowdhury	Primary Advisor	2005-06	Spring
Maira Parveen	Primary Advisor	2005-06	Spring
Melynda Buher	Primary Advisor	2005-07	Spring
Mitchell Owen	Primary Advisor	2005-07	Spring
Piyanaat Taksaphan	Secondary Advisor	2005-06	Spring
Robert Green	Secondary Advisor	2005-06	Spring
Tim Altom	Primary Advisor	2005-06	Spring
Victor Tanner	Primary Advisor	2005-06	Spring
Young-Joo Cha	Primary Advisor	2005-07	Spring
Chatree Campiranon	Primary Advisor	2004-05	Spring
Ming-Liang Liu	Primary Advisor	2004-05	Spring
Tim Whalen	Secondary Advisor	2004-07	Spring
Keith Rodewald	Primary Advisor	2003-04	Spring

Master's and Ph.D. Students — Special Projects Advising, with Project/Thesis Titles

STUDENT	DATES	THESIS/PROJECT TITLE	STATUS
Tim Altom	2004-05	Using 3D Landscapes to Navigate Filespaces	MS
Melynda Buher	2004-05	Using 3D Landscapes to Navigate Filespaces	MS
Michael Downey	2004-05	Using 3D Landscapes to Navigate Filespaces	MS
Edgardo Luzcando	2004-05	Psychometric System Design for Online Data Capture	MS
Saima Zaidi	2005-06	MedPliance: Medication Compliance Device Design	Ph.D.
Gary Cravens	2005-06	MedPliance: Medication Compliance Device Design	Ph.D.

Curricula and Program Development (*1998—2016*)

Indiana University—Indianapolis, *Luddy School of Informatics, Computing, and Engineering*

Human-Computer Interaction Graduate Programs

As founding Director of the HCI Program (2003-13), programmatic work included curriculum development and a full plan of study for each of the HCI graduate and undergraduate programs, noted below:

- Master of Science (36-cr.) HCI Graduate Program (2002—Present)
- Graduate Certificate (15-cr.) HCI Graduate Program (2007—Present)
- Ph.D. (90-cr.) HCI Track: Informatics & Computing (2008—Present)
- Undergrad Certif. (15-cr.) HCI Undergraduate Program (2010—Present)

Media Arts and Science Programs, IUSoIC, IUPUI

As Director of MAS Programs (2007–2009), work included curriculum development:

- Bachelor of Science (120-cr.) Media Arts and Science (2001—2002)
- Graduate Certificate (15-cr.) MAS Graduate program (2008—2009)

Research Team Mentoring: 2013—Present

(PhD, MS, BS Students and Visiting Scholars)

Student Name	Level	Discipline	Core Contribution to Team	Citizenship
2024 – at UC				
George Nimoh	PhD	Nursing PhD	Health/clinical information experience	Kenya
2020-2024 – at UK				
Saira Soroya	Visiting Scholar	Health Information & Library Science	Health information/library science, Health literacy, research methods, statistical analysis	Pakistan
Salman Naeem	Visiting Scholar	Health Information & Library Science	Health information/library science, Health literacy, research methods, statistical analysis	Pakistan
Sarah Pava	PhD	Biomed. Engineer.	Game design, HCI, product development	Columbia
Sheridan Schrader	BS	Health Sciences	Health sciences, research methods	USA
Max Burch	BS	Health Sciences	Health sciences, research methods	USA
Sabrina Piekarski	BS	Health Sciences	Health sciences, research methods	USA
Gabriella Tenuta	BS	Health Sciences.	Health sciences, research methods	USA
Samantha Lenox	BS	Health Sciences.	Health sciences, research methods	USA
2016-2020 – at UIC				
Mary Bloodworth	PhD	Health Informatics	HCI, product design, data collection, pubs	USA
Hoang Minh	PhD	Computer Science	HCI, product development	Viet Nam
Ilyasse Belkacem	PhD	Computer Science	HCI, product develop./data collection, pubs	Algeria
Dani Bergey	MS	Biomed. Visualiz.	HCI, prototype design	USA
Alexandria Dirico	BS	Psychology/Honors	Usability testing, paper editing	USA
Haleh Vatani	PhD	Health Informatics	Health informatics, product innovation & testing	Canada
Emma Chai	MS	Biomed. Visualiz.	HCI, product development	China
Kate Greenhill	MS	Biomed. Visualiz.	Interaction Design and Prototype Develop	USA
Manjula Bhuma	MS	Health Informatics	Product design, data collection and Analysis	India
Alexandria Dirico	BS	Psychology	Usability testing, paper editing	USA
Maryam Zolnoori	PhD	Health Informatics	Data collection, analysis, and pub creation	Iran
Kate Greenhill	MS	Biomed. Visualiz.	Interaction Design and Prototype Develop	USA
Manjula Bhuma	MS	Health Informatics	Product design, data collection and Analysis	India
2013-16 – at IU				
Yamini Karanam	PhD	HCI	HCI/prototyping, data collection/analysis, pubs	India
Preethi Srinavas	PhD	HCI	HCI/prototyping, data collection/analysis, pubs	India
Luiz Cavalcanti	PhD	HCI	HCI, data collection/analysis, pubs	Brazil
Deb Strzeszkowski	MS	HCI	HCI, usability testing, data collection/analysis	USA
Kate Ansah-Koi	MS	HCI	HCI, usability testing, data collection/analysis	Ghana
Thomas Andrew	MS	HCI	Usability testing, paper editing	USA
Nomaan Ahgharian	MS	HCI	HCI, product develop. usability, data collection	USA
Coltin Metzger	MS	Media Arts	Usability testing, paper editing	USA
Mikaylah Gross	BS	Business	Usability testing, data collection/analysis, pubs	USA
Yamini Karanam	PhD	HCI	HCI/prototyping, data collection/analysis, pubs	India
Preethi Srinavas	PhD	HCI	HCI/prototyping, data collection/analysis, pubs	India
Luiz Cavalcanti	PhD	HCI	HCI, data collection/analysis, pubs	Brazil
Milka Trajkova	MS	HCI	HCI, usability testing, data collection/analysis	USA
Jamee Malan	MS	Nursing	Data collection/analysis	USA
Ryan Ahmed	MS	HCI	HCI, usability testing, data collection/analysis	India
Soumya Dash	MS	HCI	HCI, usability testing, data collection/analysis	India
Yamini Karanam	PhD	HCI	HCI/prototyping, data collection/analysis, pubs	India
Preethi Srinavas	PhD	HCI	HCI/prototyping, data collection/analysis, pubs	India
Milka Trajkova	MS	HCI	HCI, usability testing, data collection/analysis	USA
Soumya Dash	MS	HCI	HCI, prototyping, usability testing	India
Olesia Koval	MS	HCI	HCI, usability testing, data collection/analysis	Russia
Rebecca Finch	MS	Media Arts	Usability testing, data collection/analysis	USA

SERVICE

University Service

Departmental and College/School Committee Work

YEARS	ROLE	COMMITTEE NAME / SCHOOL / UNIVERSITY
2021—23	Member	Departmental Faculty Search Committee, College of Health Sciences, UK
2020—21	Member	Dean's Executive Committee, College of Health Sciences, UK
2020—	Member	Institute of Biomedical Informatics Steering Committee, UK
2016—19	Member	PhD Oversight Committee, UIC
2016—19	Member	Academic Affairs Committee, UIC
2015—19	Chair	Program Director's Committee, UIC
2015—19	Member	Dean's Department Head Committee, UIC
2015—16	Chair	Colloquia Committee, SoIC, IUPUI
2015—16	Chair	HCC Faculty Search and Screen Committee, SoIC, IUPUI
2014—16	Member	UG Informatics Curriculum committee, SoIC, IUPUI
2014—16	Member	HCC Faculty Search and Screen Committee, SoIC, IUPUI
2013—16	Member	HCC Faculty Search and Screen Committee, SoIC, IUPUI
2014—16	Member	Council of Undergraduate Committee–SoIC Curric. Develop.
2009—13	Chair	Council of Undergraduate Committee–SoIC Curric. Develop.
2009—13	Chair	Council of Undergraduate Committee – Exec Committee Chair
2008—09	Chair	Media Arts New Faculty Search and Screen Committee, SOIC, IUPUI
2008—09	Chair	HCI New Faculty Search and Screen Committee, SOIC, IUPUI
2008—09	Member	School Website Re—Design and Deploy Committee, SOIC, IUPUI
2008—09	Member	Graduate Programs Shaping Committee, SOIC, IUPUI
2008—09	Chair	Media Arts and Science Advisory Board, SOIC, IUPUI
2007—09	Chair	Graduate Curriculum Comm., Media Arts and Science, SoIC, IUPUI
2007—09	Chair	Graduate School Strategic Planning Comm., SOIC, IUPUI / IUB
2007—09	Chair	Undergrad. Curriculum Comm., Media Arts and Science, SoIC, IUPUI
2007—09	Chair	Media Arts and Science Advisory Board, SOIC, IUPUI
2007—08	Chair	Promotion and Tenure Committee, SOIC, IUPUI
2006—07	Member	New Media Curriculum Assessment Committee, IU SOIC, IUPUI
2003—04	Member	Faculty Search Committee, IU SOIC, IUPUI
2003—05	Member	Graduate Program Committee, IU SOIC, IUPUI
2002—03	Member	Curriculum Committee, Indiana University (IU) SOIC, IUPUI
2002—03	Member	Faculty Search Committee, IU SOIC, IUPUI
2002—03	Member	Library Review Committee, IU SOIC, IUPUI
2002—03	Member	Informatics Online Development Committee, IU SOIC, IUPUI
2002—03	Member	Graduate Program Committee, IU SOIC, IUPUI
2001—02	Member	Curriculum Committee, Chair, New Media, IU SOIC, IUPUI
2001—02	Member	Faculty Search Committee, New Media, IU SOIC, IUPUI
2001—02	Member	Technology Committee, New Media, IU SOIC, IUPUI
2001—02	Member	Undergraduate Program Committee, SOIC, IU
2000—01	Member	Science and Media Committee, School of Food Sciences, Purdue U.
1998—01	Member	Marketing and Com Comm, Dept. of Computer Graphics, Purdue U.
1998—01	Member	Faculty Search Committee, Dept. of Computer Graphics, Purdue U.
1998—01	Member	School of Technology International Programs Committee, Purdue U.

University Committees and Boards

2024—25 University Cincinnati Cancer Center Grant Committee
2015—16 University Faculty Affairs, IUPUI
2008—09 Plater Senior Advisory Board (Focus: RISE Imitative)
2008—13 Solution Center Executive Board – IUPUI – Indianapolis Bus. Connection
2007—09 Executive Board Member (founding member), TASI –Trans. Active Safety Institute School of Engineering
2007—08 Graduate Affairs Committee, IUPUI
2004—05 University-Wide Technology Committee, IUPUI
2004—05 Fulbright Representative, IUPUI Campus
2004— Grant Proposal Review Committee, IUPUI Office for Professional Dev.
2003—04 IUPUI Internal Grants Proposal Review Committee, Chair, IUPUI

University Administrative / Leadership Councils and Committees

2012—14 Vice Chancellor's Leadership Strategic Team for the American Council on Education's (ACE); Internationalization Laboratory, Sub-Committee on Curriculum Internationalization
2008—13 Chancellor's Academic Dean's Council
2008—13 Vice Chancellor's Academic Dean's Council
2008—13 Informatics and Computing Dean's Leadership Council
2008—13 Information Technology Governance and Service Committee

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Professional Service

Conference Administrative Service

2019-20 Human Factors in Health, 2020 HFES Symposium, Toronto, Canada, **Co-Chair**
Track: Mobile Health
Co-Chair: Plinio Morita, Ph.D., School of Public Health & Health Systems, U of Waterloo

2018 Digital Transformation & Global Society 2018 Conf., St. Petersburg, Russia, **Co-Chair**
Session: Advances in Cyberpsychology
Co-Chair: Alexander Voiskounsky, Moscow State University, College of Psychology

2011 HCI International Conference 2011, Orlando, FL, **Co-Chair**
Session Title: Communication Issues and the User Experience: Branding, Content Design and Semiotics;
Thematic Area: Design, User Experience, and Usability;
Session Co-Chairs: Anthony Faiola, Indiana University SoIC, HCI Program; Davide Bolchini, Indiana University School of SoIC, HCI Program

2011 HCI International Conference 2011, Orlando, FL, **Co-Chair**
Session Title: Biomedical and Health Visualization HCI Design;
Thematic Area: Ergonomics and Health Aspects of Work with Computers;
Session Co-Chairs: Anthony Faiola, Indiana University SoIC, HCI Program; Taowei David Wang, University of Maryland, Department of Computer Science, HCI Lab

2011 HCI International Conference 2011, Orlando, FL, **Co-Chair**
Session Title: Social Spaces for Virtual Gameplay and Learning – New Inquiries;
Thematic Area: Online Communities and Social Computing;
Session Co-Chairs: Anthony Faiola, Indiana University SoIC, HCI Program; Alexander Voiskounsky, Moscow State University, Department of Psychology, M.IN.D. Lab

2009 HCI International Conference 2009, San Diego, CA, **Co-Chair**
Session Title: Usability for Bio and Health Informatics;
Thematic Area: Ergonomics and Health Aspects of Work with Computers;
Session Co-Chairs: Anthony Faiola, Indiana University SoIC, HCI Program; Davide Bolchini, Indiana University SoIC, HCI Program

2009 HCI International Conference 2009, San Diego, CA, **Co-Chair**
Session Title: Online Gaming and Social Computing;
Thematic Area: Online Communities and Social Computing;
Session Co-Chairs: Anthony Faiola, Indiana University SoIC, HCI Program; Alexander Voiskounsky, Moscow State University, Department of Psychology, M.IN.D. Lab

2009 13th Inter. Conf. on Information Visualization, Barcelona, Spain, **Symposium Chair**
Symposium Title: Visualization and Interaction Design;
Session Co-Chairs: Anthony Faiola, Indiana University SoIC, Indianapolis; Dennis Groth, Indiana University SoIC, Bloomington

2008 14th Inter. Conf. on Information Visualization, London, UK, **Symposium Chair**
Symposium Title: Visualization and Interaction Design;
Session Co-Chairs: Anthony Faiola, Indiana University SoIC, Indianapolis; Dennis Groth, Indiana University SoIC, Bloomington, IN

2007 13th Inter. Conf. on Information Visualization, London, UK, **Symposium Chair**
Human-Computer Interaction Symposium;
Symposium Title: Visualization and Interaction Design;
Session Co-Chairs: Anthony Faiola, Indiana University SoIC, Indianapolis; Dennis Groth, Indiana University SoIC, Bloomington

2006 CATac'06 Cultural Attitudes Towards Tech/Comm., Tartu, Estonia, **Session Chair**
Session Title: Politics, Media, and Technologies;
Session Chair: Anthony Faiola, Indiana University SoIC, Indianapolis

2006 12th Inter. Conf. on Information Visualization, London, UK, **Symposium Chair**
Human-Computer Interaction Symposium;
Symposium Title: Visualization and Interaction Design;
Session Co-C hairs: Anthony Faiola, Indiana University SoIC, Indianapolis; Dennis Groth, Indiana University SoIC, Bloomington

2005 11th Inter. Conf. on Information Visualization, London, UK, **Symposium Chair**
Symposium Title: Visualization and Interaction Design;
Session Co-Chairs: Anthony Faiola, Indiana University SoIC, Indianapolis; Dennis Groth, Indiana University SoIC, Bloomington

2005 HCI International Conference 2005, Las Vegas, Nevada, **Co-Chair**
Session Title: HCI of Information Visualization: Research and Education in 2/3-Dimensional Domains;
Thematic Area: Human-Computer Interaction;
Session Chair: Anthony Faiola, Indiana University SoIC, HCI Program

2005 HCI International Conference 2005, Las Vegas, Nevada, **Co-Chair**
Session Title: Interaction Design Education and Research: Current and Future Trends;
Thematic Area: Human-Computer Interaction;
Session Chair: Anthony Faiola, Indiana University SoIC, HCI Program

2004 Humanizing Technology Colloquium, New Directions in the Humanities,

Tuscany, Italy, **Session Chair**
Colloquium Title: Human-Computer Interaction,
Communication, and Co-Existence: A Blueprint for Humanizing Technology, Anthony Faiola, Indiana University SoIC, HCI Program

2003 Human-Computer Interaction International Conference 2003,
Crete, Greece, **Session Chair**
Session Title: HCI Education—New Challenges, Shifts, and Issues;
Thematic Area: Human-Computer Interaction;
Session Chair: Anthony Faiola, Indiana University SoIC, HCI Program

Conference Program Committee

2011 SeGAH 2011: 1st International Conference on Serious Games and Applications for Health.
2011 DUXU 2011: Design, User Experience, and Usability, HCI International Conference, Orlando, FL.
2009 HCI Symposium, 13th Annual International Conference on Information Visualization, Barcelona, Spain.
2009 Active Safety Symposium, Program Member (Sponsor: TASI - Transportation Active Safety Institute and Department of Electrical Engineering, School of Engineering and Technology, IUPUI), Designated IEEE Conference.
2008 HCI Symposium, 12th Annual International Conference on Information Visualization, Zurich, Switzerland.
2008 LCEA'09 Symposium - Lansdown Centre for Electronic Arts (Program Committee Member), Middlesex University, Middlesex, England.
2008-9 IDC 2009 - The 8th International Conference on Interaction Design for Children - In cooperation with ACM-SIGCHI (Program Committee Member), Polytechnic Institute of Milano, Italy.
2007 HCI Symposium, 11th Annual International Conference on Information Visualization, Zurich, Switzerland.
2006 HCI Symposium, 10th Annual International Conference on Information Visualization, London, England.
2005 HCI Symposium, 9th Annual International Conference on Information Visualization, London, England.
2004 HCI Symposium, 8th Annual International Conference on Information Visualization, London, England.
2004 ACM SGICHI, Selection Committee, SIGCHI Distinguished Speakers List.

Conference Peer Reviewer (*Editor of some session papers*)th

2013 ACM CHI 2013: Computer Human Interaction: International Conference: One of a CHInd
2011 HCI International Conference 2011, Orlando, FL. Communication Issues and the User Experience: Branding, Content Design and Semiotics (Area: Design, User Exp., and Usability)
2011 HCI International Conference 2011, Orlando, FL. Social Spaces for Virtual Gameplay and Learning – New Inquiries (Thematic Area: Online Communities and Social Computing)
2009 HCI International Conference 2009, San Diego, CA. Online Gaming and Social Computing (Thematic Area: Online Communities and Social Computing)
2009 HCI Symposium (Co-Editor and Reviewer), 13th Annual International Conference on Information Visualization, Barcelona, Spain.
2009 LCEA'09 Symposium (Lansdown Centre for Electronic Arts) (Reviewer), Middlesex University, Middlesex, England
2008 HCI Symposium (Co-Editor and Reviewer), 12th Annual International Conference on Information Visualization, Zurich, Switzerland.

2007 Sixth Annual (ACM SIGCHI) Pre-ICIS HCI/MIS Workshop, Association for Information Systems, Montreal, Canada, Program Committee Member and Paper reviewer.
2007 HCI International Conference 2007, Beijing, China. Conference HCI Research in Culture-Driven Mediated Communication, Cognition and Recreation.
2007 HCI Symposium (Co-Editor and Reviewer), 11th Annual International Conference on Information Visualization, Zurich, Switzerland.
2007 HCI International Conference 2007, Beijing, China. Conference HCI Design Educational Research: Teaching Theories, Models, and Learning Outcomes.
2007 Human-Computer Interaction International Conference 2007, Beijing, China. Conference Human-Information Interaction Theories, Models, and Design Strategies.
2006 HCI Track of the 14th European Conference on Information Systems (ECIS). (Reviewer), Göteborg, Sweden. Organized by the IT University of Göteborg.
2006 Fifth Annual (ACM SIGCHI) Pre-ICIS HCI/MIS Workshop, Association for Information Systems, Milwaukee, Wisconsin, Program Committee Member.
2006 HCI Symposium (Co-Editor and Reviewer), 10th Annual International Conference on Information Visualization, London, England. Symposium Title: Visualization and Interaction Design.
2005 Fourth Annual (ACM SIGCHI) Pre-ICIS HCI/MIS Workshop, Association for Information Systems, Las Vegas, Program Committee Member.
2005 HCI Symposium (Editor and Reviewer), 9th Annual International Conference on Information Visualization, London, England.
2004 Third Annual (ACM SIGCHI) Pre-ICIS HCI/MIS Workshop, Association for Information Systems, Washington, D.C., Program Committee Member and Paper reviewer.
2004 HCI International Conference 2005, Las Vegas, Nevada. The Human-Computer Interaction of Information Visualization.
2004 HCI International Conference 2005, Las Vegas, Nevada. Interaction Design Education and Research.
2004 HCI Symposium (Editor and Reviewer), 8th Annual International Conference on Information Visualization, London, England.
2004 Humanizing Technology Colloquium, Tuscany, Italy. 2PndP International Conference on New Directions in the Humanities, Colloquium Title: Human-Computer Interaction, Communication, and Co-Existence: A Blueprint for Humanizing Technology.
2003 Space, Spatiality, and Technology Conference, Edinburgh, Scotland, Napier University School of Computing.
2003 HCI International '03, Parallel Session, HCI Education. Chief reviewer / editor of session papers.
2003 Second Annual (ACM SIGCHI) Pre-ICIS HCI/MIS Workshop, Association for Information Systems, Program Committee Member and Paper reviewer.

AWARDS

2016 AMIA 2016: American Medical Informatics Association, *Distinguished Reviewer Award*
2013 Dedicated Service Award, *for outstanding service as* Executive Associate Dean, Indiana University
2004 Who's Who among America's Teachers, Nominated Honor
2003 IU Board of Trustees Excellence in Teaching Award, Indianapolis, IN

RESEARCH STATEMENT

This research statement consists of two parts. Part one is a summary of my research, including three digital health technologies, a brief overview of the science, current projects, and future research. Part two provides a comprehensive overview of all funded project details according to their respective technologies, disease area, and study populations, along with project titles, funding sources, collaborators, etc.

SUMMARY

My research lies at the intersection of biomedical informatics and human-centered computing, where I leverage the medical sciences, social/cognitive sciences, human factors, and usability science to develop, test, and clinically study the effects of digital health solutions with targeted patient populations and clinicians. My formative education, coupled with acquired cross-disciplinary knowledge and research methods, has enabled me to map a progressive line of inquiry with increasing focus and innovation.

Because of the scope of my interdisciplinary background, it is important to briefly clarify my transition to the medical and health sciences. After returning to graduate school to study industrial design, my research interests shifted to the field of human-centered computing and the challenges of complex health systems and human behavior when engaging mobile health applications, biosensor devices, and virtual reality (VR) platforms. Since 2006, the aim of my translational research has been to generate new knowledge and innovative digital health interventions that have a direct impact on the therapeutic treatment of patients with a range of non-communicable diseases.

In sum, my current research falls within the broader domains of **(1) Digital Health Solutions and (2) Health Behavior, with considerable emphasis on the former.**

DIGITAL HEALTH

Digital health, as my primary research focus, includes three emerging health information technologies (HIT) with their respective patient populations and interdisciplinary methods. This research includes the assembling of and collaboration with physicians, nurses, biomedical and mechanical engineers, biochemists, biomedical informaticians, and medical researchers who share my passion and focus on several diseases and health conditions. The three HITs include: Virtual/Mixed Reality (VRx) Therapeutic Medicine, Diagnostic Biosensors, and Mobile Health (mHealth).

HIT #1: VRx Therapeutic Medicine

Overview: The focus of my research that employs immersive VR technology is referred to as VRx therapeutic medicine and is currently revolutionizing non-invasive medicine, as observed in the leading universities nationwide.[12,13,14,15,16,17,18,19] My application of VRx is related to investigating the efficacy of a novel immersive VR training platform to treat mild cognitive impairment (MCI) of cancer (brain and breast), dementia, and stroke patients. The aim is to mitigate cognitive dysfunction and improve synaptic plasticity by increasing sensory engagement through movement/embedded selective attention training exercises. Patients are directed to focus and filter visual/auditory information as they navigate through a 3D immersive game-centered environment.

VR Neuroscience: There is increasing evidence in the neuroscience literature that VR has the potential of noninvasively improving cognitive function. Research has demonstrated that by mitigating downstream cognitive impairment, patients had improved mental health and overall quality of life. For example, studies show that brain functional networks are disrupted in post-treatment breast cancer patients.[20,21] In this pathophysiological framework, acute and chronic cognitive impairment result from widespread neural network dysfunction and disruption, cortical network dysconnectivity, and neurotransmitter imbalances associated with widespread brain injury, such as neurotoxicity. Affected areas include all cerebral lobes as well as subcortical areas, which researchers suggest impacts the

patients' large-scale distributed neuro-networks.[22,23,24,25,26,27,28] Hence, MCI may be connected through aberrations in brain functional networks (i.e., the default mode network, salience network, and frontoparietal network). In sum, mental health outcomes include reduced alertness and memory loss and pronounced inattention resulting in diffuse cognitive deficits.

Despite the high rates of cognitive disability, a majority of breast cancer survivors do not receive effective post-treatment brain care.[29,30] Particularly, non-invasive interventions delivered early in post-treatment to cancer patients may rapidly engage impaired brain neuro-circuitry and promote arousal and attention, providing a novel approach to mitigating MCI. VRx, as a new form of digital therapeutic medicine, has the potential for post-treatment cognitive therapy due to its direct and deep interaction with sensory and attentional networks.[31,32,33,34,35,36,37] VRx produces cognitive stimuli that engage the frontoparietal network (involved in visuospatial processing) and the salience network necessary for selective attention (SA).[38]

We posit that the synergistic effects of VR immersion and embedded selection attention exercises within our current VRx platform have the potential to activate the locus coeruleus-norepinephrine (LC-NE) system while reducing activity within the default mode network (normally downregulated during tasks requiring focus).[39,40] As LC-NE is a powerful effect on the regulation of multiple memory systems, the hippocampus is responsible for tagging memories with respect to the complexity of time and place.[41] Moreover, the hippocampus functions as a reciprocal connection to the rest of the brain through multiple pathways to the neocortex (frontal cortex), which also effects the basal ganglia, thalamus, and hypothalamus. As such, the hippocampus is only one of many memory systems, but one with a special role in storing long-term memories that are contextually meaningful in time and place.[42]

This is especially relevant because the stimulation of time and place neurons (via VRx) that track time and spatial locations, support the creation of cognitive mapping of patient experiences for life-navigation and the recall of personal events. Considered together, immersive VRx training may aid in the stimulation and organization of events that form episodic memory,[43,44,45,46] particularly for Alzheimer's patients, where the hippocampus is one of the first brain regions affected.

While immersive VRx selection attention exercises are intended to affect the cerebrum (responsible for executive function, attention, memory, mood, and reasoning), the hippocampus and medial entorhinal cortex are also targeted for increased spatial learning and memory,[47] a degree of stimulus not seen when interacting with a tablet or computer screen. As such, we argue that VRx as a new form of non-invasive immersive cognitive stimuli could enhance neuropathways and improve memory processes, resulting in increased neurotransmission and improved cognitive plasticity.

VRx—Phase One: The phase one development of our current VRx Cognitive Therapy Platform (built 2021-24) is referred to as: Virtual Reality—Cognitive Rehabilitation Training (**VR-CRT**). As suggested, VR-CRT brings scalable innovation for adult cancer, dementia, and stroke patients with MCI. The VR-CRT platform was designed with input from a multidisciplinary team of experts in dementia, physical therapy, neuro-oncology, communication disorders, human-centered computing, and VR game design/programming. Regarding the scalability of VRx, digital solutions for healthcare therapies have recently been approved by the FDA and are now billable items, i.e., reimbursable as health therapies through Medicare/Medicaid.[48] See the Appendix for details.

Due to VR-CRT's ability to engage sensory processing, visuospatial memory, motor behavior, and attentional networks,[49,50,51,52,53,54,55] it has considerable advantages over traditional computerized cognitive training programs. The VRx platform includes an immersive 3D VR environment with 81 embedded attention exercises, offering a unique mechanism of neurotransmitter stimulation. VR-CRT is a scenario goal-driven (game) framework that rewards patients with points and feedback at the end of each module to promote engagement and incentivize use. Backend automated game score tracking encourages aspirational behavior and goal setting with each module completion.

VRx Studies: Outcomes from our recent preliminary one-arm pilot study yielded a small dataset showing a consistent mean improvement in cognitive performance of neuro-oncology (post-treatment) patients after four weeks of daily VR-CRT dosing. Our baseline testing included the Hopkins Verbal Learning Test, Controlled Oral Word Association test, and Trail Making A-B. We observed the

greatest improvement with the Controlled Oral Word test with a 40.41% improvement, suggesting increased verbal fluency, executive function, broader cognitive plasticity, and high-order executive abilities. We posit that cognitive gains may be attributed to the VR-CRT training exercises that placed a constant burden on retrieval required for executive control from selective attention switching or cognitive shifting which involves conscious change in attention. Neuro-oncology patients were recruited from the Markey Cancer Center, University of Kentucky.

Our follow-up study with 30 neuro-oncology patients will tentatively begin in December 2025 through Spring 2026, at the University of Cincinnati Cancer Center (UCCC). This is an internally UCCC funded study in collaboration with colleagues from neuro-oncology, neurology, and the UC Neuroscience Institute. We also have an American Cancer Society grant pending for a study with breast cancer survivors with MCI, tentatively scheduled for Spring/Summer 2026.

Currently, I am collaborating with my colleagues from the Indiana University School of Medicine in an (internally funded) feasibility and efficacy pilot study with ICU delirium patients with MCI, which we hope will provide preliminary data for an NIH/NIA R01 grant proposal. We have a large, well-trained team in place at IU to execute this research. I also have established a collaboration with colleagues in Rome, Italy, at Sapienza University, for a VRx study slated for winter-spring (2025-26). In this research, we will study the effects of VR-CRT with stroke patients with MCI, which will include the use of a mobile EEG system to collect data during cognitive training sessions. We will observe and record variations in brain activity in real-time as patients respond to cognitive tasks and other stimuli from within the various geographic locations in the immersive VR environment. This will allow us to more accurately identify the coordinates of cognitive stimuli, load, and emotional responses for future, better targeted, stimuli.

Future Research—AI-Powered VR-CRT–Phase 2: Future research includes a five-year strategic plan based on current funding lines. AI-powered VR-CRT (ai-VR-CRT) will leverage artificial intelligence to enhance the cognitive rehabilitation experience for patients with MCI. Phase two will transition from a simple VR platform with back-end time/action tracking to an AI enhanced training system that challenges player cognition with greater predictive accuracy. ai-VR-CRT holds the potential for greater cognitive stimuli and frontoparietal network engagement. Integration of AI functionality is critical for producing a more intelligent and efficacious approach to MCI therapy.

ai-VR-CRT phase two development is currently on the way, which includes three AI algorithms that allow greater precision in data analysis, real-time player modulation, and tracking of game difficulty and performance, thereby providing increased adaptability for each patient's personalized progress. AI modeling techniques will be used to challenge the patient to increase their use of both short-term memory and other executive functions. The system will track/measure patient navigation and interactions (with spaces, objects, and avatars), while anticipating future reactions in real-time.

In addition to leveraging AI, we plan to employ greater knowledge of game theory, statistics, and behavioral theory to better predict individual action and measure patient cognitive health based on movement and reaction time, eye-hand coordination, and accuracy of exercise problem solving. **ai-VR-CRT** will employ three AI models: Player Experience Modelling (**PEM**), Non-Playing Character modelling (**NPC**), and Natural Language Processing (**NLP**). See details in footnote.[56] Finally, a recently formed alliance with the largest funded AI research lab at UC will allow us to create another level of therapeutic efficacy for ai-VR-CRT with future studies.

HIT #2: Diagnostic Nano-Biosensors

Overview: My team's research with biosensors includes the use of volatile organic compound (VOC) biomarkers and nano-sensor integration, in conjunction with handheld smart sensor systems for accurate and noninvasive detection. Current study populations for this research include patients with prostate cancer and cystic fibrosis, with prior related work with type 1 diabetes (hypoglycemia) patients.[57]

Current Research: This research seeks to determine whether existing VOC detection technology coupled with biometric readouts is sufficiently robust and sensitive to diagnose a multiplicity of

diseases by scent. That is, the research seeks to emulate canine disease detection[58,59,60] in a robust and standardized platform that will first be optimized for disease detection accuracy and then be optimized for portability, cost, and speed. Canines detect diseases such as malaria on skin because diseases induce dysregulations of metabolic pathways leading to changes in metabolic byproducts, including VOCs[61] and changes in biometric data (e.g. heart rate, blood pressure). This research builds on our existing canine-inspired nanosensor technology (funded via NSF 2015-19) that uses VOC biomarkers and smart sensors to detect hypoglycemia from human breath. Our team identified a VOC signature for hypoglycemia[62] in breath, developed selective and sensitive sensors for functional groups associated with this VOC signature,[63,64,65] incorporated the sensors into a prototype array, and developed a smartphone app to deliver the results to end users[66].

Our current clinical applications are in two funded projects: **First**, our team has optimized collection and analysis of mouse urine in minute quantities (50 μL)[67,68,69,70] as well as human urine for prostate cancer and remote breath collection for COVID-19. VOCs emanating from urine will support screening for patients diagnosed with prostate cancer and will result in a portable GC-MS system to screen and detect prostate cancer in clinical settings and within a patient's home. **Second**, a handheld smart sensor system (integrated with machine learning algorithms) will accurately and noninvasively detect pulmonary exacerbations (PEx) in cystic fibrosis (CF) patients at point-of-care through rapid VOC detection. In both projects, we coordinate with our investigators to build data-secure, human-centered, and usability tested interfaces for portable sensors and delivery devices, which includes the translation of biosensor data into usable real-world diagnostics.

HIT #3: mHealth

Overview: My work in mHealth includes the design, development, testing, and implementation of mHealth applications, web portal dashboards, and backend databases to deliver community-focused, patient/caregiver-centered cancer care services. Current study populations for this research include underserved families of cancer patients and cancer patients to improve timely access to a broad range of services and healthcare, besides basic treatment, e.g., chemotherapy. Current and recently completed research studies includes two projects:

Project #1: This clinical study addresses the mental health disparities of families of cancer patients from rural Kentucky by investigating the efficacy of a newly developed mHealth platform (FamCare+) to reduce anxiety and depression of cancer patient family members by connecting families at home with clinicians at the bedside. The process included increased communication and information flow from the bedside (e.g., ICU, cancer treatment, hospice, etc.) to next-of-kin. FamCare+ provides real-time patient vitals and wellness updates, media tools (texting/video), and convenient access to social/mental health counseling services. [71,72,73] The FamCare+ project began six years ago, passing through multiple iterations of prototyping and testing. A paper with our findings is currently under review. (Funding: Markey Cancer Center Community Partnership Planning Grant).[74]

Project #2: The goal of this recently funded project, Comprehensive Connected Cancer Care (C4), is to advance health equity for underserved populations by improving timely access to community-focused, patient-centered, and high-quality cancer care, particularly targeting underserved populations such as rural, low-income uninsured communities. Building on the work of the MyPath platform, C4 improves coordination of care with supportive/ancillary care providers and community services through use of a newly designed, developed, and implemented patient navigation and a digital closed loop referral system. The new patient centered platform will include a dashboard for the navigator and healthcare team and a mobile app for the patients and caregivers to: (1) improve patient-centered communication and engagement in care and (2) increase use of needed psychosocial care and other supportive services through use of the MyPath dashboard and mobile app. (Funding: Merck Foundation Award— *Alliance for Equity in Cancer Care*).

HEALTH BEHAVIOR

Health behavior (Population Health / Disparities) will play a lesser role in forthcoming research. While knowledge gained through several population health and informatics studies has provided both empirical and theoretical grounding for my work in digital health, both time and interest in this area is increasingly limited. My research in health behavior focused on two areas:

1) Population Health: This research focuses on the health disparities of marginalized rural underserved communities throughout the US. These studies focus on self-care behavior, health literacy, and the application of information to support disease prevention and health promotion. This also includes investigating social media cognitive overload associated with information anxiety and avoidance behavior. Our studies have also shown that disparities in health outcomes present difficult challenges to underserved populations in Kentucky, the surrounding states, and globally, in countries like Pakistan and India. As such, these populations often experience a greater burden of disease, with less knowledge of health literacy and disease management. Both mHealth and telehealth have been shown to be vital links to reducing such disparities in rural clinical and home care settings.

2) Health Informatics and Consumer Health Informatics: Work in health informatics focuses on solutions to improve the quality and safety of health care services, building novel data science methods using patient-clinician verbal communication and patient self-reported messages. Specifically, the aim of this work was to identify social media information about adverse drug events and drug effectiveness by linking patient expressions of adverse drug events to medical standard vocabularies. This work also includes text mining algorithms/analysis of patient narrative data of psychiatric antidepressant medication (e.g., Selective Serotonin Reuptake Inhibitors).

My research in consumer health informatics focused on behavior change strategies using mHealth. The most current research in the area targets the wellness needs of parents with children and the elderly. This study evolved out of research related to children's health, while earlier papers focused on mHealth data analytics to support healthy lifestyle management. These position papers on consumer health informatics argue for: 1) empowering the elderly through the use of mobile health to achieve and sustain healthy lifestyle behaviors, 2) developing a sociotechnical system model and the use of mHealth technologies to support the management of noncommunicable diseases such as diabetes, and 3) leveraging health informatics and human factors psychology, through which mHealth and lifestyle management care-team collaboration can significantly support sustainable healthy lifestyle behaviors.

CURRENT AND PROJECTED FUNDING DETAILS

The following list of current and forthcoming funded research outlines the digital health applications used and their respective study populations, with an indication of funding mechanism and status.

VRx Therapeutic Medicine

(1) Brain Cancer (Neuro-Oncology)

Funding (Pilot-Phase 1): U of Kentucky Center for Clinical/Translational Science. [Recently Completed Fall 2024] Title: A health game intervention for cancer patients suffering from acute cognitive impairment: A clinical study to assess a form of brain stimulation therapy with the potential to improve synaptic plasticity. (*Preliminary Data Collection*) **Collaborators**: Dr. D. Villano, MD (Neuro-Oncology, UK Markey Cancer Center); and Drs. B. Khan & S. Khan, Indiana U., School of Medicine, IU Health, and the Regenstreif Institute.

Funding (Pilot-Phase 2): University of Cincinnati Cancer Center. [Active] Title: Measuring the feasibility, acceptability, and effect of a VR cognitive training intervention for brain cancer survivors with cancer-related cognitive impairment. (*Preliminary Data Collection*) **Collaborators**: Drs. Shatz and Yogendran (Neuro-oncology and Neurology—UC Neuroscience Institute).

(2) Breast Cancer
Funding: American Cancer Society [Pending] Title: Measuring the feasibility, acceptability, and fidelity of intervention delivery for a virtual-reality game cognitive training platform for breast cancer patient survivors at risk for mild cognitive impairment. **Collaborators**: Drs. Shatz (neuro-oncology and neurology—UC Neuroscience Institute), Dr. Charif (Oncology) and Dr. Shaughnessy (Survivorship Clinic), College of Medicine.

(3) Alzheimer's / Dementia (*Post-Intensive Care Syndrome*)
Funding: NIH/National Institute of Aging [Forthcoming] Title: Measuring the feasibility, acceptability, and fidelity of intervention delivery for virtual-reality cognitive gaming exercise among critically ill older adults at risk for ICU-acquired mild cognitive impairment (Alzheimer's and dementias, including its effect on pain, anxiety, delirium). **Collaborator**: S. Khan, MD, B. Khan, MD, Indiana University School of Medicine and the Regenstreif Institute.

(4) Delirium / Dementia
Funding (Project #1): Indiana University Health Values Grant. [Active] Title: Virtual Reality Cognitive Intervention for Critically Ill Delirium Survivors (VR-Cog). **Collaborators**: S. Khan, MD, B. Khan, MD, Indiana University School of Medicine, and the Regenstreif Institute. (*Preliminary Data Collection*)

Funding (Project #2): U of Cincinnati, Brain Tumor Center, UC Neuroscience Institute. [Forthcoming] Title: Measuring the acceptability and effect of a VR cognitive training intervention for dementia patients with mild cognitive impairment. **Collaborator**: Dr. Shatz (Neuro-oncology and Neurology—UC Neuroscience Institute). (*Preliminary Data Collection*)

(5) Stroke
Funding: La Sapienza University, Faculty Research Fellowship [Pending] Title: Research: Measuring cognitive performance among post-stroke patients: A pilot study. **Collaborator**: Dr. Marco Iosa, Neuropsychology, Department of Psychology, La Sapienza University, Rome, Italy; and Sr. Researcher, Foundation Santa Lucia (Outpatient Clinic), Rome, Italy

Biosensor Diagnostics—

(1) Prostate Cancer
Funding: American Cancer Society, Grant No. SPA-RFA-Team-1076327. [Active] Title: Canine-inspired Identification and Analysis of Volatile Organic Compounds (VOC) Biomarkers of Prostate Cancer using Portable Chromatograph-Mass Spectrometer (GC-MS) and Development of a Hand-held Nanosensor System. **Collaborators**: Co-Pis: Drs. M. Woodlam, PhD, (Indiana U.), M. Agarwal, PhD, (Purdue U.), A. Faiola, PhD.

(2) Cystic Fibrosis
Funding: NIH R01. Collaborators: Co-Pis: Drs. M. Woodlam, PhD, M. Agarwal, PhD, (Indiana U.), A. Faiola, PhD. [Active] Title: Development of Canine-Inspired Nanosensor Systems to Detect Pulmonary Exacerbations in Patients with Cystic Fibrosis. **Collaborators**: M. Agarwal, PhD (Contact PI), Indiana U.; PIs: DB. Sanders, MD, S. Cao, MD, M. Woollam, PhD, Indiana U.

Mobile Health—

(1) Cancer—*Psycho-Oncology Patient Support / Health Equity*
Funding: Merck Foundation: *Alliance for Equity in Cancer Care.* [Active] Title: Comprehensive Connected Cancer Care (C4) Center. **Collaborators**: Mullett, Hull, Chih, Hesse, CoI: Dr. Faiola, PhD.

(2) Cancer—*Beside-to-Family Communications / Mental Health Support*
Funding: Markey Cancer Center Community Grant, University of Kentucky [Recently Completed Fall 2024] Title: Addressing the mental health disparities of families of cancer patients from rural Kentucky: Investigating efficacy to reduce mental trauma using FamCare. **Collaborators**: Drs. Z. Hao, MD; R. Munker, MD. (stem cell / Oncology, UK Markey Cancer Center). (*Preliminary Data Collection*)

APPENDIX

FDA Approval and the Scalability of VRx as Medical Therapeutics

Regarding the scalability of VRx as a digital solution for MCI, healthcare support is steadily growing, with approval for reimbursement for VR therapies.[75] There are several factors that are quickly changing the healthcare paradigm for outpatient treatment using VR therapy. **(1) CPT codes for VR therapy:** Over the last two years the new Category III CPT® code 0770T has been introduced (effective 1/1/23), designed to account for the use of VR technology in therapeutic settings. This code acknowledges the growing role of immersive technology in enhancing therapeutic outcomes. **(2) VR is now considered a billable treatment:** Healthcare system administrators are increasingly integrating VR into multiple types of patient therapies as an adjunct to the base therapy, in conjunction with codes for psychotherapy, speech therapy, health and behavior interventions, therapeutic procedures, and adaptive behavior services,[76] and offering an effective treatment option that is billable.

Providers can bill insurance for VR rehab (such as psychotherapy or therapeutic exercises) for reimbursement depending on three (low threshold) requirements: (1) VR must be integrated into the patient's overall treatment plan, (2) Only licensed healthcare professionals, such as therapists, counselors, or medical practitioners, can bill for VR-related services, and (3) Insurance carriers must recognize VR as an effective treatment.[77] According to the American Medical Association, physicians are increasingly incorporating telehealth, VR, and AI into their practices using code **0770T** to report VR-mediated therapy.[78] See note on FDA and Medicare/Medicaid approval for VR therapy.[79]

REFERENCES & NOTES

[1] This is the newly updated title of the school since 2023 based on the donor Fred Luddy.
[2] (Specialization)—Social Science: Sociocultural / Behavioral Psychology, Cognitive Modeling of Information Technology.
[3] (Specialization)—Communication Design: Human Factors and Interactive Media Learning Systems.
[4] (Focus)—Certificate of Participation for all workshops and training programs.
[5] (AAMI) —The Association for the Advancement of Medical Instrumentation® is a nonprofit organization founded in 1967. It is a diverse community of more than 9,000 professionals united by one important mission—the development, management, and use of safe and effective health technology. https://www.aami.org/
[6] https://www.accademiadiurbino.it/en/
[7] NIH and Team Science: See: NIH/NCI and Collaboration and Team Science.
[8] American Cancer Society (PI and Team Principle, similar to NSF Co-PI): PI serves as the team leader and primary point of contact for the ACS Extramural Research Staff, ensures the team complies with the terms of the award, and oversees all organization assurances and certifications. (no multi- or co-PIs allowed); Team Principal: Leads a component of the research based on their area of expertise, together with Lead PI, shares authority for scientific leadership. (ACS Link)
[9] **NIH (PI or Multiple PIs or CoPI):** All PD/PIs have equal responsibility and accountability for leading and directing the project. …All PD/PIs must be qualified to serve as PD/PIs and will share responsibility for the project. Although the PD/PIs may identify a leader of the project or a coordinator of the overall team, that is not a role that NIH formally acknowledges**. (NIH Link)**
[10] This NSF funded research addresses the global epidemic of diabetes mellitus types 1 and 2, as well as related physiological complications stemming from severe hypoglycemia (HYPO). HYPO detection relies on analyzing blood glucose levels through continuous monitoring, saliva, urine, and skin pricking—all of which have limited accuracy. Diabetes-alert dogs (DADs) are trained to detect HYPO by smelling volatile organic compounds (VOCs) in human breath. Patients with DADs have demonstrated more accurate and faster detection than those methods noted. In this research, we developed a HYPO warning and data delivery system, referred to as HYPOalert that uses a nanosensor that mimics a canine's ability to detect HYPO from VOCs in human breath. The sensor outputs data integers from 1 to 10 (via Bluetooth) to a smartphone app, which provides numeric and data visualizations along with HYPO alerts that warn patients when they are approaching or in HYPO. Three prototype iterations have been completed and tested.
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[56] **PEM** will produce four forms of AI data and analysis: **(1)** Performance and behavioral, e.g. navigational speed/movement, attention exercise scores, spatial orientation, and recognition abilities; **(2)** Input modalities, e.g., speech recognition, written data (intonation, text); **(3)** Adaptation and assessment modeling, a self-adjusting algorithm that analyzes real-time player difficulty. (This AI modeling matches the difficulty of the patients' task to their skill level relative to prior performance. PEM will understand/respond to player performance and modulate difficulty intended to increase patient motivation, while incrementally challenging patient cognitive load—thereby maximizing cognitive stimulation), and **(4)** Predictive cognitive performance, that is, the leveraging of regression-based machine learning algorithms to attain meaningful forecasting about accumulated experience-dependent game improvements and its effect on (decreasing or increasing) cognitive impairment. **NPC** will produce intelligent behaviors, including role playing characters' emotion/attitude modeling. This will include sentiment NLP analysis, which supports dialogues with patients, e.g., conversations, giving instructions, or asking questions. NLP-generated insights about how the patient feels and interacts/reacts will be processed in conjunction with PEM to provide game feedback for subsequent game scenarios. Sentiments will also be extracted from the patient's spoken and text messages, allowing believable emotional (natural fluency) responses, thereby deepening the emotional experience through patient-NPC engagement. **NLP** will focus on the interpretation and manipulation of human language analysis by NPCs in patient communication, i.e., providing a meaningful automated response by employing sentiment analysis to determine the feelings expressed by the patient. In sum, NLP will greatly enhance the quality of assessing the player's communication in real-time while creating a more immersive real-world experience for the patient player.

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[74] Collaborators, project titles, and funding amounts are listed in my CV grants section

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[79] In 2021, AppliedVR, Inc. was granted FDA breakthrough status for the first FDA-authorized immersive VR medical device called RelieVRx for home use for the treatment of chronic low back pain. Centers for Medicare and Medicaid Services (CMS) explains that the device delivers a clinically based multimodal pain self-management program that incorporates evidence-based principles of cognitive behavioral therapy (CBT) and other neuroscience-based behavioral health methods. In 2023, CMS established a Healthcare Common Procedure Coding System Level II code for a VR program for home use. Based on an approval from the FDA, CMS issued the first codes and Medicare benefit category determination for a therapeutic VR Device. In 2024, the first digital mental health solution was approved by the FDA. This decision acknowledges digital mental health therapeutics, with the clearance of DeepWell DTx's. This product marks a significant turning point for the healthcare industry, which connects the reimbursement stream and digital therapeutics. In sum, FDA approval provides recognition of the mental health global crisis and current resource constraints, with new codes proposed by CMS providing monetary incentives for development and adoption by both providers and patients.