

Andruid Kerne

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ACADEMIC POSITIONS

2022- **University of Illinois Chicago (UIC), Chicago, IL**

Professor, Computer Science

Professor, Design (courtesy appointment)

2016- **Texas A&M University, College Station, TX**

Professor, Computer Science and Engineering

2019-2022 **National Science Foundation, Alexandria, VA**

Program Director (IPA), CISE, Information and Intelligent Systems, Human-Centered Computing (HCC)

- Co-direct research funding programs in HCC—CAREER, CRII, Core Small, and Core Medium—and cross-cutting programs: Cyberlearning/Emerging Technologies for Teaching and Learning (RETTL), Future of Work at the Human-Technology Frontier, Ethical and Responsible Research (ER2), CISE Community Research Infrastructure (CCRI), and RAPID COVID-19.
- Contribute distinctive, conceptual wording to solicitations.
- Mentor PIs in articulating their research areas through stages of the proposal development cycle: from informal discussions and 1-page summaries, to writing project abstracts.
- Champion giving constructive feedback and building scientific community as essential aspects of participating in NSF panels. Create and engender Empathetic Reviewing Guide. This helps motivate and fulfill panelists, which, in turn, creates camaraderie and better collaboration. Valuable outcomes include better reviews, better summaries, and better decision-making, as well as better overall feelings about involvement in NSF as an institution, and, most importantly, strengthened scientific community.
- Gender equity in panels: 59% of my panelists have been women.
- Gender equity in awards: 68% of PIs in my awards happen to be women.
- Champion design methodologies as critical to the NSF mission for (1) generating new ideas for what new technologies are good (and bad) for; and (2) gathering data about human experiences with new technologies, as they are being developed, and using this data to improve new technologies to better meet human needs.
- Champion inclusion of caregivers in panels by keeping reviewing loads low and modeling that the presence of kids is welcome rather than intrusive.
- Lead authoring of a new guide for how to write a research award abstract, according to principles of effective communication with both the public and the institutional hierarchy about intellectual merit and broad impact.
- Chair IIS working group leading to NSF Seamless / Seamful Human-Technology Interaction workshop.

2008-16 **Texas A&M University, College Station, TX**

Associate Professor, Computer Science and Engineering

2012-13 **University of Nottingham, Nottingham, United Kingdom**

Sabbatical Fellow, Horizon Digital Economy Research Institute / Department of Computer Science

2002-08 **Texas A&M University, College Station, TX**

Assistant Professor, Computer Science

2000-01 **Tufts University, Medford, MA**

Visiting Professor, Computer Science

1995-2000 **NYU Media Research Lab / Dept. of Computer Science, New York, NY**

Graduate Research Assistant

1997	Parsons School of Design , New York, NY <i>Lecturer, Interactive Art</i>
1994-95	International Centre for African Music and Dance, University of Ghana . Legon, Ghana <i>Research Affiliate, consultant</i>

- (See Research, Teaching, and Advisees sections, below.)

EDUCATION

New York University (NYU)

PhD Computer Science / Multimedia

Dissertation title: *CollageMachine: A Model of 'Interface Ecology'*.

Advisor: Ken Perlin (Academy Award winner). Committee includes performance studies scholars Richard Schechner (director & TDR editor) and Barbara Kirshenblatt-Gimblett (Guggenheim Fellowship).

Wesleyan University, Middletown, Connecticut

M.A. Music, Composition

Compose and direct *The Economic Survival Rite of Passage*: a multimedia opera of musicians, actors, dancers & digitally sampled found sounds.

Advisors: new music pioneers Alvin Lucier and Anthony Braxton (Macarthur Fellowship).

Harvard University, Cambridge, Massachusetts

B.A. Applied Mathematics / Electronic Media

Focus on mathematics, physics and art of Electronic Media as a new sub-concentration in Applied Mathematics.

Advisor: Communications pioneer Anthony Oettinger.

Research

GRANTS \$3,104,448

External: National Science Foundation

2015-20	Kerne, A., CHS: Small: Learning Communities in the Crowd: Scaling Participation in Online Courses through Social Live Media Composition, \$563,827.
2015	Kerne, A., I-Corps: Transforming the Web to Support New Ideas: Beyond the Feed and the Board, \$50,000.
2012-17	Kerne, A., EAGER: Embodying Visual Semantic Information Composition to Stimulate Sensemaking and Ideation, \$344,000.
2008-17	Kerne, A., CAREER: A Multimodal Mixed-Initiative Research Notebook for Information Discovery, Intelligent Information Systems: Human-Centered Computing, \$650,000.
2008-13	Kerne, A., HCC-Medium: Location-Aware Non-Mimetic Simulation Game for Teaching Team Coordination, \$539,806.
2012	Kerne, A., I-Corps: ZeroTouch: High-Performance Sensing for Multi-Touch and Free-Air Interaction, \$50,000.
2007-8	Kerne, A., SGER: Non-Mimetic Simulation of Fire Emergency Response Team Cognition Stress through a Mixed Reality Game, \$96,893.
2006-9	Kerne, A., ALT: Promoting Information Discovery in Learning: Mixed-Initiative Composition of Hybrid Image-Text Surrogates, Advanced Learning Technologies, \$266,940.
2004-5	Kerne, A., Smith, S.M., SGER: Extending Working Memory Functions by Presenting Bookmark and Result Sets as Temporal Visual Compositions, \$84,295.

External: Other

2015-17	Kerne, A., Collaborative Pen+Touch Design Ideation on Large Surfaces, Microsoft Surface Hub for Research, \$55,998.
2016-17	Kerne, A., Fostering Participation in Online Learning through Live Media Composition in the Cloud, Microsoft Azure for Research, \$25,000.
2016-17	Kerne, A., Unrestricted Gift, Adobe Systems, \$12,400.
2012-13	Kerne, A., Embodied Interactive Installation Ecologies, Horizon Digital Economy Research Institute at The University of Nottingham, \$72,602.
2012	Kerne, A., Interface Ecology Lab, Meta-Metadata is S.IM.PL, Google Summer of Code (GSoC), \$40,500.
2011-12	Kerne, A., PSoC Ubiquitous Computing and Education: Arduino & 8051 Development Boards, Cypress Semiconductor, \$44,988.
2011	Kerne, A., Interface Ecology Lab, Meta-metadata semantics, S.IM.PL: Support for Information Mapping in Programming Languages, Google Summer of Code (GSoC), \$23,801.
2012	Kerne, A., Scaling ZeroTouch, TEEX Disaster Preparedness and Response, \$10,000.
2010	Kerne, A., U.S. Participation in ACM Multimedia Interactive Art Exhibition: An Interactive Renaissance of Color, National Science Foundation, \$10,000.
1994	Lang, M., Kerne, A., Coded Messages: CHAINS, Dance Theatre Workshop Suitcase Fund / Rockefeller Foundation, \$5,000.

<i>Internal</i>	
2015	Kerne, A., Vanegas, J., Empowering Texas Innovation: Disseminating IdeaMâché to Support Creativity among Students and Educators, TAMU System: Chancellor’s Area 41 Challenge Grant, \$25,000.
2005-7	Kerne, A., Gutierrez-Osuna, R., Song, D., Perceptive Sensor Networks Lab, Texas A&M College of Engineering, \$80,000.
2006-7	Kerne, A., Visual Representations to Promote Creativity in The Design Process, Katrina-Rita Locative Media Dialogue, Texas A&M Arts Academy, \$9,000.
2004-5	Kerne, A., Enhanced Generation of Navigational Information Compositions through Semantic Clustering, Texas A&M Humanities Informatics Initiative, \$16,000.
2004	Leggett, J., Shipman, F., Kerne, A., Computational Media Lab, Texas A&M CAF, \$38,398.

PRIZES AND AWARDS

2008-2016	NSF CAREER Award.
2015	ACM Creativity and Cognition 2015, Best Paper Honorable Mention (top 2% of papers), Evaluating TweetBubble with Ideation Metrics of Exploratory Browsing.
2012	ACM CHI 2012, Best Paper Honorable Mention (top 5% of accepted papers), ZeroTouch: An Optical Multi-Touch and Free-Air Interaction Architecture.
2000 - 2001	NYU History of the Production of Knowledge Dissertation Fellowship.
1999	Milia 2000 new media talent competition, Cannes, France: <i>CollageMachine</i> .
1996	Prix Ars Electronica, Linz, Austria – honorary mention: <i>Coded Messages: CHAINS</i> .
1995 - 2000	National Science Foundation Fellowship for PhD research in multimedia at NYU.
1991 - 1993	Full tuition scholarship + stipend for M.A. in music at Wesleyan University.

PUBLICATIONS – BOOK

* indicates my student

1. Dow, S., Maher, M.L., Kerne, A., Latulipe, C. Carrasco, M. *, Chen, Y. *, *C&C '19: Proceedings of the 2019 Conference on Creativity and Cognition*, 2019.

PUBLICATIONS – BOOK CHAPTER

2. Webb, A.M. *, Kerne, A., Linder, R. *, Lupfer, N. *, Qu, Y. *, Keith, K. *, Carrasco, M. *, Chen, Y. *, A Free-form Medium for Curating the Digital, in *Curating the Digital Space for Art and Interaction*, England, D., Schiphorst, T., Bryan-Kinns, N. (Eds.), Springer, 2016, 73-87.
3. Smith, S.M., Kerne, A., Koh, E. *, Shah, J., The Development and Evaluation of Tools for Creativity, in Markman, A. (Ed.), *Tools for Innovation*, Oxford University Press, 2009.
4. Kerne, A., Koh, E. *, Choi, H., Webb, A.M. *, Dworaczyk, B. *, Smith, S.M., Hill, R., Albea, J., Supporting Creative Learning Experiences: combinFormation and the Future of Knowledge Creation, in Coste, T., Keller-Mathers, S. (Eds.), *Creativity at Work*, Austin, TX: ACA Press, 2007.

PUBLICATIONS - JOURNAL

5. Kerne, A., Webb, A.M.*, Smith, S.M., Linder, R.*, Lupfer, N.*, Qu, Y.*, Moeller, J.*, Damaraju, S.*, Using Metrics of Curation to Evaluate Information-based Ideation, *ACM Transactions on Computer-Human Interaction (ToCHI)*, 21(3) June 2014, 1-48.
6. Pipek, V., Liu, S., Kerne, A., Crisis Informatics and Collaboration: A Brief Introduction, *Journal of Computer Supported Cooperative Work (JCSCW)*, 23(4) July 2014, 339-345.
7. Toups, Z. O.*, Hamilton, W.*, Kerne, A. The Team Coordination Game: A Zero-Fidelity Simulation Abstracted from Fire Emergency Response Practice, *ACM Transactions on Computer-Human Interaction (ToCHI)*, 18 (4) Dec 2011, 1-37.
8. Kerne, A., Koh, E.*, Smith, S.M., Choi, H., Webb, A.M.*, Dworaczyk, B.*, combinFormation: Mixed-Initiative Composition of Image and Text Surrogates Promotes Information Discovery, *ACM Transactions on Information Systems*, 27 (1) Dec 2008, 5:1 - 5:45.
9. Kerne, A., Smith, S.M., Koh, E.*, Graeber, R.*, An Experimental Method for Measuring the Emergence of New Ideas in Information Discovery, *International Journal of Human Computer Interaction (IJHCI)*, 24 (5) July 2008, 460-477.
10. Kerne, A., Koh, E.*, Representing Collections as Compositions to Support Distributed Creative Cognition and Situated Creative Learning, *New Review of Hypermedia and Multimedia (NRHM)* Special Issue on Studying the Users of Digital Education Technologies, 13(2) Dec 2007, 135-162.
11. Webb, A.M.*, Kerne, A., Koh, E.*, Human Movement and Clear Affordances Promote Social Interaction, *Leonardo Electronic Almanac (MIT Press)*, 19(5) May 2007, n.p.
12. Kerne, A., Doing Interface Ecology: The Practice of Metadisciplinarity, *Intelligent Agent*, 6(1) Jan. 2006, 1-6.
13. Kerne, A., Interface Ecology: An Open Conceptual Space of Collage and Emergence, *ArtLab23*, 1(1) Spring 2002, School of Visual Arts, NYC, n.p.
14. Kerne, A., The Conceptual Space of Collage, from CollageMachine to Interface Ecology and Back. *Cultronix*, 5, 2001, Carnegie Mellon University, Pittsburgh, n.p.
15. Kerne, A., CollageMachine: An Interactive Agent of Web Recombination, *Leonardo Journal of Arts and Sciences* (Juried Digital Salon Issue), 33(5) Nov 2000, 347-350.
16. Kerne, A., Cultural Representation in Interface Ecosystems Amendments to the interactions Design Awards Criteria. *ACM interactions*, 5(1) Jan 1998, 37-43.
17. Kerne, A. Lang, M., Kofi, F., Cultural Ecology from Ghana to the World Wide Web, *Leonardo Electronic Almanac (MIT Press)*, 4(3) March 1996, n.p.

PUBLICATIONS - CONFERENCE – FULL + ARCHIVAL

[acceptance rate
%]

18. Jain, A. *, Kerne, A., Lupfer, N. *, Britain, G. *, Perrine, A. *, Choe, Y., Keyser, J., Huang, R. Recognizing Creative Visual Design: Multiscale Design Characteristics in Free-Form Web Curation Documents, *Proc. ACM DocEng 2021*, 1-10 [33%]. **Best Paper Nominee.**
19. Lupfer, N. *, Kerne, A., Linder, R.*, Fowler, H. *, Rajanna, V., Carrasco, M.*, Valdez, A. *, Multiscale Design Curation: Supporting Computer Science Students' Iterative and Reflective Creative Processes, *Proc. ACM Creativity and Cognition 2019*, 233-245 [29%].
20. Webb, A.M. *, Fowler, H. *, Kerne, A., Newman, G., Kim, J.H., Mackay, W.E., Interstices: Sustained Spatial

- Relationships between Hands and Surfaces Reveal Anticipated Action, *Proc. CHI 2019*, paper 288, 1-12 [24%].
21. Lupfer, N. *, Fowler, H. *, Valdez, A. *, Webb, A.M. *, Merrill, J., Newman, G., Kerne, A., Multiscale Design Strategies in a Landscape Architecture Classroom, *Proc. ACM DIS 2018*, 1081-1093 [25%].
 22. Hamilton, W.A.*, Lupfer, N.*, Botello, N.*, Tesch, T.*, Stacy, A.*, Merrill, J., Williford, B.*, Kerne, A. Collaborative Live Media Curation: Shared Context for Participation in Online Learning, *Proc. ACM CHI 2018*, paper 555, 1-14 [26%].
 23. Carrasco, M.*, Kerne, A., Queer Visibility: Supporting LGBT+ Selective Visibility on Social Media, *Proc. ACM CHI 2018*, paper 250, 1-12 [26%].
 24. Kerne, A., Lupfer, N.*, Linder R. *, Qu, Y. *, Valdez, A. *, Jain, A. *, Keith, K. *, Carrasco, M. *, Vanegas, J., Billingsley, A., Strategies of Free-form Web Curation: Processes of Creative Engagement with Prior Work, *Proc. ACM Creativity & Cognition 2017*, 380-392 [29%].
 25. Lupfer, N. *, Kerne, A., Webb, A.M. *, Linder, R. *, Patterns of Free-form Curation: Visual Thinking with Web Content, *Proc. ACM Multimedia 2016*, 12-21 [20%]. **Best Paper Candidate [top 2% of papers]**.
 26. Webb, A.M.*, Kerne, A., Brown, Z., Kim, J.H., Kellogg, E., LayerFish: Bimanual Layering with a Fisheye In-Place, *Proc. ACM Conf on Interactive Surfaces and Spaces (ISS) 2016*, 189-198 [28%].
 27. Sharma, H.N., Toups, Z.O.*, Dolgov, I., Kerne, A., Jain, A. *, Evaluating Display Modalities Using a Mixed Reality Game, *Proc. ACM SIGCHI Symposium on Computer-Human Interaction in Play (CHI PLAY) 2016*, 65-77 [29%].
 28. Webb, A.M.*, Wang, C., Kerne, A., Cesar, P., Distributed Liveness: Understanding How New Technologies Transform Performance Experiences, *Proc. ACM CSCW 2016*, 432-437 [25%].
 29. Jain, A. *, Lupfer, N. *, Qu, Y. *, Linder, R. *, Kerne, A., Smith, S., Evaluating TweetBubble with Ideation Metrics of Exploratory Browsing, *Proc. ACM Creativity and Cognition 2015*, 178-187 [28%],
Best Paper Honorable Mention [top 2% of papers].
 30. Linder, R. *, Lupfer, N. *, Kerne, A., Webb, A.M. *, Hill, C. *, Qu, Y. *, Keith, K. *, Carrasco M. *, Kellogg, E., Beyond Slideware: How a Free-form Presentation Medium Stimulates Free-form Thinking in the Classroom, *Proc. ACM Creativity and Cognition 2015*, 285-294 [28%].
 31. Wilkins, J., Järvi, J., Jain, A. *, Kejriwal, G., Kerne, A., Kumar, V., EvolutionWorks: Towards Improved Visualization of Citation Networks, *Proc. IFIP International Conference on Computer-Human Interaction (INTERACT) 2015*, 213-230 [29.9%].
 32. Qu, Y. *, Kerne, A., Lupfer, N. *, Linder, R. *, Jain, A. *, Metadata Type System: Integrate Presentation, Data Models and Extraction to Enable Exploratory Browsing Interfaces, *Proc. ACM Engineering Interactive Computing Systems (EICS) 2014*, 107-116 [18%].
 33. Linder, R. *, Snodgrass, C. *, Kerne, A. Everyday Ideation: All of My Ideas Are on Pinterest, *Proc. ACM CHI 2014*, 2411-2420 [23%].
 34. Hamilton, W. *, Garretson, O. *, Kerne, A. Streaming on Twitch: Fostering Participatory Communities of Play within Live Mixed Media, *Proc. ACM CHI 2014*, 1315-1324 [23%].
 35. Fischer, J., Jiang, W., Kerne, A., Greenhalgh, C., Ramchurn, S., Reece, S., Pantidi, N., Rodden, T., Supporting Team Coordination on the Ground: Requirements from a Mixed-Reality Game, *Proc. Intl. Conf on Design of Cooperative Systems (Coop) 2014*, 49-67, Springer [42%].
 36. Webb, A.M. *, Linder, R. *, Kerne, A., Lupfer, N. *, Qu, Y. *, Poffenberger, B. *, Revia, C., Promoting Reflection and Interpretation in Education: Curating Rich Bookmarks as Information Composition, *Proc. ACM Creativity and Cognition 2013*, 53-62 [32%].
 37. Damaraju, S. *. Seo, J.H., Hammond, T., Kerne, A., Multi-tap Sliders: Advancing Touch Interaction for Parameter Adjustment. *Proc. ACM Intelligent User Interfaces (IUI) 2013*, 445-452 [22%].

38. Moeller, J.*, Kerne, A., ZeroTouch: An Optical Multi-Touch and Free-Air Interaction Architecture, *Proc. ACM CHI 2012*, 2165-2174 [23%], **Best Paper Honorable Mention [top 5% of accepted papers]**.
39. Hamilton, W.*, Kerne, A., Robbins, T.*, High-Performance Pen + Touch Modality Interactions: A Real-Time Strategy Game eSports Context, *Proc. ACM UIST 2012*, 309-318 [21%].
40. Kerne, A., Hamilton, W.*, Toups, Z. O.* Culturally Based Design: Embodying Trans-Surface Information Exchange in Rummy. *Proc. ACM CSCW 2012*, 509-518.
41. Toups, Z.*, Kerne, A., Hamilton, W.*, Shahzad, N.*, Zero-Fidelity Simulation of Fire Emergency Response: Improving Team Coordination Learning, *Proc. ACM CHI 2011*, 1959-1968 [26%].
42. Webb, A.M.*, Kerne, A., Integrating Implicit Structure Visualization with Authoring Promotes Ideation, *Proc. ACM/IEEE Joint Conference on Digital Libraries (JCDL) 2011*, 203-212 [29%].
43. Kerne, A., Qu, Y.*, Webb, A.M.*, Damaraju, S.*, Lupfer, N.*, Mathur, A.*, Meta-Metadata: A Metadata Semantics Language for Collection Representation Applications, *Proc. ACM Conf. on Information and Knowledge Management (CIKM) 2010*, 1129-1138 [13%].
44. Toups, Z. O.*, Kerne, A., and Hamilton, W.*, Game Design Principles for Engaging Cooperative Play: Core Mechanics and Interfaces for Non-Mimetic Simulation of Fire Emergency Response. *Proc. ACM SIGGRAPH Symposium on Video Games 2009*, 71-78 [30%].
45. Toups, Z.O.*, Kerne, A., Hamilton, W.*, Blevins, A.*, Emergent Team Coordination: Non-Mimetic Simulation Game Design from Fire Emergency Response Practice, *Proc. ACM Group 2009*, 341-350 [36%].
46. Koh, E.*, Kerne, A. 2009. Deriving Image-Text Document Surrogates to Optimize Cognition. *Proc. ACM DocEng 2009*, 84-93 [30%].
47. Karlsen, K., Maiden, N., Kerne, A., Inventing Requirements with Creativity Support Tools, *Proc. REFSQ 2009 (International Working Conference on Requirements Engineering: Foundation for Software Quality)*, 162-174 [29%].
48. Webb, A.M.*, Kerne, A., The In-Context Slider: A Fluid Interface Component for Visualization and Adjustment of Values while Authoring, *Proc. ACM AVI 2008 (Advanced Visual Interfaces)*, 91-99, [27.5%].
49. Toups, Z.O.*, Kerne, A., Implicit Coordination in Firefighting Practice: Design Implications for Training Fire Emergency Responders, *Proc. ACM CHI 2007*, 277-286 [25%].
50. Kerne, A., Koh, E.*, Smith, S.M., Choi, H., Graeber, R.*, Webb, A.M.*, Promoting Emergence in Information Discovery by Representing Collections with Composition, *Proc. ACM Creativity & Cognition 2007*, 117-126 [23%].
51. Koh, E.*, Kerne, A., Webb, A.M.*, Damaraju, S.*, Sturdivant, D.*, Generating Views of the Buzz: Browsing Popular Media and Authoring using Mixed-Initiative Composition, *Proc. ACM Multimedia 2007*, 228-237 [19%].
52. Koh, E.*, Caruso, D.*, Kerne, A., Gutierrez-Osuna, R., Elimination of Junk Document Surrogate Candidates through Pattern Recognition, *Proc. ACM Symposium on Document Engineering 2007*, 187-195 [39%].
53. Kerne, A., Koh, E.*, Dworaczyk, B.*, Mistrot, J.M.*, Choi, H., Smith, S.M., Graeber, R.*, Caruso, D.*, Webb, A.M.*, Hill, R., Albea, J., combinFormation: A Mixed-Initiative System for Representing Collections as Compositions of Image and Text Surrogates, *Proc. ACM/IEEE Joint Conference on Digital Libraries (JCDL) 2006*, 11-20 [23%].
54. Webb, A.M.*, Kerne, A., Koh, E.*, Joshi, P.*, Park, Y.*, Graeber, R.*, Choreographic Buttons: Promoting Social Interaction through Human Movement and Clear Affordances, *Proc. ACM Multimedia 2006*, 451-460 [16%].
55. Koh, E.*, Kerne, A., "I Keep Collecting": College Students Build and Utilize Collections in Spite of Breakdowns, *Proc. European Conference on Digital Libraries 2006*, 303-314 [27%].
56. Kerne, A., Koh, E.*, Choi, H., Dworaczyk, B.*, Smith, S.M., Hill, R., Albea, J., Supporting Creative Learning Experience with Compositions of Image and Text Surrogates, *Proc. Ed Media 2006*, 2567-2574 [29%].

57. Toups, Z.O.*, Graeber, R.*, Kerne, A., Tassinary, L., Berry, S.*, Overby, K.*, Johnson, M.*, A Design for Using Physiological Signals to Affect Team Game Play, *Proc. Augmented Cognition International 2006*.
58. Kerne, A., Koh, E.*, Sundaram, V.*, Mistrot, J.M.*, Generative Semantic Clustering in Spatial Hypertext, *Proc. ACM Document Engineering 2005*, 84-93 [30%].
59. Aley, E.*, Cooper, T.*, Graeber, R.*, Kerne, A., Overby, K.*, Toups, Z.O.*, Censor Chair: Exploring Censorship and Social Presence through Psychophysiological Sensing, *Proc. ACM Multimedia 2005*, 922-929 [16%].
60. Kerne, A., Doing Interface Ecology: The Practice of Metadisciplinarity, *Proc. ACM SIGGRAPH 2005 Art and Animation*, 181-185 [20%].
61. Chang, M.*, Leggett, J.L., Furuta, R., Kerne, A., Williams, J.P., Burns, S.L., Bias, R.G., Collection Understanding, *Proc. ACM/IEEE Joint Conference on Digital Libraries 2004*, 334-342 [24%].
62. Kerne, A., Mistrot, J.M.*, Khandelwal, M.*, Sundaram, V.*, Koh, E.*, Using Composition to Re-Present Personal Collections of Hypersigns, *Proc. Computational Semiotics in Games and New Media (CoSIGN) 2004*, 72-81 [17%].
63. Kerne, A. Smith S.M., Mistrot, J.M.*, Sundaram, V.*, Khandelwal, M.*, Wang, J.*, Mapping Interest and Design to Facilitate Creative Process During Mixed-Initiative Information Composition, *Proc. Creativity & Cognition Symposium: Interaction: Systems, Practice and Theory*, 2004, 1-25.
64. Kerne, A., Sundaram, V.*, A Recombinant Information Space, *Proc. Computational Semiotics in Games and New Media (CoSIGN) 2003*, 48-57 [25%].
65. Kerne, A., Concept-Context-Design: A Creative Model for the Development of Interactivity, *Proc. ACM Creativity and Cognition 2002*, 192-199 [48%].
66. Kerne, A., Interface Ecosystem, the Fundamental Unit of Information Age Ecology, *Proc. ACM SIGGRAPH 2002 Art and Animation*, 142-145 [19%].
67. Karadkar, U.P., Kerne, A., Furuta, R., Francisco-Revilla, L., Shipman, F., Wang, J.*, Connecting Interface Metaphors to Support Creation of Hypermedia Collections, *Proc. Euro Conf Digital Libraries 2003*, 338-349 [29%].

PUBLICATIONS - CONFERENCE – SHORT + ARCHIVED

68. Britain, G. *, Jain, A. *, Lupfer, N. *, Kerne, A., Perrine, A. *, Seo, J., Sungkajun, A. Design is (A)live: An Environment Integrating Ideation and Assessment, *Proc. ACM CHI 2020 Extended* [41.8%].
69. Linder, R. *, Stacey, A.M. *, Lupfer, N. *, Kerne, A., Ragan E. D. Pop the Feed Filter Bubble: Making Reddit Social Media a VR Cityscape, *Proc. IEEE VR 2018*.
70. Dalsgaard, P., Halskov, K., Frich, J., Biskjaer, M.M., Kerne, A., Lupfer, N. *, Designing Interactive Systems to Support and Augment Creativity - a Roadmap for Research and Design, *Proc. ACM DIS 2018 Companion*, 403-406 [55%].
71. Hamilton, W.A.*, Kerne, A., Lupfer, N.*, LiveDissent: A Media Platform for Remote Participation in Activist Demonstrations, *Proc. ACM Group 2018*, 257-266.
72. England, D., Candy, L., Latulipe, C., Schiphorst, T., Edmonds, E., Kim, Y., Clark, S., Kerne, A., Art.CHI, *Proc. ACM CHI EA 2015*, 2329-2332 [59%].
73. Lupfer, N.*, Hamilton, W.*, Webb, A.M.*, Linder, R.*, Edmonds, E., Kerne, A., The Art.CHI Gallery: An Embodied Iterative Curation Experience, *Proc. ACM CHI EA 2015*, 391-394 [58%].
74. Fei, S. *, Webb, A.M. *, Kerne, A., Qu, Y. *, Jain, A. *, Peripheral Array of Tangible NFC Tags: Positioning Portals for Embodied Trans-Surface Interaction, *Proc. ACM Interactive Tabletops and Surfaces 2013*, 33-36 [29%].

75. Kerne, A., Webb, A.M.*, Latulipe, C., Carroll, E., Drucker, S.M., Candy, L., Höök, K. Evaluation Methods for Creativity Support Environments, *Proc. ACM CHI EA 2013*, 3295-3298 [38%].
76. Hamilton, W. *, Kerne, A., Moeller, J. *, Pen-in-Hand Command: NUI for a Real-Time Strategy Game, *Proc. ACM CHI EA 2012 (Video)*.
77. Damaraju, S. *, Kerne, A., Comparing Multi-Touch Interaction Techniques for Manipulation of an Abstract Parameter Space, *Proc. ACM Multimodal Interfaces (ICMI) 2011*, 221-224 [39%].
78. Qu, Y. *, Kerne, A., Webb, A.M. *, Herstein, A. *, Interoperable Metadata Semantics with Meta-Metadata: A Use Case Integrating Search Engines, *Proc. ACM DocEng 2011*, 171-174 [53%].
79. Moeller, J. *, Kerne, A., ZeroTouch: A Zero-Thickness Optical Multi-Touch Force Field, *Proc. ACM CHI 2011 Extended (Interactivity)*, 1165-1170 [46%].
80. Moeller, J. *, Lupfer, N. *, Hamilton, W. *, Lin, H. *, Kerne, A., intangibleCanvas: Free-Air Finger Painting on a Projected Canvas, *Proc. CHI 2011 Extended*, 1615-1620 [43%].
81. Kerne, A., Nack, F., Farulli, L., Interactive Multimedia Computing for Creativity and Expression, *Proc. ACM Multimedia 2010*, 1457-1458.
82. Moeller, J. *, Kerne, A., Scanning FTIR: Unobtrusive Multi-Touch Sensing through Waveguide Transmissivity Imaging, *Proc. ACM Tangible, Embedded, and Embodied Interaction (TEI) 2010*, 73-76 [34%].
83. Koh, E. *, Kerne, A., Berry, S. *, Test Collection Management and Labeling System. *Proc. ACM DocEng 2009*, 39-42 [29.6%].
84. Hamilton, W. *, Kerne, A., Toups, Z. *, Qualitative Data Discovery in Group User Studies from Synchronized Communication and Views, *Proc. ACM CHI EA 2009*, 4573-4578.
85. Koh, E. *, Kerne, A., Moeller, J., Toward Automatic Generation of Image-Text Document Surrogates to Optimize Cognition. *Proc. ACM/IEEE Joint Conference on Digital Libraries (JCDL) 2009*, 417-418.
86. Kerne, A., Wakkary, R., Nack, F., del Bimbo, A., Candan, S., Jaimes, A., Steggell, A., Dulic, A., Jennings, P., Connecting Artists and Scientists in Multimedia Research, *Proc. ACM Multimedia 2008*, 1113-1114.
87. Kerne, A., Toups, Z. *, Dworaczyk, B. *, Khandelwal, M. *, A Concise XML Binding Framework Facilitates Practical Object-Oriented Document Engineering, *Proc. ACM Document Engineering 2008*, 62-65 [43%].
88. Koh, E. *, Kerne, A., Hill, R., Creativity Support: Information Discovery and Exploratory Search, *Proc. ACM SIGIR 2007*, 895-896.
89. Kerne, A., Koh, E. *, Creativity Support: The Mixed-Initiative Composition Space, *Proc. ACM/IEEE Joint Conference on Digital Libraries (JCDL) 2007*, 509.
90. Graeber, R. *, Kerne, A., ZooMICSS: A Zoomable Map Image Collection Sensemaking System (The Katrina Rita Context), *Proc. ACM Multimedia 2006*, 795-796 [37%].
91. Stenner, J. *, Kerne, A., Williams, Y., Playas: Homeland Mirage, *Proc. ACM Multimedia 2005*, 1057-1058 [28%].
92. Kerne, A., Smith, S.M., Choi, H., Graeber, R. *, Caruso, D. *, Evaluating Navigational Surrogate Formats with Divergent Browsing Tasks, *Proc. ACM CHI EA 2005 Extended*, 1537-1540.
93. Mandic, M. *, Kerne, A., Using Intimacy, Chronology and Zooming to Visualize Rhythms in Email Experience, *Proc. ACM CHI EA*, 1617-1620.
94. Kerne, A., Smith, S.M., The Information Discovery Framework, *Proc. ACM Designing Interactive Systems 2004*, 357-360 [25%].
95. Khandelwal, M. *, Kerne, A., Mistrot, J.M. *, Manipulating History in Generative Hypermedia, *Proc. ACM Hypertext 2004*, 139-140 [31%].
96. Azeez, B. *, Kerne, A., Southern, J. *, Summerfield, B. *, Aholu, I. *, Sharmin, E. *, Sharing Culture Shock through a

- Collection of Experiences, *Proc. ACM/IEEE Joint Conference on Digital Libraries 2004*.
97. Kerne, A., Sundaram, V.*, Wang, J.*, Khandelwal, M.*, Mistrot, J.M.*, Human + Agent: Creating Recombinant Information, *Proc. ACM Multimedia 2003*, 454-455.
 98. Kerne, A., CollageMachine: Interest-Driven Browsing Through Streaming Collage, *Proc. Cast01, Living in Mixed Reality* (Bonn), 2001, 241-244 [7%].
 99. Kerne, A., Khandelwal, M.*, Sundaram, V.*, Publishing Evolving Metadocuments on the Web, *Proc. ACM Hypertext 2003*, 104-105 [33%].
 100. Kerne, A., Jeremijenko, N., Mateas, M., Schiphorst, T., Wright, W. Extending Interface Practice: An Ecosystems Approach, *Proc. ACM SIGGRAPH 2002: Abstracts & Applications*, 90-92 [19%].
 101. Kerne, A., Open Processes Create Open Products: Interface Ecology As A Metadisciplinary Base For CollageMachine, *Proc. ACM SIGGRAPH 2001: Abstracts and Applications*, p. 239 [22%].
 102. Kerne, A. Interface Ecology as a Pedagogical Framework for HCI, *Proc. HCI97/INTERACT*, Nov 1997 [33%].
 103. Kerne, A. CollageMachine: Temporality and Indeterminacy in Media Browsing via Interface Ecology, *Proc. ACM CHI 1997 Extended*, 238-239 [24%].

PUBLICATIONS - CONFERENCE – OTHER

104. Toups, Z.*, Hamilton, W.*, Kerne, A., Zero-Fidelity Simulation: Engaging Team Coordination without Physical, Functional, or Psychological Re-creation, *Proc. ModSim World 2011*, 451–459.
105. Smith, S. M., Linsey, J., Kerne, A. Using Evolved Analogies to Overcome Creative Design Fixation. *Proc. International Conference on Design Creativity (ICDC) 2010*, 35-40 [33%].
106. Kerne, A., Damaraju, S.*, Kumar, B.*, Webb, A.M.*, Meta-Metadata: A Semantic Architecture for Multimedia Metadata Definition, Extraction and Presentation, *Poster & Demo Proc. Intl. Conf Semantic and Digital Media Technologies 2008*.
107. Damaraju, S.*, Kerne, A. Multitouch Gesture Learning and Recognition System, *Extended Abstracts of IEEE Workshop on Tabletops and Interactive Surfaces 2008*.
108. Toups, Z.*, Kerne, A., Caruso, D.*, Devoy, E.*, Graeber, R.*, Overby, K.*, Rogue Signals: A Location Aware Game for Studying the Social Effects of Information Bottlenecks, *Proc. Ubicomp 2005 Extended*.
109. Mandic, M.*, Kerne, A., faMailiar - Intimacy-based Email Visualization, *Proc. IEEE InfoVis (Information Visualization) 2004* [23%].
110. Kerne, A., Object Oriented Multimedia Programming in Java, *Proc. ICS Intranet 1996*.

PAPERS - WORKSHOP

111. Linder, R.*, Kerne, A., Composing Everyday Plans on Pinterest: 5 Minute Projects and Gathered Ideas, *CHI 2016 Workshop: Productivity Decomposed: Getting Big Things Done with Little Microtasks*.
112. Webb, A.M.*, Kerne, A., Embodying Diagramming through Pen + Touch Gestures, *CHI 2014 Gesture Interaction Design: Communication and Cognition Workshop*.
113. Webb, A.M., Kerne, A., Linder, R., Lupfer, N., Qu, Y., Keith, K., Carrasco, M., Multi-Scale Information Composition: a New Medium for Freeform Art Curation in the Cloud, *CHI 2014 Workshop: Curating the Digital:*

Spaces for Art and Interaction.

- 114.Linder, R.*, Webb, A.M.*, Kerne, A., Searching to Measure the Novelty of Collected Ideas, *CHI 2013 Evaluation Methods for Creativity Support Environments Workshop*].
- 115.Webb, A.M.*, Kerne, A., Creative Visual Thinking through Information Composition +Diagramming, *CHI 2012 Workshop: Visual Thinking*.
- 116.Linder, R.*, Kerne, A., Using Information Composition to Represent Connections Among Events Across Time and Place, *CHI 2012 Workshop: Heritage Matters: Design for Current and Future Values Through Digital & Social Tech*.
- 117.Toups, Z.*, Hamilton, W.*, Kerne, A., Mixed Reality Affords Zero-Fidelity Simulation of Team Coordination, *CSCW 2012 Mixed Reality Games Workshop*.
- 118.Toups, Z.*, Kerne, A., Hamilton, W.*, Motivating Play through Score, *Proc. ACM CHI 2009 Engagement by Design Workshop*.
- 119.Toups, Z.*, Kerne, A., Crafting Experience in a Non-Mimetic Simulation Game for Team Coordination: An Iterative Design Chronicle, *NSF Workshop on Media, Arts, Sciences, and Technology 2009*.
- 120.Webb, A.M.*, Kerne, A., In-Context Visualization and Authoring of Metadata for Information Collections, *NSF Workshop on Media, Arts, Sciences, and Technology 2009*.
- 121.Damaraju, S.*, Kerne, A., A Gesture Learning and Recognition System for Multitouch Interaction Design, *NSF Workshop on Media, Arts, Sciences, and Technology 2009*.
- 122.Koh, E.*, Kerne, A., combinFormation: Exploring Multiple Searches Together through the Mixed-Initiative Composition Space, *Proc. ACM Computer Human Interaction 2007 Workshop on Exploratory Search and HCI*, San Jose, April 2007 [24%].
- 123.Toups, Z.O.*, Kerne, A., Location-Aware Augmented Reality Gaming for Emergency Response Education: Concepts and Development, *Proc. ACM Computer Human Interaction 2007 Workshop on Mobile Spatial Interaction*.
- 124.Kerne, A., Compositional Hypermedia, *ACM Hypertext 2004, Spatial Hypertext Workshop*.
- 125.Kerne, A., combinFormation: Generative Visual Visceral Spatial Hypertext Collections, Shipman, F., Rosenberg, J., *ACM Hypertext 2003, Spatial Hypertext Workshop*.
- 126.Schiphorst, T., Kerne, A., Kozel, S., Whisper: Wearable Handheld Intimate System for Personal Environmental Response, *ACM CHI 2002, Physiological Computing Workshop*.
- 127.Kerne, A., The Interface Ecology Research Agenda for HCI, *ACM CHI 1999, Development of an HCI Research Agenda Workshop*.
- 128.Kerne, A., Emergent Collage Browsing, *Interactive Systems for Supporting the Emergence of Concepts & Ideas, ACM CHI 1997 Emergence Workshop*.

PUBLICATIONS – OTHER

- 129.Kerne, A. Lang, M., Djembe Drumming, *Program for the World Music Institute African Troubadours Festival*, 1995.

PHD ADVISEES

1. Jack Stenner, PhD, Architecture / Visualization (co-advisor with Carol Lafayette), 8/07.
Playas: Homeland Mirage - A Case Study in the Understanding of Critical Reflection in a Digital Media Artwork,
Current position: Associate Professor of Art + Technology, University of Florida.
2. Eunyee Koh, PhD, Computer Science, 8/08.
Representing Combined Searches with Image+Text Surrogates extracted from Web Pages.
Current position: Principal Scientist, Adobe Research Laboratories, San Jose.
3. Z. O. Toups, PhD, Computer Science, 8/10.
Team Cognition: A Location-Aware Augmented Reality Game Teaches Implicit Coordination Skills to Emergency Responders.
ACM Computer Supported Cooperative Work (CSCW) Doctoral Consortium 2008.
Summer 2009: Intern, Yahoo! Research, Santa Clara (Elizabeth Churchill).
Current position: Associate Professor, Games and HCI, Department of Computer Science, New Mexico State University.
4. Andrew Webb, PhD, Computer Science, 5/17.
Phrasing Bimanual Interaction for Visual Design.
Summer 2012 Internship, Yahoo! Research, Barcelona, Spain (Alejandro Jaimes).
Summer 2014 Internship, CWI, The Netherlands (Pablo Cesar).
Summer 2015 Internship, Microsoft Research (Michel Pahud, Ken Hinckley, Bill Buxton).
ACM Creativity and Cognition Graduate Symposium 2015.
Texas A&M Dissertation Fellowship, 2015-16.
Current position: Assistant Professor of Computer Science and Engineering, LSU.
5. William Hamilton, PhD, Computer Science, 8/18.
Supporting Participation through Live Media.
Summer 2013 Internship, Motorola Research (Frank Bentley).
Summer 2014 Internship, Microsoft Research (Kori Inkpen).
Summer 2015 Internship, Microsoft Research (Kori Inkpen).
ACM Computer-Human Interaction (CHI) Doctoral Consortium 2016.
2018 TAMU Computer Science and Engineering Graduate Research Excellence Award.
2018 TAMU Distinguished Graduate Student Award for Excellence in Research.
Current position: Assistant Professor, Department of Computer Science, New Mexico State University.
6. Rhema Linder, PhD, Computer Science, 5/19.
Analyzing Creative Processes: Qualitative Methods Meets Visual Analytics
Summer 2014 Internship, Adobe Research (Eunyee Koh).
Summer 2015 Internship, Microsoft Research (Jaime Teevan)
Summer 2016 Internship, Microsoft Research (Jaime Teevan).
IEEE InfoVis Doctoral Consortium 2016.
Current position: Postdoctoral Research, Agents, Interactions and Systems, University of Tennessee.
7. Yin Qu, PhD, Computer Science, 8/19.
Integrating Visual and Semantic Exploration with Curation to Support Information-Based Ideation.
Summer 2012 Internship, Google.
Summer 2013 Internship, Google.
ACM SIGIR Conf on Human Information Interaction and Retrieval (CHIIR) Doctoral Consortium 2016.
Current position: Software Engineer, Google.
8. Nic Lupfer, PhD, Computer Science, 12/20.
Collaborative Multiscale Design Curation: Supporting Creativity in Project-Based Learning.
Summer 2018 Internship, Microsoft Research (Gina Venolia).
2017 TAMU Computer Science and Engineering Graduate Mentoring Excellence Award.

Current position: Senior Full Stack Engineer, Mapware.

9. Ajit Jain, PhD, Computer Science, 5/21.
How to Support Situated Design Education through AI-Based Analytics
 Summer 2016 Internship, Google.
 Summer 2017 Internship, Adobe Research (Eunye Koh).
 ACM Creativity and Cognition Graduate Symposium 2017.
 Summer 2018 Internship, CWI, The Netherlands (Pablo Cesar).
 Current positions: Senior Engineer, Data Architecture & Research, Audigent.
 Co-founder, Gumboot Studio.

MASTERS ADVISEES

1. Madhur Khandelwal, M.S. Computer Science, 5/04.
Semantics of Time Travel in a Generative Information Space. Current position: Engineering Lead, Facebook.
2. Mirko Mandic, M.S. Computer Science, 12/04.
Visualizing Rhythms of Intimacy in Email Communication.
 Current position: Design Leadership, Business Messaging, Facebook.
 Previous: Microsoft Digital Life + Work, Senior UX Designer. Microsoft.
 Head of Digital UX (Sr. Manager), Amazon Go.
3. Andrew Webb, M.S., 8/07.
A Transitory Interface Component for In-Context Visualization and Adjustment of a Value.
 → PhD (see above).
4. Abhinav Mathur, M.S., 12/09.
Meta-Metadata: An Information Semantic Language and Software Architecture for Collection Visualization Applications.
 Current position: Sr. Software Engineer, Walmart eCommerce.
5. Nabeel Shahzad, M.S., 12/11.
S.IM.PL Serialization: Type System Scopes Encapsulate Cross-Language, Multi-Format Information Binding.
 Current position: Senior Software Engineer, Microsoft.
6. Jon Moeller, M.S. student, 2010-12.
 Current position: Senior Software Engineer, Google.
7. Ross Graeber, M.S. student, 2004-7,
 Current position: Senior Software Engineer, Schlumberger.
8. Nic Lupfer, M.S., 12/14,
Beyond the Feed and Board: Holistic Principles for Expressive Web Curation.
 → PhD (see above).
9. Shenfeng Fei, M.S., 12/14.
Co-located Collaborative Information-based Ideation through Embodied Cross-Surface Curation.
 Current position: Senior Software Engineer, Google.
10. Ajit Jain, M.S., 12/14.
TweetBubble: A Twitter Extension Stimulates Exploratory Browsing.
 → PhD (see above).
11. Feiyu Yu, M.S., 8/17.
Presentation in Free-Form Space: Managing Ambiguity with Hypermedia Pathways while Supporting Ideation.
 Summer 2015 Internship, Google.
 Current position: Senior Software Engineer, LinkedIn.

12. Matthew Carrasco, M.S., 12/17.
Queering Online Places: LGBT+ Performances Motivate Social Media Design.
 Current position: Computer Science Research and Development: Member Level, Sandia National Laboratories.

RESEARCH EXPERIENCES FOR UNDERGRADUATES

1. Alex Grau, 2004-07, combinFormation text processing and interaction logging.
 Current position: Software Engineer, Moog Music.
2. William Hamilton, 2008-10, Team Coordination (TeC) Game design and data analysis.
 2009 TAMU Computer Science and Engineering Undergraduate Researcher of the year Award (as a junior),
 2010 TAMU Computer Science and Engineering Undergraduate Researcher of the year Award (as a senior).
 2010 Honorary Mention CRA Outstanding Undergraduate Researcher Award.
 PhD, 2018, Texas A&M, Computer Science.
 Publications from undergrad: [44][45][84][118].
 Current position: Assistant Professor, Department of Computer Science, New Mexico State University.
3. Jon Moeller, 2008-10, scanning FTIR multi-touch sensor, ZeroTouch, combinFormation video, IR model,
 term dictionary, bug fixes, web launch.
 Publications from undergrad: [82][85].
 → Masters (see above).
4. Nic Lupfer, 2009-10, combinFormation.
 M.S., 2014, Texas A&M, Computer Science.
 Publications from undergrad: [43].
 → Masters (see above).
5. Sarah Berry Cranston, 2006-7, Using Image and Text Surrogates to Promote Creativity in the Design Process.
 Publications from undergrad: [57][83].
 Current position: UI Developer, Duck Creek.
6. Megan Schneider, 2007, A Preference Editor Generator through Semantic Translation. M.S. Computational
 Linguistics, University of Washington.
 Current position: Principal Machine Learning Engineer, Textio.
7. Jason Jho, 2000-1, CollageMachine / JumboScope installation.
 Current position: CTO, Anvyl.
8. David Sturdivant, 2007, combinFormation Procedurally Forming Combined Image-Text Surrogates.
 Publications from undergrad: [51].
 Current position: Senior Software Architect, Tyler Technologies, Plano, Texas.
9. David Lyons, 2010-, combinFormation video.
 Current position: 3D Artist, WebVR Software Engineer, Within (Virtual Reality).
10. Brett Hlavinka, 2010, Trans-surface Rummy.
 Current position: Owner, Technology Consultant, Solve Right Consulting.
11. Julio Montero-Rexach, 2011-13, ZeroTouch electronics and firmware.
12. Thomas Robbins, 2011-12, Pen-in-hand Command.
 Publications from undergrad: [39].
 Current position: Student, SMU.
13. Bryant Poffenberger, 2011-13, InfoComposer, IdeaMâché.
 Publications from undergrad: [36].
 Current position: Software Engineer II, Elastic.

14. Oliver Garretson, 2013-14, game streaming ethnography.
Publications from undergrad: [34].
15. Clair Snodgrass, 2013-14, digital curation ethnography.
Publications from undergrad: [33].
Current position: Environmental Compliance Coordinator, Dominion Energy.
16. Yvonne Chen, 2013. NSF Graduate Fellowship.
Publications from undergrad: [2].
Current position: Senior Software Engineer, ExtraHop Networks..
17. Katherine Chan, 2014.
Current position: Software Engineer, Houzz.
18. Matthew Carrasco, 2014-15, Exploratory Search Interface.
M.S., 2017, Texas A&M, Computer Science.
Publications from undergrad: [24][30][2][113].
→ Masters (see above).
19. Elizabeth Kellogg O'Donnell, 2014-15, Supporting Creative Visual Design with Pen and Multi-touch Gestures.
Publications from undergrad: [26][30].
Current position: Senior Software Engineer, National Instruments.
20. Kade Keith, 2014-16, Monadic Visualization of Metadata Networks to Support Exploratory Browsing.
Publications from undergrad: [24][30][2][113].
Current position: Software Engineer III, Hatched Labs.
21. Cameron Hill, 2014-15, free-form web curation, web semantics, embodied pen+touch interaction.
Publications from undergrad: [30].
Current position: Senior Software Development Engineer II, Amazon.
22. Zachary Brown, 2014-16, web semantics, embodied pen+touch interaction.
Publications from undergrad: [26].
Current position: Software Engineer, Odyssey Space Research.
23. John Goen, 2015, Body-based IdeaMâché.
24. Mark Poscablo, 2015, Body-based IdeaMâché.
Prior position: IT Developer/Engineer at Hewlett Packard Enterprise.
Current position: Software Engineer, Varian Medical Systems.
25. Alyssa Valdez Musil, 2015-17, free-form web curation, collaborative pen+touch interaction.
Publications from undergrad: [19][21][24].
Current position: Web Developer, Flocknote.
26. Nicolas Botello, 2016, collaborative live media curation.
Publications from undergrad: [18][22].
Current position: Software Engineer, Zume.
27. Matt Kiihne, 2016, free-form web curation.
28. Hannah Fowler, 2016-19, qualitative data analysis in design, ideation, pen+touch interaction and live media.
2019 Honorary Mention CRA Outstanding Undergraduate Researcher Award.
Publications from undergrad: [19][20][21].
Current position: Program Manager II, Microsoft.
29. Tyler Tesch, 2016-17, web semantics.
Publications from undergrad: [22]
Current position: Software Engineer, Google.

30. Alexandra Stacy, 2016-17, presence interfaces for collaborative live media curation.
Publications from undergrad: [22][71].
Current position: Software Development Internet, Persistent Systems.
31. Ryan Garmeson, 2017-18, pen+touch interface design.
32. Aaron Perrine, 2018-19, LiveMâché image pyramids + folio subsystem.
Publications from undergrad: [18][68].
Current position: Software Developer, Microsoft.
33. Gabriel Britain, 2019-20, design education dashboard.
Publications from undergrad: [18][68].
Current position: Human-Computer Interaction MS, Georgia Tech University.
34. Michaela Matocha, 2019, changing representations to support design creativity.
35. Rebecca McFadden, 2019, embodied pen+touch design curation.

EXHIBITIONS AND INSTALLATIONS

April 2015	Lupfer, N.*, Hamilton, W.*, Webb, A.M.*, Linder, R.*, Edmonds, E., Kerne, A., <i>The Art.CHI Gallery: An Embodied Iterative Curation Experience</i> (large scale), ACM CHI Interactivity, Seoul, South Korea.
May 2012	Moeller, J.*, Kerne, A., Hamilton, W.*, Webb, A.M.*, Lupfer, N.* <i>ZeroTouch: An Optical Multi-Touch and Free-Air Interaction Architecture</i> (large scale), ACM CHI Interactivity, Austin, Texas.
May 2011	Moeller, J.*, Kerne, A., <i>ZeroTouch: A Zero-Thickness Optical Multi-Touch Force Field</i> (large scale), ACM CHI Interactivity, Vancouver, Canada.
August 2006	Stenner, J., Kerne, A., Williams, Y., <i>Playas: Homeland Mirage</i> , ISEA / ZeroOne, jury including Steve Dietz, San Jose, California.
June 2006	Toups, Z., Overby, K., Kerne, A., Graeber, R., Cooper, T., Aley, E., <i>Censor Chair</i> , ACM SIGCHI Intl. Conf on Advances in Computer Entertainment Technology, jury including Victoria Vesna, Hollywood, California.
November 2005	Stenner, J., Kerne, A., Williams, Y., <i>Playas: Homeland Mirage</i> , ACM Multimedia Conference Art Exhibition, jury including Jeffrey Shaw, Alejandro. Jaimes, Singapore.
May 2005	Kerne, A., and Interface Ecology Lab, <i>combinFormation</i> , International Festival of Electronic Arts (invited), jury including Peter Weibel, Maribor, Slovenia.
August 2001	Kerne, A., <i>CollageMachine</i> , ACM SIGGRAPH 2001, Gallery/N-Space, Los Angeles.
June 2001	Kerne, A., <i>CollageMachine</i> , in <i>Brave New Word, Works and Process</i> , Guggenheim Museum, New York.
May 2001	Kerne, A., <i>CollageMachine</i> , Electronic Literature Organization Awards, New York.
April - May 2001	Kerne, A., and students of Tufts Comp-150, <i>Jumbo.Scope</i> (with <i>CollageMachine</i>), Boston Cyberarts Festival.
April 2001	Kerne, A., <i>CollageMachine</i> , Digital Arts and Culture, Providence, Rhode Island.
2000 - 2001	Kerne, A., <i>CollageMachine</i> , New York Digital Salon (NYC, Spain, London, Beijing).
1997	Kerne, A., Lang, M., Kofi, F., <i>Coded Messages: CHAINS</i> , New York Digital Salon.
1995	Kerne, A., Lang, M., Kofi, F., <i>Coded Messages: CHAINS</i> , Springtij Festival, Amsterdam.

RESIDENCIES

Spring 2013	University of Nottingham The Mixed Reality Lab, Department of Computer Science, UK. Horizon Digital Economy Research Institute <i>Sabbatical Fellow</i>
June 2008	Dagstuhl Seminar on Contextual and Social Media, Germany.
June - July 2002	V2 Lab, Schouwburg Theatre, Rotterdam, The Netherlands.
February 2002	Weblab Crossover, Jacksonville, Florida, USA.

PRESS

Minerva Baumann. [NMSU part of multi-university network to promote cyber expertise](#). *The Las Cruces Bulletin*. 21 July 2020.

Hannah Conrad. [Quantifying creativity: Undergraduate Research Recognized by the Computing Research Association](#). Texas A&M Engineering News. 22 February 2019.

Trey Reeves. [A&M researchers to analyze #RiseUpOctober in real time](#). *The Batt*. 22 October 2015.

Marsha Lewis. [Invisible Touch Screens](#). *Philadelphia Inquirer*. 28 May 2014.

Lesley Henton, [Some College Students Aren't Waiting Until Graduation to Start a Business](#), *Texas Monthly*. 11 February 2013.

No Author. [ZeroTouch Sensor: Ready For Large Televisions and Gaming](#). *Slashdot*. 15 May 2012.

New Media Consortium, [Horizon Project Short List 2012 Higher Education Edition](#).
<http://horizon.wiki.nmc.org/file/view/2012-Horizon.HE-Shortlist.pdf>.

Garawffice Group. [Best Buy Future Innovators - Zero Touch Longform](#). Summer 2012.
TV ad featured with prominent TV shows, such as Mad Men, 60 Minutes, and the NBA Finals.

Amber Jaura. Futuristic touch: ZeroTouch technology offers surface-free sensing, *The Batt*. 19 April 2012.

Shane McAuliffe. A&M Students Create ZeroTouch Technology. *KBTX TV*. 30 Jan 2012

Tony Okonski. ZeroTouch: A New Multifinger Sensing Technology. *Texas A&M Engineer*. Fall 2011. COVER STORY.

Graeme McMillan. [ZeroTouch Lets You Paint Pictures in the Air](#). *Time*. 11 May 2011.

Alyssa Danigelis. [Technology turns air into a multi-touch screen](#). *MSNBC*. 13 May 2011.

Alyssa Danigelis. [Technology turns air into a multi-touch screen](#). *Discovery News*. 13 May 2011.

Christopher Trout. [ZeroTouch 'optical multi-touch force field' makes a touchscreen out of just about anything](#). *Engadget*. 12 May 2011.

Kat Hannaford. [The Touchscreen with No Screen](#). *Gizmodo*. 12 May 2011.

Clay Dillow. [New ZeroTouch Interface is a Touchscreen Without the Screen](#). *PopSci*. 12 May 2011.

Nick Barber. [Invisible Touch Interface Creates Multitouch 'Force Field'](#). *PCWorld*. 10 May 2011.

Jim Giles. [ZeroTouch makes any screen touchable](#). *New Scientist*. 11 May 2011.

angry tapir. [Creating a "Force Field" Invisible Touch Interface](#). *Slashdot*. 10 May 2011.

No author. Des collages virtuels, logiques ou surréalistes, et qui doivent rester éphémères. *Le Monde*. 2 March 2000.

PRESENTATIONS

June 2022	Center for Advancing Human-Machine Partnership, George Mason University, Fairfax, Virginia. <i>How to Investigate Creativity, Participation, and the Future of Work</i>
June 2022	Work in the Age of Intelligent Machines Conference, Washington, DC. <i>To Research the Future of Work: Integrate Fields to Address the Sociotechnical</i>
June 2022	Computer Science Seminar, George Mason University, Fairfax, Virginia. <i>How to Investigate Creativity and Participation.</i>
June 2022	Seminar on the Future of Work. National Academies Board on Human-Systems Integration. <i>To Research the Future of Work: Integrate Fields to Address the Sociotechnical</i>
May 2022	NSF CISE Community Office Hours <i>Empathetic Reviewing</i>
April 2022	NSF CISE CAREER Proposal Writing Workshop <i>Human-Centered Computing</i>
March 2022	Computer Science Seminar, University of Illinois, Chicago. <i>How to Investigate Creativity and Participation.</i>
February 2022	Future of Work PI Meeting, NSF. <i>Access and Inclusivity Panel Facilitator.</i>
February 2022	CRA Career Mentoring Workshop, Washington, DC. <i>Human-Centered Computing</i> with Dan Cosley.
February 2022	ATLAS Colloquium, University of Colorado, Boulder. <i>How to Investigate Creativity and Participation.</i>
January 2022	AI Tea, National Science Foundation, Alexandria, Virginia. <i>How to Investigate Creativity and Participation.</i>
December 2021	Future of Work PI Meeting, NSF. <i>Knowledge and Creative Work Panel Facilitator.</i>
December 2021	ex(situ Lab, Université Paris-Saclay / Inria, France. <i>How to Investigate Creativity and Participation.</i>
February 2020	Department of Computer Science, New Mexico State University. <i>Combining New Media Building Blocks to Support Creativity + Cooperation.</i>
February 2020	AI-NSF Workshop. ICT Cyber Infrastructure Architect Team. New Mexico State University. <i>NSF Overview: Organization and Programs.</i>
February 2020	AI-NSF Workshop. ICT Cyber Infrastructure Architect Team. New Mexico State University. <i>NSF Proposal Writing: An Unofficial Perspective.</i>

February 2020	Department of Computer Science and Engineering, Texas A&M University. <i>Combining New Media Building Blocks to Support Creativity + Cooperation.</i>
December 2019	School of Arts, University of Aalto, Helsinki, Finland. <i>Combining New Media Building Blocks to Support Creativity + Cooperation.</i>
August 2018	National Science Foundation, Alexandria, Virginia. <i>Computing for Participation, Creativity and Diversity.</i>
March 2016	Google, Mountain View, California. <i>Investigating Ideation: Media, Modalities and Methodology.</i>
March 2016	Berkeley Institute of Design, University of California, Berkeley. <i>Investigating Ideation: Media, Modalities and Methodology.</i>
December 2015	Adobe Research, San Jose, California. <i>Investigating Ideation: Media, Modalities and Methodology.</i>
June 2015	School of Computer Science, University of St. Andrews, St. Andrews, Scotland, UK. <i>The Future of Human Expression: Ideation–Curation–Body-based.</i>
February 2015	Distinguished College of Arts and Sciences Colloquium Lecture. New Mexico State University, Las Cruces, New Mexico. <i>The Future of Human Expression: Curation, Games, and Body-based Interaction.</i>
July 2014	Microsoft Research, Redmond, Washington. <i>Embodying Ideation + Play.</i>
November 2012	Distinguished Lecture. Mixed Reality Lab, Department of Computer Science, University of Nottingham, UK. <i>Embodied Computing: Sensing + Games + Information.</i>
August 2012	School of Computing, Georgia Tech, Atlanta. <i>Embodied Interaction: Sensing + Games + Information.</i>
June 2012	Department of Computer Science, University of Houston. <i>Human-Centered Computing for Creativity, Expression, and Participation.</i>
February 2012	Department of Computer Science and Engineering, University of Washington, Seattle. <i>Human-Centered Computing for Creativity, Expression, and Participation.</i>
February 2012	Department of Computer Science and Engineering + School of Library and Information Sciences, University of North Texas, Denton. <i>Human-Centered Computing for Creativity, Expression, and Participation.</i>
December 2011	MIT Media Lab, Cambridge, Massachusetts. <i>Human-Centered Computing for Creativity, Expression, and Participation.</i>
November 2011	Yahoo! Research, Barcelona, Spain. <i>Human-Centered Computing for Creativity, Expression, and Participation.</i>
November 2011	Universitat Pompeu Fabra, Barcelona, Spain. <i>Human-Centered Computing for Creativity, Expression, and Participation.</i>
October 2011	Stanford University, Palo Alto, California. <i>Human-Centered Computing for Creativity, Expression, and Participation.</i>
Aug 2010	University of Colorado, Boulder. <i>Computing for Creativity and Cooperation.</i>

March 2010	Rutgers University, New York. <i>Computing for Creativity and Cooperation.</i>
March 2010	Columbia University, New York. <i>Computing for Creativity and Cooperation.</i>
March 2010	NYU Media Research Lab, New York. <i>Computing for Creativity and Cooperation.</i>
November 2008	Electronic Arts, Vancouver, Canada. <i>Iterative Design of a Creativity Support Tool: combinFormation.</i>
June 2008	ACM Multimedia Program Committee Workshop: Hot Topics in Multimedia Research, Technische Universität Darmstadt - Multimedia Communications Lab, Germany. <i>A Mixed-Initiative Information Composition Platform for Supporting Discovery</i>
June 2008	University of Amsterdam, The Netherlands. <i>Creative and Expressive Systems.</i>
June 2008	Dagstuhl Seminar on Contextual and Social Media, Germany. <i>A Mixed-Initiatives Philosophy for Human Centered Contextual Media Systems.</i>
June 2008	University of Florence, Italy. <i>Creative and Expressive Systems.</i>
April 2008	University of Illinois Urbana-Champaign (UIUC). <i>Creative and Expressive Systems.</i>
March 2007	Invited Conference Plenary Address: Intersection: A Conversation Between Art and Science on Information Visualization SUNY Oswego, New York. <i>Creative and Expressive Systems.</i>
March 2007	University of Maryland Human Computer Interaction Lab. <i>Creative and Expressive Systems.</i>
March 2007	NYU Media Research Lab, New York. <i>Creative and Expressive Systems.</i>
December 2006	NSF PIs Meeting: Research and Evaluation on Education in Science and Engineering, <i>Facilitating Information Discovery in Invention Education: Collecting Prior Work through Mixed-Initiative Composition of Image and Text Surrogates</i> (poster).
August 2006	IBM Almaden Research Center. <i>A Mixed-Initiative System for Representing Collections as Compositions of Image and Text Surrogates.</i>
May 2005	University of Ljubljana, Slovenia. <i>combinFormation: Mixed-Initiative Composition of Image and Text Surrogates.</i>
Sept2004	IBM Research Labs, Austin, Texas. <i>Expressive and Personal Interface Ecosystems.</i>
March 2004	Texas A&M Cognoscenti (Cognitive Psychology Colloquium). <i>Information as a Stimulus for the Discovery of Remote Associations.</i>
April 2002	SUNY (Oswego), USA. <i>Emergent Collage Browsing.</i>
April 2002	University of Waikato, New Zealand. <i>Emergent Collage Browsing.</i>
March 2002	Interactive Institute, Stockholm, Piteau, Sweden. <i>Conceptual Space of Collage.</i>
October 2001	Simon Fraser University (Surrey Campus), Canada. <i>Emergent Collage Browsing.</i>

August 2001	Banff Centre New Media Institute, Canada. Unforgiving Memory and Human Generosity summits: <i>Representations of Relation, Emergent Collage Browsing.</i>
August 2001	ACM SIGGRAPH, Los Angeles, USA. <i>Streaming Representations / Emerging Meanings</i> in the “Moving Images” Panel. <i>Dynamic Collage Layout</i> in The Studio.
January 2001	Xerox PARC, Palo Alto, California, USA. <i>CollageMachine.</i>
December 2000	ISEA 2000, Paris, France. <i>CollageMachine.</i>
April 1997	Performance and Technology Conference (performance studies), Atlanta, USA. <ul style="list-style-type: none"> • <i>Ecologies of the Interface</i> • <i>Providing Content: Ecologies of Creativity and Efficiency</i> Panel
1996	Inroads/Africa Conference, Arts International, <i>Digital Representation: Access to Communications Technology</i> , Panel Facilitator, New York, USA.
1994	Pan-African Composers Forum. International Centre for African Music and Dance, University of Ghana, Legon, Ghana. <i>Screaming with Machines: Dead Animals, Live Circuits, Human Voice.</i>

Service

EDITOR

2014 Pipek, V., Liu, S., Kerne, A., Editors, *JCSCW*, Special Issue on Crisis Informatics and Collaboration. 23(4), August 2014.

STEERING

2016- ACM Creativity and Cognition Steering Committee.

CHAIR

2022-24 General Chair. Bailey, B., Latulipe, C., Kerne, A.
ACM Creativity and Cognition 2024, Chicago, IL.

2017-19 Program Chair. Kerne, A., Latulipe, C.
ACM Creativity and Cognition 2019, San Diego, CA.

2018 Workshop Co-Chair. Dalsgaard, P., Halskov, K., Frich, J., Biskjaer, M.M., Kerne, A., Lupfer, N.*
Designing interactive systems to support and augment creativity - a roadmap for research and design, ACM DIS 2018.

2017-18 Art Chair. Schiphorst, T., Andersen, K., Kerne, A., Courchesne, L.
ACM CHI 2018, Denver, Colorado.

2016-17 Art Chair. Kerne, A., Schiphorst, T., Oh, H., Harriman, J.
ACM CHI 2017, Denver, Colorado.

2014-15 Papers Chair. Kerne, A., Shamma, D.A.
ACM Creativity and Cognition 2015, Glasgow, Scotland.

2015 Workshop Co-Chair. England, D., Candy, L., Latulipe, C., Schiphorst, T., Edmonds, E., Kim, S. Clark, S., Kerne, A., *Art.CHI*, ACM CHI 2015, Seoul, S. Korea.

2013 Workshop Co-Chair. Kerne, A., Webb, A.M.*, Latulipe, C., Carroll, E., Drucker, S.M., Candy, L. Höök, *Evaluation Methods for Creativity Support Tools*, ACM CHI 2013, Paris, <https://ecologylab.net/workshops/creativity>.

2012 Workshop Co-Chair. Kerne, A., Latulipe, C., Carroll, E., Webb, A.M.*, *Evaluation Methods for Creativity Support Tools*, Design Computing and Cognition 2012, College Station, TX.

2010 Program and General Co-Chair. Kerne, A., Toups, Z.*, Elam, T.
Texas Games and Virtual Environments Symposium 2010, College Station, TX.

2010 Workshop Co-Chair. Kerne, A., Nack, F.
Interactive Multimedia Computing for Creativity and Expression, ACM Multimedia 2010, Florence, Italy.

2010 Program Co-Chair and Exhibition Curator.
ACM Multimedia Interactive Art Program, Florence, Italy.

2009 Program Co-Chair and Exhibition Curator.
ACM Multimedia Interactive Art Program, Beijing, China.

2008 Program Co-Chair and Exhibition Curator.
ACM Multimedia Interactive Art Program, Vancouver, Canada.

2004 Workshop Chair. *Recombinant Information*.
Conference on Computational Semiotics in Games and New Media (CoSIGN) 2004.

PROGRAM COMMITTEE / RESEARCH PROPOSAL PANEL

NSF Research Proposal Recommendation Panel	2019 2018 2017 2016 2015 2013 2012 2011 2010 2009*2 2008 2007 2005 2005 2004
ACM CHI Associate Chair	2016 2013 2012 2011 2009 2007
ACM CHI Best Papers Committee	2016
ACM CHI Art Awards Committee	2016
ACM Interactive Surfaces and Spaces Best Demo Panel	2016
ACM Creativity and Cognition Graduate Symposium Panel	2015
ACM Interactive Tabletops and Surfaces PC	2012
ACM TEI PC	2012 2011
ACM/IEEE Joint Conference on Digital Libraries (JCDL) PC	2012 2011 2010 2009 2008
ACM Creativity & Cognition PC	2011 2009 2007
ACM Multimedia TPC	2012 2011 2008 2007
Sketch-Based Interfaces and Modeling (SBIM) PC	2011
ACM DocEng PC	2010 2009
ACM IUI PC	2010
Intl. WWW Conference PC	2009
NSF Media, Arts, Sciences & Tech Workshop PC	2009
ACM Intl. Multimedia Modeling PC	2009 2008
ACM SIGGRAPH Sketches and Posters PC	2007

REVIEWING

UK Engineering and Physical Sciences Research Council (EPSRC)	2018
Journal of the Association for Information (JASIST)	2018 2017
ACM Creativity and Cognition	2017
JCSCW	2015
ACM UIST	2016 2014 2012 2011 2007 2002
ACM Computing Surveys	2012
ACM Transactions on Computer Human Interaction	2016 2011
J Visual Com & Image Rep	2010
ACM Tabletop	2010
IEEE Transactions on Multimedia	2008

ACM Transactions on the Web	2008
New Review of Hypermedia and Multimedia	2008 2009
Applied Ontology Journal	2008
ACM CHI	2017 2008 2006 2005 2004
IEEE Computing	2007
ACM Multimedia	2006 2005 2004
ACM CSCW	2006
ACM SIGGRAPH, Art Gallery	2006
International Journal of Digital Libraries	2005
ACM DIS	2004
Computational Semiotics in Games and New Media	2004

DEPARTMENT COMMITTEES

<i>University of Illinois Chicago (UIC) Department of Computer Science</i>	
Promotion and Tenure Committee	2022-23
Computer Science Department Advisory Committee	2022-23
Diversity, Equity, and Inclusion (DEI) Committee	2022-23
Teaching Load Committee	2022-23
CS + Design Advisory Council Committee	2022-23
<i>Texas A&M University (TAMU) Department of Computer Science and Engineering</i>	
Tenure/Track Faculty Search Committee Lead search for human-computer interaction faculty.	2018-19
Colloquium Committee	2017-18 2014-15 2013-14 2010-11 (chair) 2009-10 (chair) 2008-09 (chair) 2002-03
Research Computing Services Committee	2016-17
Promotion and Tenure Committee	2015
Graduate Advisory Committee	2013-14
Undergraduate Curriculum Committee	2011-12
Joint Computer Science / Visualization Committee	2010-11 2009-10
Visualization Dept. Search Committee: Games and Interactive Media	2010-11
Web Advisory Committee	2010-11 (chair) 2008-09 2004-05 (chair) 2003-04
Undergraduate Recruiting Committee	2009-10 (chair) 2008-09
Computing Infrastructure Committee	2006-07
Library Committee	2002-03

WORKSHOPS + COURSES + PI MEETINGS: PARTICIPATE

AAAS SEA Change Building Gender Equity Course	2021 Spring
NSF CISE Education and Workforce PI and Community Meeting	2021 March
Microsoft Includes Workshop	2021 March
NSF FW-HTF PI Meeting	2020 December
Google People + AI Research Symposium	2020 November
NSF Smart and Connected Health PI Workshop	2020 January
NSF CIRCL Cyberlearning: Exploring Contradictions in Achieving Equitable Futures	2019 October
NSF SaTC PI Meeting	2019 October

EXTERNAL THESIS EVALUATION

December 2021	Viktor Gustafsson. Doctoral Dissertation External Evaluator: <i>Designing Persistent Player Narratives in Digital Game Worlds.</i> School of Sciences and Technologies of Information and Communication. Université Paris-Saclay, Orsay, France
December 2019	Khalil Klouche. Doctoral Dissertation Opponent: <i>Explorable Information Spaces: Designing Entity Affordances for Fluid Information Exploration.</i> School of Arts. University of Aalto, Helsinki, Finland.
November 2012	Karen Tanenbaum. Doctoral Dissertation External Evaluator: <i>User Perceptions of Adaptivity in Ubiquitous Systems: A Critical Exploration.</i> School of Interactive Arts & Technology (SIAT), Simon Fraser University, Surrey, British Columbia, Canada.
March 2010	Jürgen Scheible. Doctoral Dissertation External Evaluator: <i>Empowering Mobile Art Practice: A Recontextualization of Mobile and Ubiquitous Computing.</i> School of Arts. University of Aalto, Helsinki, Finland.

CREATIVITY SUPPORT RESEARCH PROTOTYPES USE IN COURSES ON ASSIGNMENTS – PROVIDE PEDAGOGY & SUPPORT

In collaboration with my advisees, in the Interface Ecology Lab, I have developed a series of functional research prototype systems, which support spatial organization and visual thinking, to support creativity through people’s processes of seeking and working with information. A hallmark is to provide a new medium for iterative curation of mixed media through design of a connected whole. Over the years have made these probe systems available to many students, in many course offerings. We have conducted field studies while supporting project-based learning and ideation.

- *CollageMachine*. This research prototype was initially developed during my PhD and was central to my dissertation. It introduced the idea of web-based information (initially, HTML documents and images) as a medium for sampling and composing, analogous to sound. The primary mechanisms were to crawl the web, starting from an initial search or web document. Each encountered document was broken down into a set of image elements. These elements were automatically composed into a visual whole using an underlying coarse grid system. Minimal functionality was provided to enable users to manipulate the elements of the composition.
- *combinFormation*. Extended *CollageMachine* to form a mixed-initiative system, in which the user worked in concert with agents to shape the visual composition and to provide ongoing feedback on which information was important to them, in the context of their task. Each document was now deconstructed into sets of text and image elements, which became candidates for the visual composition. A peripheral hot space was used by the agents for automatic composition, while an inner cool space was reserved for the user’s direct manipulation composition. We articulated the medium as *information composition*, which affords representing a curated set of clippings as a visual semantic connected whole to support ideation by promoting creative cognition of relationships among curated clippings and annotations.
- *InfoComposer*. The first information composition prototype in the series that was direct manipulation only, in response to priorities articulated by users. Like the previous probes, implemented as client-side Java.
- *IdeaMâché*. The first 3-tier web app probe stores user’s compositions / curations in the cloud, instead of on their local machine. Evolution of the medium from information composition to free-form web curation. *Free-form web curation* is designed for creating new conceptual and spatial contexts, in which people discover and interpret relationships, through visual thinking.
- *LiveMâché*. Extends *IdeaMâché* to support collaborative free-form web curation in real time. Later versions add learning and creativity analytics dashboard.

<i>year</i>	<i>semester</i>	<i>university</i>	<i>course #</i>	<i>course name</i>	<i>professor</i>	<i>creativity support environment</i>	<i>students</i>
16	years			75 course offerings	21 professors		9233
2020	fall	Georgia Tech	MECH 6102	Designing Open Engineering Systems	Julie Linsey	LiveMâché	38
2020	fall	Texas A&M	CSCE 315	Programming Studio	Shawna Thomas	LiveMâché	172
2020	fall	Texas A&M	CSCE 315	Programming Studio	Robert Lightfoot	LiveMâché	89
2020	fall	Texas A&M	VIST 357	Interaction Design	Jinsil Seo	LiveMâché	10
2020	summer	Shanghai Tech	CDXX 9999	The Science of Human Innovation: From Mind to Market	Tiantian Wang	LiveMâché	14
2020	summer	Georgia Tech	MECH 6102	Designing Open Engineering Systems	Julie Linsey	LiveMâché	3
2020	spring	Texas A&M	CSCE 315	Programming Studio	Robert Lightfoot	LiveMâché	151

2020	spring	Texas A&M	CSCE 315	Programming Studio	McGuire	LiveMâché	40
2020	spring	Texas A&M	ENDS 101	Design Process: Creativity & Entrepreneurship	Stephen Caffey	LiveMâché	20
2020	spring	Georgia Tech	MECH 1770	Mechanical Engineering Design	Julie Linsey	LiveMâché	23
2020	spring	Texas A&M	VIST 357	Interaction Design	Jinsil Seo	LiveMâché	8
2020	spring	Illinois State	ART 202	Digital Media Design	Annie Sungkajun	LiveMâché	16
2020	spring	Illinois State	ATK 380	UI/UX for Games	Annie Sungkajun	LiveMâché	20
2019	fall	Texas A&M	ENGL 321	Literature: Romantic Era	Laura Mandell	LiveMâché	44
2019	fall	Illinois State	ATK 380	Interaction Design for Digital and Mobile Interfaces	Annie Sungkajun	LiveMâché	16
2019	fall	KAIST	ID430	Special Topics in Design V (Body Interface)	Jinsil Seo	LiveMâché	16
2019	spring	Georgia Tech	MECH 1770	Mechanical Engineering Design	Julie Linsey	LiveMâché	38
2019	spring	Texas A&M	CSCE 655	Human-Centered Computing	Andruid Kerne	LiveMâché	19
2019	spring	Texas A&M	VIST 206, 305, 405	Interactive Design Studio	Jinsil Seo	LiveMâché	30
2019	spring	Texas A&M	VIST 357	Interaction Design	Jinsil Seo	LiveMâché	12
2019	spring	Texas A&M	ENDS 101	Design Process: Creativity & Entrepreneurship	Stephen Caffey	LiveMâché	331
2018	fall	Texas A&M	ENDS 101	Design Process: Creativity & Entrepreneurship	Stephen Caffey	LiveMâché	150
2018	fall	Texas A&M	CSCE 315	Programming Studio	Andruid Kerne	LiveMâché	54
2018	spring	Texas A&M	ENDS 101	Design Process: Creativity & Entrepreneurship	Jorge Vanegas	LiveMâché	365
2017	fall	Texas A&M	MEEN 601	Advanced Product Design	Dan McAdams	LiveMâché	44
2017	fall	Texas A&M	ENGL 207	Human Thinking and Digital Culture	Laura Mandell	LiveMâché	35
2017	fall	Texas A&M	ENDS 101	Design Process: Creativity & Entrepreneurship	Jorge Vanegas	LiveMâché	194
2017	summer	Texas A&M	LAND 489	Landscape Architecture History	Jeremy Merrill	LiveMâché	4
2017	spring	Texas A&M	CSCE 667	Seminar: Live Media Places	Andruid Kerne	LiveMâché	12
2017	spring	Texas A&M	ENDS 101	Design Process: Creativity & Entrepreneurship	Andrew Billingsley	IdeaMâché	144
2016	fall	Texas A&M	CSCE 655	Human-Centered Computing	Andruid Kerne	IdeaMâché	31
2016	fall	Texas A&M	ENDS 101	Design Process: Creativity & Entrepreneurship	Andrew Billingsley	IdeaMâché	165
2016	fall	Texas A&M	CSCE 315	Programming Studio	Andruid Kerne	IdeaMâché	101
2016	fall	Texas A&M	COMM 460	Collaborations in Feminism and Technology	Cara Wallis	IdeaMâché	20
2016	spring	Texas A&M	CSCE 315	Programming Studio	Andruid Kerne	IdeaMâché	91

2016	spring	Texas A&M	CSCE 655	Human-Centered Computing	Andruid Kerne	IdeaMâché	12
2016	spring	Texas A&M	ENDS 101	Design Process: Creativity & Entrepreneurship	Jorge Vanegas	IdeaMâché	333
2015	fall	Texas A&M	LAND 240	History of Landscape Architecture I	Galen Newman	IdeaMâché	32
2015	fall	Texas A&M	CSCE 444	Structures of Interactive Information	Andruid Kerne	IdeaMâché	50
2015	fall	Texas A&M	ENDS 101	Design Process: Creativity & Entrepreneurship	Jorge Vanegas	IdeaMâché	220
2015	spring	Texas A&M	LAND 321	Landscape Design IV	Jun-Hyun Kim	Body-based and web IdeaMâché	22
2015	spring	Texas A&M	LAND 240	History of Landscape Architecture I	Galen Newman	IdeaMâché	159
2015	spring	Texas A&M	ENDS 101	Design Process: Creativity & Entrepreneurship	Jorge Vanegas	IdeaMâché	350
2014	fall	Texas A&M	COMM 452	Cultural Studies of Communication Technology	Cara Wallis	IdeaMâché	22
2014	fall	Texas A&M	CSCE 667	Adv. Seminar in Human-Centered Computing & Info	Andruid Kerne	IdeaMâché	15
2014	fall	Texas A&M	ARCH 329	Landscape Construction I	Jun-Hyun Kim	Body-based IdeaMâché	28
2014	fall	Texas A&M	ENDS 101	Design Process: Creativity & Entrepreneurship	Jorge Vanegas	IdeaMâché	370
2014	spring	Prairie View A&M	COMM 1003	Fundamentals of Speech	Toniesha Taylor	IdeaMâché	20
2014	fall	Texas A&M	CSCE 655	Human-Centered Computing	Andruid Kerne	IdeaMâché	21
2014	spring	Texas A&M	LAND 321	Landscape Design IV	Jun-Hyun Kim	Body-based IdeaMâché	20
2014	spring	Texas A&M	ENDS 101	Design Process: Creativity & Entrepreneurship	Jorge Vanegas	IdeaMâché	366
2013	fall	Texas A&M	ENDS 101	Design Process: Creativity & Entrepreneurship	Jorge Vanegas	IdeaMâché	404
2013	spring	Texas A&M	ARCH 689	Visual Thinking: Theories and Methods of Diagramming	Weiling He	Body-based IdeaMâché	15
2013	spring	Texas A&M	ENDS 101	Design Process: Creativity & Entrepreneurship	Jorge Vanegas	IdeaMâché	245
2012	fall	Texas A&M	ENDS 101	Design Process: Creativity & Entrepreneurship	Jorge Vanegas	InfoComposer	225
2012	spring	Texas A&M	ENDS 101	Design Process: Creativity & Entrepreneurship	Jorge Vanegas	InfoComposer	220
2011	fall	Texas A&M	ENDS 101	Design Process: Creativity & Entrepreneurship	Jorge Vanegas	InfoComposer	253
2011	spring	Texas A&M	ENDS 101	Design Process: Creativity & Entrepreneurship	Jorge Vanegas	combinFormation	252
2010	fall	Texas A&M	ENDS 101	Design Process: Creativity & Entrepreneurship	Jorge Vanegas	combinFormation	219
2010	spring	Texas A&M	ENDS 101	Design Process: Creativity & Entrepreneurship	Jorge Vanegas	combinFormation	201

2009	fall	Texas A&M	ENDS 101	Design Process: Creativity & Entrepreneurship	Jorge Vanegas	combinFormation	235
2009	spring	Texas A&M	ENDS 101	Design Process: Creativity & Entrepreneurship	Jorge Vanegas	combinFormation	238
2009	spring	Texas A&M	ENDS 101	Design Process: Creativity & Entrepreneurship	Rodney Hill	combinFormation	168
2008	fall	Texas A&M	ENDS 101	Design Process: Creativity & Entrepreneurship	Jorge Vanegas	combinFormation	246
2008	fall	Texas A&M	ENDS 101	Design Process: Creativity & Entrepreneurship	Rodney Hill	combinFormation	180
2008	spring	Texas A&M	ENDS 101	Design Process: Creativity & Entrepreneurship	Jorge Vanegas	combinFormation	229
2008	spring	Texas A&M	ENDS 101	Design Process: Creativity & Entrepreneurship	Rodney Hill	combinFormation	142
2007	fall	Texas A&M	ENDS 101	Design Process: Creativity & Entrepreneurship	Jorge Vanegas	combinFormation	144
2007	fall	Texas A&M	ENDS 101	Design Process: Creativity & Entrepreneurship	Rodney Hill	combinFormation	202
2007	spring	Texas A&M	ENDS 101	Design Process: Creativity & Entrepreneurship	Jorge Vanegas	combinFormation	168
2007	spring	Texas A&M	ENDS 101	Design Process: Creativity & Entrepreneurship	Rodney Hill	combinFormation	154
2006	fall	Texas A&M	ENDS 101	Design Process: Creativity & Entrepreneurship	Rodney Hill	combinFormation	165
2006	spring	Texas A&M	ENDS 101	Design Process: Creativity & Entrepreneurship	Rodney Hill	combinFormation	169
2005	fall	Texas A&M	ENDS 101	Design Process: Creativity & Entrepreneurship	Rodney Hill	combinFormation	182

Teaching

2016- **Department of Computer Science and Engineering.**
Texas A&M University. College Station, TX.

- Supervise research for 7 completed PhDs, 10 completed M.S. students with thesis, 36 total REUs. Currently supervising 2 PhDs + 3 REUs.
 - Develop new courses. Carry a 1 + 2 teaching load.
 - Invoke project-based learning.
 - Connect theory with practice through extensive course websites [<https://ecologylab.net/courses>]. Since 2011, my courses website has received 134,286 pageviews.
 - Utilize Piazza to facilitate communication among and with students between classes.
-

CS 427 / DES 450 Creative Coding

[2023]

Team teach course in CS + Design program.

This course investigates how contemporary technologies can inspire novel forms of creative practice. It introduces software programming and creative coding techniques within the context of the digital media design. Media artists and designers have been utilizing computers for innovative creative expression since the late 1960s; the recent proliferation of low-cost consumer grade devices with advanced sensing, display, and computing capabilities, such as smart phones, Virtual Reality, drones, 3D printers, and microcontroller kits, marks possibly a new era of creative exploration.

The field of “creative coding” emphasizes the goal of expression, rather than function, and creative coders combine computational skill with creative work in a variety of media. This is a project-based course designed to introduce current creative coding programming paradigms, and investigate the challenges and opportunities that emerge when using new technologies for expressive purposes. The class projects will focus on creative programming for a high resolution, virtual reality environment CAVE2 in the Electronic Visualization Laboratory (EVL).

CS 527 Human-Computer Interaction

CSCE 655 Human-Centered Computing

[2022, 2019, 2016f, 2016s, 2014, 2011, 2010, 2009, 2008, 2007, 2006, 2005, 2004]

I developed a new introductory graduate core methods course. I took initiative, first by suggesting the need for an introductory HCC methods prerequisite, then by developing consensus on its curriculum.

I continuously update this curriculum to keep abreast of new developments in the field, and the evolution of my own understanding of the field through my engagement in the research community.

The curriculum synthesizes iterative design and evaluation methods, graphical and social interaction, graphics and animation, visual principles, game design, object-oriented software engineering, and topics in information and media semantics research. I developed readings—mostly research papers—and assignments.

In the course’s first half, students engage in individual programming, design, and user study projects. In a 9-week final project sequence, students work in teams, providing opportunity to develop a project through an intensive real-world design cycle. Stages include 2 iterations of a proposal, an ethnography, storyboards and lightweight prototypes, 2 cycles of user evaluation, a functional prototype, and a conference style research paper. Some projects carry over into ongoing research and result in peer-reviewed publications. Final projects have addressed web apps, interactive games, curation, exploratory search, artistic installation, and information visualization.

CSCE 315 Programming Studio [2018, 2016f, 2016s, 2014] ~100 students

I call this intensive, integrative course, at junior year's start, *half capstone*. Half capstone initiates students' transition, from skills transmission courses, to project-based learning. I overhauled the curriculum. I teach this as an interdisciplinary design course: integrating software design, interaction design, visual design, and experience design, with qualitative methods and agile task analysis.

One project requires each student team to design and build an engaging, playable multi-player game—using JavaScript, Node.js, MongoDB, WebSockets, CSS, and HTML—so it runs in a web browser. Student response is motivated and creative.

In the process of teaching Programming Studio, my most profound experience (so far) as a teacher emerged. I observed how much trouble the students have working in teams. Teamwork is new to them. Teamwork is inherently difficult. I found, disproportionately, female and minority students ended up in my office with bad team experiences. I was upset! I am determined to make my courses serve as places where underrepresented people become inspired, not discouraged, as computer scientists. In reflection, on the phenomena, I attributed the problems to bias, both implicit and intentional. I sensed that underlying issues of sexism and racism contribute. I am ethically compelled to work to transform social relationships through teamwork.

I have iteratively created and facilitated a participatory diversity workshop as part of my class: ***Teamwork: Gender + Race***. My students felt comfortable opening up and disclosing personal experiences in this safe space. For instance, one young woman confided about how upset she was that young men in the university did not want to date her when they found out that she is an engineer. In the second, expanded, iteration of the workshop, we drew on anti-racism work by Jones and Okun to transform student team dynamics, helping them identify problems—such as defensiveness and perfectionism—and work toward antidotes—such as creative vulnerability and space to experiment.

CSCE 482 Senior Capstone Design in Computer Science [Fall 2011, Fall 2010, Spring 2010]

In concert with my graduate and undergraduate advisees, I developed the curriculum for our department's new CSCE 482 Senior Capstone Design in Computer Science course. We engage students in research projects, involving areas such as multi-surface interaction, games, and information. Students begin by writing an NSF-style proposal introduction, with a research plan, as a bid for a topic and a set of resources. They develop software, take IRB training, run user studies, produce a polished video, and write a research paper. They learn about how to articulate intellectual merit and broad impact.

The course embodies my ongoing affirmation of the synergetic sweet spot, in which research situates innovative methods and technologies in education, and education brings the freshness of youth energy into research.

The course develops an innovative graduate student as mentor program. Students are organized into project teams of 4-5 students. My grad student mentors and I develop project areas, each associated with funded research. Student mentors benefit because they are required to develop mini-course curricular components, and work with undergraduate students through a learning cycle. They get to see what the undergraduate students will do with their ideas, how they will manifest and grow. The undergraduates benefit from a more personalized education experience and by exposure to the most contemporary ideas and technologies. Research benefits from energetic development through the course.

An extensive course website [<https://ecologylab.net/courses/capstone>] provides students with background resources about each project area, as well as a well-structured set of deliverables for developing research projects. The PI works with his department head and computer services group to obtain state-of-the-art resources for each project area. The students become excited about the opportunities to work with this gear, and to create innovative projects.

After initial presentations to the students about each project area in the first 2 meetings, students form project teams. Each team is immediately required to develop a project proposal for two research areas. These proposals are positioned as competitive bids. The team with the best proposal in an area would be “funded” with the resources to develop the project. Students are motivated by this format.

Subsequent deliverables constitute an iterative design process. A lightweight prototype is followed by a Wizard-of-Oz user study. Then, students develop detailed project plans. These, in turn, are followed by cycles of prototyping, revision, and evaluation. A mini-course teaches video editing. Final deliverables include an edited video about the project, with demo footage, as well as a conference paper. Students will thus learn to articulate their ideas using design, software, multimedia, and written English. Final project presentations will be made to members of industry, as well as to faculty.

CSCE 667 Advanced Seminar in Human-Centered Computing and Information (before 2011, CSCE 689 Special Topics)

I like to regularly engage advanced students with cutting-edge materials on emerging research topics. The topics are highly interdisciplinary, coinciding with the research interests of The Interface Ecology Lab. My advanced seminars provoke all of us to master new fields, to grow intellectually. The goal is for us to learn and integrate fundamental science, art, and cultural methods that underlie our work, as well as significant prior work in associated fields. I have offered 8 such courses over 13.5 years as a tenure-track and tenured professor.

Because this is so important to me, I worked with affiliated faculty to develop a new advanced seminar course umbrella. Courses offered under this umbrella combine readings of important research papers with intensive projects. It can be taught with any conceptual focus as long as it addresses state-of-the-art research topics. Students can repeat it for credit.

My incarnations adopt a studio / laboratory format. The courses emphasize participation and collaboration. Motivated students benefit from working in a supportive environment that is intellectually, technologically, and scientifically challenging. They learn to conduct all phases of a research project in this field, including conceptualization, problems statement formulation, prior work investigation, algorithm development, interaction design, software engineering, evaluation, and research paper writing. Less experienced students, including undergraduates, work in collaborative teams with more experienced students. Research leading to publications and theses is produced.

Here are instances of my CSCE 667 Seminar and CSCE 689 Special Topics offerings.

Live Media Places [Spring 2017]

Live media, including but not limited to video, audio, and text media that is broadcast and/or shared in real-time, is an emerging form of social media. Live media platforms such as Twitch, Periscope, Meerkat, and Facebook Live are serving as new media places for people to come together, participate in shared experiences, and form communities. In this course, we will explore how live media helps people communicate, work, play, share, and learn.

We will consider how live media can be contextualized in education. As such, we will study cyberlearning and learning sciences. We will explore methodologies and issues involving the performance of ethical studies in educational contexts. We will address foundations of computer supported collaborative work (CSCW). We will work to understand existing live media practice, explore emerging live media contexts such as online education, and investigate new directions for designing collaborative live experiences.

Students will build innovative projects intended to develop new research contributions. The hallmark of the course is an extended final project sequence typically performed by teams. Students were encouraged to channel their interests into a passion project for this course.

Curation and Ideation Meet Social Media [Fall 2014]

Curation, the process of caring for, assembling, and exhibiting objects, grows into an extremely popular Internet activity. Ideation, the process of generating and developing new ideas, takes form through curation, on scales from personal to social to societal.

This course contextualizes investigation of contemporary curation and ideation practices in and around social media with relevant art practices, and empirical theories of creative cognition and graphical presentation. We invoke framings such as Duchamp's found objects, assemblage, social capital, and information visualization. We examine the role of social media in the ideation processes that impact emergent political movements, including Ferguson and Arab Spring, and other societal events.

Students across disciplines are encouraged to take this course. Each student will focus on strengths from their background, such as arts, humanities, social sciences, computer science, or engineering.

Our mission: to understand how curation serves human needs for engagement in ideation, considering social media's involvement. We will imagine and investigate new future personal and social forms of curation and ideation, and roles for people and computing. Projects will involve curation, design, systems, information visualization, studies, and writing. **#curation#ideation**

Students went beyond my hopes in incorporating information composition of rich clippings into this course's discourse. They adopted the cloud-based IdeaMâché for presentations on readings and research. The non-linear format provoked discussion and associational ideation across readings and fields. The students developed

provocative and compelling new forms of expression, particularly on the Analysis / Synthesis assignment. This assignment involved writing about connections between readings, followed by curating found objects in visual and semantic form, followed by more writing.

Sensory Interfaces [Spring 2012]

The focus of this research-oriented course is to build engaging human experiences based on sensing and recognizing embodied forms of expression. Basic electronics are synthesized with theory and research in strategic HCI areas including multi-surface, ubiquitous, and proxemics. The centerpiece is the Cypress PSoC (Programmable System on a Chip), a uniquely flexible and powerful approach to integrating analog and digital signal acquisition and processing, with support from Cypress. Sensing modalities include IR, NFC, and gyro.

Fluid Information [Spring 2011]

The more information that is presented to a user, and the more capabilities for operating on it, the more difficult the presentation of an interface that communicates underlying meaning and possibilities for interaction. The limitations are rooted in human cognition: in the working memory, perceptual, and motor systems. Fluid approaches to interaction use visual and temporal techniques to maximize communication and operational power, while minimizing motor effort and cognitive disruption.

Location, Location, Location [Spring 2008]

Power consumption, size, and costs of high performance computers and sensors are dropping. Multi-modal computing goes mobile. Senses of place in physical and virtual worlds are connected in mixed reality systems. We investigate technologies, examine research, and consider social practices and culture. Students engage in building, documenting, and evaluating location-aware interactive systems.

Creative and Expressive Systems [Spring 2007]

Investigates the development and evaluation of interactive and mixed-initiative systems that support and promote human creativity and expression. Evaluation methods are developed, including creative ideation, information discovery, protocol analysis, and flow. The role of cognition in visualization and visual search is studied. Game logics, and their relationships to play and culture, are considered. Social media and interaction. Audio and video production skills for human computer interaction documentation are developed. Students develop and evaluate systems through solo and team projects.

Physical Interfaces [Spring 2006]

Engages students in development of physical interfaces that integrate computing with human environments. To do this, they must begin with the acquisition and processing of physical signals for multimodal human computer interaction. They develop distributed wireless sensor networks for responsive environments and wearable computers. The characteristics of physiological signals such as electrodermal, respiration, electromyography, and pulse are studied. Computer vision techniques are investigated. Conceptual frameworks include embodied cognition, embodied interaction, ethnography, body-based performance, and psychophysiology. These perspectives enable the design of physical and social spaces that respond to human expression. Advanced students apply pattern recognition principles while developing experiential mappings from physical sensations through sensory signals to visualization and sonification. The process of experience is emphasized.

Recombinant Media Ecosystems [Fall 2005, Spring 2002]

Investigates a theory of *recombinant information*—in which collections are considered and represented not just as set of individual elements, but as composed assemblages that intentionally develop connections among elements. The information age transforms the surrogate of library science into the found object of conceptual art, bringing the representation of meanings into focus. This course develops the medium of digital collections. Students investigate scientific approaches, such as media semantics, meta-documents, and spatial hypertext. They integrate artistic practices for sampling and combining text, image, audio, and video (collage, montage, remix). They also consider and develop methods for evaluating interactive systems for creative experience. Projects develop applications from digital libraries to games to public installations. The course grounds the synthesis of methodologies with the meta-theory of interface ecosystems. This is a lab/studio in which students develop creative experiences as research. Students use the Max/MSP real time signal processing and integration environment.

Perceptive Sensory Systems Lab [2005-08]

Developed and directed a teaching laboratory and was the PI for \$100,000 of funding from the College of Engineering and Computer Science Department. The mission was to create a space for students to work in courses on ubiquitous and mobile computing projects, combining fields such as human-centered computing, sensors, pattern recognition, information visualization, and multimedia. Two other faculty members participated.

CPSC 444 Structures of Interactive Information [Spring 2003, 2004; Fall 2004, 2005, 2006, 2015]

This is probably the only studio art course offered in the TAMU College of Engineering. Students use computing, though the medium of the web browser, to develop a creative voice and communicate. This involves conceptualization, design, writing, and information visualization, as well as coding. Student practice and so learn problem formation, in addition to problem solution, through project-based learning.

Students experience the studio process of sharing work; giving and receiving constructive critique. A permanent gallery, *Must See!*, enables students to learn from each other across years.

Two major projects, the *essaysketch* midterm and the *web semantics visualization* final, focus students' creative development. In the holistic essaysketch design project, they must interpret, explain, illustrate, demonstrate, and connect ideas across disciplines. Exceptional projects have addressed memes, processes of teaching and learning, the Barcelona subway, and diverse games.

The final project involves information visualization of meaningful quantitative data. Exceptional projects have addressed health care costs, Flickr social media photography, computer science literature, and Black Lives Matter.

2000-2001 **Department of Electrical Engineering and Computer Science.**
Tufts University, Medford, MA.
Visiting Assistant Professor

- Carry a 2 - 2 teaching load.
- Develop 1 new course; overhaul 2 other courses from the ground up.

Comp 150-PWI | 150-CM Public Web Installation [Fall 2000, Spring 2001]

In this course, the students collaborated with me to produce *JumboScope*, a single research project / site-specific art installation, which was exhibited in the Boston Cyberarts Festival. The course was run in a highly participatory fashion. Some students took turns facilitating the entire class. Working groups were self-organizing, and responsible to each other. Scientific, technological, and artistic methodologies were integrated to address topics: (1) the conception and flow of site-specific intervention in public spaces; (2) the design of space and interaction, theory and practice of advanced, distributed, multi-tier web architectures; (3) political issues of community representation and institutional standards in media curating; (4) the composition of events in time and space; (5) high performance multimedia databases; (5) server-side programming with Java and Oracle; (6) browser programming with CSS, HTML and Java/Script. Streaming video; (7) intelligent agents; (8) usability evaluation and testing; (9); the marketing of ideas and technology; and (10) consensus process and group decision-making.

Comp 106 Programming for Graphical User Interfaces [Spring 2001]

Overhauled a course that had been previously based on X-11 Motif, with a final project based on office automation, and completely revamped it. I developed a new curriculum, using Java, object-oriented techniques, computer graphics, and multimedia. The students created projects that were games. This related both to current industry developments, and to their interests. Much excitement was generated.

Comp 171 Human Computer Interaction [Fall 2001]

This is a graduate / upper division undergraduate introductory course. I revamped the course to use primary research source materials, such as Norman's *Design of Everyday Things*, Suchman's *Plans and Situated Actions*, and Geertz's *Interpretation of Culture*, in addition to standard HCI texts.

1997 **Parsons School of Design, New School** University. New York, NY
Lecturer

Interactive Java Programming

Developed an innovative curriculum for teaching students in the MFA Program in Digital Design to program. Developed a curriculum for “Interactive Java Programming”. Supported students with widely varying levels of programming experience and a priori knowledge. Developed course web site.

1999 **Department of Computer Science, NYU.** New York, NY
Teaching Assistant

Multimedia

Brought interdisciplinary concepts, such as design and culture, into the curriculum of an undergraduate multimedia class in the computer science department. Motivated students to elevate work. Developed a “Grader’s corner” segment of class in which the best student work was displayed and critiqued.

1994 **International Centre for African Music and Dance.**
University of Ghana. Legon, Ghana
Research Associate

Macintosh for Everyone

Develop and present *Macintosh for Everyone* workshop for West African researchers. Some had little computer experience. Used local culture and dramatic demos to make the pedagogy accessible.

Interactive Installation

<https://ecologylab.net/media/>

Playas: Homeland Mirage [2005-2006]

Jack Stenner, Andruid Kerne, Yauger Williams, Steve Rowell.

Playas: Homeland Mirage is an interactive installation that used the setting of a game console in a living room and the context of a game to evoke reflection on issues of presence, absence, and security. The environment juxtaposed issues of security within the context of suburbia, desire, and post 9/11 obsession with terrorism. A participant sat on a comfy chair, at the console, and plays a game, in which the goals were to stay alive and explore a simulation of Playas, New Mexico, USA. Other human participants' presence transformed the game image into a mirage, which was projected into the installation environment. Virtual game characters included innocents, terrorists, and Department of Homeland InSecurity (DHI) agents. The piece commented on how about how game and military realities are artificially constructed.



The discourse was represented through the familiar interface of the Torque / Quake II game engine.

- Publication [91].
- Exhibitions:
 - 2006: ISEA / ZeroOne, San Jose,
 - 2005: ACM Multimedia Interactive Art Exhibition, Singapore.

CollageMachine [1997-2003]

CollageMachine was an early work that explored temporality as a dimension of information presentation, inspired by recontextualizing musical concepts of composition and indeterminacy, applying them to the early world wide web. In *CollageMachine*, I stirred up the process of web browsing with cognitive strategies that promote creativity. The granularity of browsing was changed from documents to information elements. Sessions were seeded with sets of web addresses or search queries. CollageMachine deconstructed web pages to form collections of media elements - images and texts - and hyperlinks. It crawled and processed hyperlinks recursively. Media



elements streamed concurrently into a collage. Users engaged in collage design, as part of browsing, by arranging elements for which they felt affinity, and removing undesired ones. These direct manipulations drove an early agent, which created new layouts on the fly, using an underlying grid.

- Evolved from an artistic concept into a tool into a dissertation into a research project.
- Publications: [13] [14] [15] [64] [65] [67] [97] [98] [99] [101] [103]. 1 Ph.D. dissertation (mine!).

Exhibitions (6):

2001: SIGGRAPH, Los Angeles.

2001: Brave New Word, Guggenheim Museum, New York.

2001: Electronic Literature Organization Awards, New York.

2000-2001: New York Digital Salon, New York, Spain, London, Beijing.

JumboScope [2001]

- Developed concept, design, and systems architecture for public ambient interactive multimedia installation, featuring *CollageMachine* as a component for presentation / visualization of contextual. Included distributed message passing both across and within tiers.
- Led development of 3-tier multimedia archive, using Java Servlets & Oracle. Components included a public site for media submissions, a private site for curators, and “seeding” *CollageMachine* from the contents. Project included data design, object-oriented middle tier API library, and human computer interface.
- Led development of automated streaming video capture, storage and retrieval system. Integrated with *CollageMachine*.
- Extended *CollageMachine* agent to persistent, server-side repository.
- Led development of client-side system to gather and utilize smart-room data via sensors and advanced pointing devices.
- Involved, instructed and directed team of 12 students.



Exhibitions:

2001: Tufts University

2001: Boston Cyberarts Festival.

Media and Performance

<https://ecologylab.net/media/>

1994-5

Coded Messages: CHAINS.

PANAFEST 94. Cape Coast Castle, Legon-Accra, Anyako, Ghana

Composer / Director / Librettist / Art Director / Audio Engineer

Intercultural Media, Digital Audio & Video, Human Computer Interface, Navigation, Performance Ecology, Structured Improvisation, Polyrhythmic Frameworks, West African Drum/Dance, Semiotics, Percussive Poetry

- Directed rehearsals of an opera = performance ecosystem featuring 6 Ghanaian drummers and dancers.
- Composed multilingual, intercultural music, movement, percussive poetry, and text sequences.
- Collaborated with master drummer / choreographer Francis Kofi and translator Gustav Hlomatsi to develop an intercultural conceptual framework based on traditional *Eve* drum language texts and ready-made American advertisements.
- Selected provocative sites for site-specific performances such as the historic Cape Coast slave trade Castle, and the remote village of Anyako. Developed a ground plan for each site.
- Hired and directed 3-camera video team. Edited digital video. Engaged in digital audio post-production.
- Award: Prix Ars Electronica, Honorary Mention.
- Performances:
 - Cape Coast Castle, Ghana (site specific).
 - University of Ghana at Legon
- Publication [17].



1991-95

Creating Media

San Francisco, CA, Middletown, CT, New York, NY

Technology Director, Sound Designer

Intercultural Media, Digital Audio, West African Drum/Dance

- Co-organized and engineered recordings of a spectrum of West African music traditions, including traditional griots in The Gambia, Voodoo Trance drumming in Togo, and the Ashanti royal court drum and horn ensemble in Ghana.
- Engineered multi-track studio and field digital recordings, for *West African Music Traditions for Drum Set*, by Abraham Adzenyah and Royal Hartigan, Manhattan Music Publishers.
- Audio post-production.
- Designed and constructed custom off-grid mobile recording studio to meet versatility, weight and fidelity specs. Used modular power system includes solar panels, Ni-Cd batteries, smart chargers.



- Created specification and systems integration of mobile audio and multimedia studio for use in remote areas off-grid with equipment including DAT, Schoeps microphones, phantom powered pre-amp, Mogami cabling, lightweight waterproof flight case, PowerBook, Pyropen, and low-level audio parts.
- Recording sessions' producer: hired and supervised artists and technicians.
- Performed Digital Audio Workstation (DAW) specification, purchasing, integration, & testing.

1995 **NYU Media Research Lab / Dept. of Computer Science**, New York, NY
Graduate Research Assistant

- Led sound design/sonification for SIGGRAPH 95 *Virtual Actors* installation. Real-time generation of spoken voices and Foley effects using CSound. LPC analysis and resynthesis. Events triggered by animated character behaviors, and the user via video motion tracking, sound peak detection, and voice recognition. KPL programming to integrate with Perlin's Noise-driven Improv system. Scripts in Perl, M4, and Make to automate development and testing. Multi-processor systems integration with SGI Onyx Reality Engine, Indigo Power Extreme, and Indy.
- Edited digital video of *Improvisational Animation* video featured in SIGGRAPH 95 Computer Animation Festival, and by Media Research Lab for marketing and demonstrations.

1994-95 **International Centre for African Music and Dance**
University of Ghana. Legon, Ghana
Research Affiliate, consultant

- Created interactive multimedia database dictionaries for indigenous languages including *Eve* and *Mandinka*. Collaborated with native language scholars. Printed dictionaries for these languages are not generally accessible.
- Created a study of *Eve*, *Dagomba*, *Mandinka* and *Susu* drumming and dancing with master artists.
- Created database of West African performance forms.
- Developed and presented *Macintosh for Everyone* workshop for West African researchers. Some had little computer experience. Used local culture and dramatic demos to make the pedagogy accessible.
- Generated technical reports to enable non-technical management to make development choices.
- Specified, purchased, installed, integrated and tested computer and audio studios.

4/94 **Jali Madi Kanuteh Ensemble**
Gambia National Radio. Banjul, The Gambia
Percussionist

- West African Drum/Dance
- Polyrhythmic Frameworks
- Traditional Mandinka repertoire.

1993

the economic survival rite of passage

Wesleyan University, World Music Hall, Middletown, Connecticut

Composer / director, technology director, sound designer, art director

Intercultural Media, Polyrhythmic Frameworks, Digital Audio, Structured Improvisation, Percussive Poetry

- Composed, authored, directed, and presented 90-minute opera, which I called *intermedia poesis* and then *performance ecology*, for 8 musicians, 5 actors, 5 dancers, live triggered audio samples.
- Directed a production team of 50. Directed rehearsals and production meetings.
- Composer/librettist. Conceptualized and authored music, script, and drama. Building blocks included polyrhythmic frameworks, structured improvisation, dynamic signals, ensemble transition logics, found sounds, poetry, and narrative.



- Designed innovative graphical/text scoring techniques, embodied in *script/score*, to represent new media form.
- Led technical design for live 24-track digital recording and 3-camera video shoot with radio lavaliers, wireless Clear-Com, Macintosh-hosted Sample Cell and OMS MIDI, sound reinforcement, and SMPTE distribution.
- Designed, recorded, and edited *music concrete* digital audio samples: typewriter, fax, glass breaking, and whip crack.
- Architected, designed, and implemented triggering system for live performance.
- Performed recording studio engineering of mix downs.
- Edited video. Engaged in post-production lockup of picture & sound with Digidesign ProTools.
- Collaborated with production manager Melissa Lang, environmental designer / architect Ben Ledbetter, acting coach Howard Goldkrand, and drummer Royal Hartigan.

12/93

C.K. Ladzekpo Ensemble

East Bay Center for the Performing Arts. Richmond, CA, USA

Percussionist / Dancer

- Polyrhythmic Frameworks.
- Traditional Ghanaian repertoire.

4/92

Re: wasteland cycle

with local memory, deer dance south of market

Composer / Director / Librettist

World Music Hall, Wesleyan University, Middletown, Connecticut

7/89

Cal Arts, Valencia, California

5/89

Martin de Porres House of Hospitality, San Francisco, California

- Composer/director/librettist: opera (ecology) for 4 musicians, 5 dancers, and triggered audio.
- Polyrhythmic Frameworks.
- Digital Audio.
- Structured Improvisation.
- Percussive poetry.
- Performance Ecology.

8/92

Agolona Sabor Afro-Cuban

Martin de Porres House of Hospitality, San Francisco.

Director / Percussionist

- Polyrhythmic Frameworks.
- Traditional Afro-Cuban repertoire.
- Led a traditional Afro-Cuban drum/dance ensemble featuring master artists Judith Justiz and Treviño Leon.

12/91

Wesleyan Pandemonium Steel Orchestra

Avery Fisher Hall, Lincoln Center, New York, New York

Percussionist

- Polyrhythmic Frameworks.
- Traditional and contemporary Trinidadian steel pan repertoire.

7/91

Barren Threshold

Marvin Gardens, San Francisco, California

- Percussive poetry.
- Improv dance.

7/90

Occluded Views

Club Kommotion, San Francisco, California

- Percussive poetry.
- Improv dance.

7/90

Momentum**Meryl Jones Ensemble.**

Eighth Street Studio, Berkeley, California

Composer / Percussionist

- Structured improvisation.
- Percussive poetry.
- Improv dance.
- Composed and performed collaborative structured music and dance improvisations in collaboration with choreographer.

12/90

Illegal Entry

Cal Arts, Valencia, California

Composer

- Create soundtrack for Olive White's performance about strip-tease and violence against women.
- Digital audio.

10/88-12/89

Cal Arts African Ensemble

Japan America Theatre, Los Angeles + Cal Arts, Valencia, California, et al

Percussionist

- Polyrhythmic Frameworks.
- Traditional Ghanaian repertoire.
- 12/89: Featured as lead drummer on *Agahu*.

10/88-5/89

CalArts Balinese Gamelan

Barnsdall Art Park Gallery Theatre, Los Angeles, California

Festival of Masks, L.A. County Art Museum Grounds

Percussionist

- Polyrhythmic Frameworks.
- Traditional Balinese Dance Drama and other repertoire.

8/88 - 9/88

Dry Snake Dreams

Maelstrom Bookstore, San Francisco, California, et al

Bob Thawley, Andres King Cobra, Andruid Kerne

Composer / Poet / Percussionist

- Structured improvisation.
- Collaborate on integrated media performance fusing poetry, music and movement.
- All elements of composition and performance created through collective process.

11/87

The Deer Dance South of Market

The Paradox, San Francisco, California

Composer / Director / Performer.

- Structured improvisation.
- Solo and ensemble percussive poetry.
- Improv dance.

Industry Positions

1994-2001

Creating Media

New York, NY

Principal and Director

*Human Computer Interfaces, 3-Tier Internet Architectures, Navigation, Databases, Web Strategy
XML, Java, JavaScript, D/HTML, CSS, SQL, VB, ASP, Perl, Make, CGI, Photoshop, Illustrator.*

- Developed web strategies, architectures, sites, navigation, tools, & infrastructure.
Clients: Modem Media, AT&T, Procter & Gamble, Mitsui, Ru4, Discovery Channel, Darwin Digital.
- Functioned as Director of Technology and Creative Director.
- Managed a team of six.
- Developed creative strategy for brand identity on web and in print.
- Hired, managed, and collaborated with staff and external vendors.
- Managed customer accounts.
- Developed proposals for new business.
- Developed intellectual property, including trademarks; consideration of patent opportunities.
- Collaborated with lawyers to develop contracts.
- Created system architecture for *AT&T Personal Solutions*, a database-driven customer care site.
Design of languages & message passing APIs to connect web servers, Oracle, and legacy systems.
- Led developer of Nimble Intranet Engine™ and Stem™ Web site compiler.
Definition of product and 3-tier system architecture. Implementation of front-end interaction, middle tier -- Java Servlets, XML, SQL, and ASP -- and back-end data design and stored procedures.
- Developed interactive game banner ads for Tide and The Discovery Channel.
- Developed the first AT&T United Kingdom web site.
- Engaged in conception, design, and implementation of Java *Playlets*: an object-oriented interactive multimedia toolkit. *Playlets* stream content. Multiple threads permitted concurrent download and interaction. Supported features include animation, hot buttons, and pixel accurate layout w sound. Applet features were scriptable at the HTML level. Used on Delta Airlines home page.
- Developed a multi-tiered system to manage web site releases and documentation.
- Engaged in specification, systems integration, and systems administration for network with T1 connection. Firewall design. Cisco router configuration. Server runs Informix and MS-SQL Server DBMSs, and Netscape Enterprise and MS IIS Web Servers, and Windows NT Server. Workstations run NT, 95, 3.1 (multi-boot configurations) and MacOS.

1993 **Toshiba America Medical Imaging**
 South San Francisco, CA
Senior Software Engineer

Distributed Architectures, Real-time Systems, Digital Signal Processing, C, Assembler, Unix, VRTX

- Played a key role in the development of software driving a commercial Magnetic Resonance Imaging (MRI) machine. Focused on Fast Fourier Transforms and control software.
- Reverse engineered a distributed multi-process / multi-processor MRI system: graphical user interface runs on an SGI workstation and real-time components run in a VME chassis with Motorola 68030 & 68000, 96000 DSP and custom CPU's. The out-of-house real-time system consisted of 500,000 lines of undocumented spaghetti code. Authored an in-depth white paper detailing current system architecture, and an alternative, object-oriented, message passing design.
- Created DSP development environment, with interdependent hardware emulators & software from 6 vendors.
- Created new real time operating system (VRTX) boot ROMs. Fixed bugs and added features to 96000 DSP, 68000 & 68030 code. Created Make files to streamline project support and maintenance.

1990-91 **Litton IA for Boeing**
 Alameda, CA
Senior Software Engineer

Human Computer Interfaces, Distributed Architectures, Agents, C++, Unix, Sybase, X11

- Led user interface architect and developer for the REDARS (\$40 million) database archive. Boeing assembly and maintenance personnel access the database of commercial airplane schematic images only through this distributed client-server system, which replaces a library of paper documents with 48-hour turnaround time.
 Each site consisted of 40 cooperating agents on 350 heterogeneous workstations.
- Developed fast, robust code for ASN-1 unpack, decompression, scaling, and rotation of Tiled Raster Files (TRIF) using the Motif widget set.
- Developed C++ base classes and sophisticated templates based on Wcl and Imake to support and standardize development team efforts.
- Acted as a technical leader, guiding team members, and providing X-Window System expertise for the whole division.
- Regularized development of high-visibility customer demos.
- Engaged in rapid development of "proof of concept" demo.

1988-89

NASA-JPL

Pasadena, CA

Senior Software Engineer for Mars Pathfinder Computer Vision

Distributed Architectures, Digital Video, Real-time Systems, C and Assembler, Unix, VxWorks

- Contributed to computer vision software for NASA's unmanned mission to Mars, which eventually launched in 1996. Collaborate closely with leading computer vision scientist.
- Played a lead role in real time software architecture design and development.
- Focused on decimate and low pass filter operations in multi-resolution pyramid representations of vision data.
- Developed interrupt-driven VxWorks driver to support Datacube video processing boards under MaxWare 3.2 and VxWorks 4.02.
- Developed DSP software for real-time video image processing, including filtering, to generate multi-scale Laplacian and Gaussian pyramids.
- Developed routines for "on-the-fly" calculation of ROI timing delays for digital video pipelines chaining ROISTORE, MAX-SP, FRAMESTORE, and VFIR-II.

1988

Wind River Systems

Alameda, CA

Senior Software Engineer

Real-time Systems, C and Assembler, Unix, Unix Kernel, VxWorks

- Created real time operating system software development for new real time operating system, which went from start-up to market leader.
- Developed SunOS kernel backplane ethernet driver & VxWorks ethernet driver for Sun 3.
- Ported VxWorks to Motorola MV135 68020 single board computer.
- Configured Sun Fileserver and workstations.

high school &
college summers

National Institute of Science and Technology

Gaithersburg, MD

Intern -> Systems Programmer

C, Assembler, FORTRAN, Unix

- Developed systems and application software for real time systems running scientific experiments.
- Developed control software & drivers. Develop operating system, editor.