

LAURIE WAISEL

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FOCUS: OPPORTUNITY IN INFORMATION DESIGN & VISUALIZATION

Would Like To: Design/assess information visualizations and interfaces, target new business, manage client relationships, build systems, do rapid prototyping, manage project teams, write proposals.

Skills Summary: Inventive, strategic thinker, strong communications skills, disciplined, organized, can focus projects and motivate teamwork.

RESEARCH AND DEVELOPMENT EXPERIENCE

- **Visualization interests.** Enterprise information assurance, information warfare, adaptive interfaces, internet security, consumer investment interfaces, financial market data, enterprise data analysis, business-to-business interfaces.
- **Command Post of the Future** (DARPA project). Collaborating with MAYA Viz, Ltd. Coordinating insights from domain experts, visualization development, and experimental design. Participating in Command and Control University (C2U), a DARPA-sponsored program providing technologists with a basic understanding of battle command. Liaison between the technology providers and the domain experts. Application pending for Secret level clearance. Carnegie Mellon, 1999-present.
- **Exploratory data analysis.** Developing theoretical framework for characterizing how people do exploratory data analysis with visualization tools. Experimental design/implementation in progress. Carnegie Mellon, 1998-present.
- **Visualization in modeling.** Doctoral research explored the cognitive role of visualization in modeling. Developed theoretical framework for modeling with visualization. Designed and built interactive groundwater modeling software with data collection module. Designed and carried out 12-participant experiment to assess theoretical framework using the groundwater modeling software. Videotaped experiments, transcribed and coded verbal protocols. Performed content analysis on transcripts and videotapes. Used statistical methods to analyze quantitative data. Rensselaer, 1995-1998.
- **Decision support system development.** Co-developed decision support system to help reduce maritime deaths and injuries for U. S. Coast Guard. System analyzed and visualized varying combinations of factors with regard to outcome. Rensselaer, 1994-1995.
- **Emotion in disaster management.** Analyzed videotaped interviews with local residents and FEMA (Federal Emergency Management Agency) response team members present during a wildfire-fighting incident in Alaska. Used word frequency analysis to compute emotion index of speech. Performed in-depth qualitative analysis to identify content themes. Rensselaer, 1993-1994.

DESIGN EXPERIENCE

- **Heuristics visualizations.** Developed innovative “layered” method of visualizing problem solving heuristics. Built “Modeler’s Assistant” application that helps user characterize groundwater flow over a given region. Worked closely with domain experts to incorporate mathematical models of groundwater flow. Designed interactive interface for user to “drill” wells in different locations, as well as data collection system for research on cognition and visualization. Rensselaer, 1997-1998.
- **Graduate course in multimedia visualization.** Developed course that emphasized 1) multimedia design principles and methods, including storyboarding and rapid prototyping; 2) project management strategies, including time management and identification/effective use of expert resources; and 3) extensive application-building using Macromedia Director and Lingo. Course designed for Satellite Video Program, to accommodate both co-located and distance learning. Rensselaer, 1996-1997.

- **3D sediment contaminant visualizations.** For U.S. Environmental Protection Agency. Working with oceanographers, constructed analog representations of subaqueous core sampling. Used representations as basis for design of 3D visualizations of sub-surface contaminants. Implemented in IBM Data Explorer. www.rpi.edu/locker/69/000469/dx/harbor.www/harbor.html. Rensselaer, 1995-1996.
- **Affordable energy-efficient home.** Minimized energy costs by incorporating stress-skin panel construction, thermal mass, heat exchanger, high-efficiency fireplace, & other innovative construction technologies. Designed living space layout. Designed and installed custom-patterned tile countertops and floors. House was featured in *Harrowsmith Country Life*, "A Home Of Her Own," November 1990. Pownal, VT. 1988-1989.

MANAGEMENT EXPERIENCE

- **Clinical Applications Analyst.** Responsible for implementation, maintenance, and training for clinical applications of MEDITECH Hospital Information System: Lab, Pharmacy, Nursing Care Plans, Nursing Acuity, Nursing Order Entry, Radiology, Medical Records Transcription, Patient Care Inquiry, and Office Automation. Designed and coded statistical and patient-care reports for physicians, department heads, and Quality Assurance staff. Supervised application installation for 12 clinical departments and 8 inpatient units. Mediated inter-departmental differences over database structure and content and helped resolve sensitive conversion issues. Supported 200+ physicians, nurses, and clinical staff during 18-month transition from completely manual record-keeping to full computerization. Southwestern Vermont Medical Center, Bennington, VT, 1990-1993.
- **Proposal writer / Grant Manager.** Lead writer for 2 National Science Foundation (NSF) proposals, one funded, one still under review. NSF grant SBR-9730465 provided \$300,000 over 3 years, funding 2 years of my doctoral research. Obtained funding from U.S. Environmental Protection Agency for creating 3D visualizations of sediment contaminants, supporting 1 year of my doctoral research. Managed FIPSE (Fund for the Improvement of Post-Secondary Education) grant for substance abuse prevention program at Southern Vermont College. Participated in the preparation of multiple DARPA (Defense Advanced Research Projects Agency) proposals at Carnegie Mellon.
- **Owner-builder.** General contractor for construction of \$90K+ energy-efficient home. Hired, coordinated, supervised subcontractors for electrical, plumbing, and finish work. Installed sheetrock, tile floors and counters, brick sunroom floor; painted exterior siding. Pownal, VT, 1989-1990.
- **Real estate development manager.** Managed development of 16-unit subdivision for out-of-state investor. Collaborated closely with civil engineer to secure state environmental permits for subdividing 160-acre plot, entailing 18 months of hearings under local and state officials. Coordinated land clearing, road construction, installation of electrical and telephone services. Managed snow removal and road maintenance. Organized homeowners' association. Pownal, VT, 1988-1993.
- **Halfway house manager.** Managed 10-bedroom, 3-story halfway house for patients discharged from Northampton State Hospital. Supervised 8 full-time and part-time staff in caring for 8-10 mentally ill adults in transition from hospital to community. Responsible for treatment planning, building maintenance, staff coverage, residents' work schedules, and clinical supervision for staff. Berkshire Mental Health Center, Pittsfield, MA, 1985-1986.

TRAINING AND TEACHING EXPERIENCE

- **Coordinator, Clinical Information Systems Training Program.** Organized, motivated, and supervised team of instructors teaching MEDITECH hospital information system to 200+ hospital staff. Designed/developed educational materials. Southwestern Vermont Medical Center, 1990-1993.
- **Independent information systems training consultant.** Custom-designed and delivered seminars in MEDITECH's report-writing and office automation applications. Samaritan Hospital, Troy, NY, 1993-1994.
- **Senior Teaching Associate.** Taught graduate course "Multimedia and Visualization for Decision Makers," 3 semesters, to a total of 40+ students. Rensselaer, 1996-1997.
- **Teaching Assistant.** Led recitations, assigned homework, made up exams for undergraduate and graduate courses in statistics and information systems, including Information and Decision Systems, Design of Experiments, Statistical Methods, and Microcomputer Applications. Rensselaer, 1993-1995.

- **Piano Teacher.** Helped finance my undergraduate education by giving weekly lessons to students ranging in age from nine to adult. Williamstown, MA, 1983-1984.

CLINICAL PSYCHOLOGY EXPERIENCE

- **Inpatient psychotherapist.** Conducted individual and group psychotherapy for inpatients on short-term unlocked psychiatric unit. Developed treatment plans. Managed monthly Grand Rounds presentations (booked speakers, arranged for facilities and publicity, etc.). Wrote and revised unit policy. Designed quality assurance measures in accordance with Joint Commission on Accreditation of Healthcare Organization regulations. Southwestern Vermont Medical Center, 1989-1990.
- **College counselor.** Counseled college students on the gamut of personal and academic issues. Administered campus-wide substance abuse prevention program, funded by FIPSE. Supervised student peer counselors and co-led peer counselor process group. North Adams State College, North Adams, MA, 1987-1988; Southern Vermont College, Bennington, VT, 1988-1989.
- **Community mental health center psychotherapist.** Interned at regional mental health center. Counseled individuals, groups, families, couples. Wrote treatment plans. Participated in clinical reviews. United Counseling Service of Bennington County, 1986-1987.

EDUCATION

Ph.D., Decision Sciences and Engineering Systems—Rensselaer Polytechnic Institute, Troy, NY, 1998. Dissertation: The Cognitive Role of Visualization in the Modeling Process. Major area: Information and Decision Systems. Advisor: William A. Wallace.

M.S., Industrial & Management Engineering—Rensselaer Polytechnic Institute, Troy, NY, 1994.

M.A., Counseling Psychology—Antioch New England Graduate School, Keene, NH, 1988. Areas of concentration: Individual Psychotherapy and Group Psychotherapy.

B.A., Music—Williams College, Williamstown, MA, 1984. Graduated *cum laude*.

AWARDS AND HONORS

- Offered National Science Foundation Post-Doctoral Fellowship at U. of California at Berkeley, 1998.
- 4.0 Cumulative GPA at Rensselaer Polytechnic Institute.
- Dean's Committee on Women in Engineering, Rensselaer (1997-1998).
- Rensselaer Founders Award of Excellence, awarded to 1% of Rensselaer students each year (1997).
- General Electric Faculty for the Future Fellowship (1996-1997, 1997-1998).
- National Science Foundation Graduate Research Fellowship Competition: Honorable Mention (1994).
- Alpha Pi Mu Industrial Engineering Honor Society (1994).

PROFESSIONAL AFFILIATIONS

- American Association for Artificial Intelligence (AAAI)
- Institute for Electrical and Electronics Engineers (IEEE) Computer Society
- Association for Computing Machinery (ACM)

CHRONOLOGICAL LISTING

1998 – 2000 Postdoctoral Fellow, Visualization & Intelligent User Interfaces Group, Robotics Institute, Carnegie Mellon University.
1993 – 1998 Research Asst., Teaching Asst., Senior Teaching Associate, Rensselaer Polytechnic Institute. Earned M.S. and Ph.D.
1993 – 1994 Training Consultant for Samaritan Hospital, Troy, NY.
1990 – 1993 Clinical Applications Analyst, Southwestern Vermont Medical Center, Bennington, VT.
1989 – 1990 Inpatient Psychotherapist, Southwestern Vermont Medical Center, Bennington, VT.
1987 – 1993 Real Estate Development Manager, Pownal, VT.
1988 – 1990 Owner-Builder, Pownal, VT.
1988 – 1989 College Counselor, Southern Vermont College, Bennington, VT.
1987 – 1988 College Counselor, North Adams State College, Bennington, VT.
1986 – 1987 Psychotherapist, United Counseling Service of Bennington County, Bennington, VT.
1986 – 1988 Antioch New England Graduate School. Earned M.A. in Counseling.
1985 – 1986 Halfway House Manager, Berkshire Mental Health Center, Pittsfield, MA.
1984 – 1985 Software Phone Support, The Saddlebrook Corporation, Cambridge, MA.
1980 – 1984 Undergraduate, Williams College. Earned B.A. in Music.