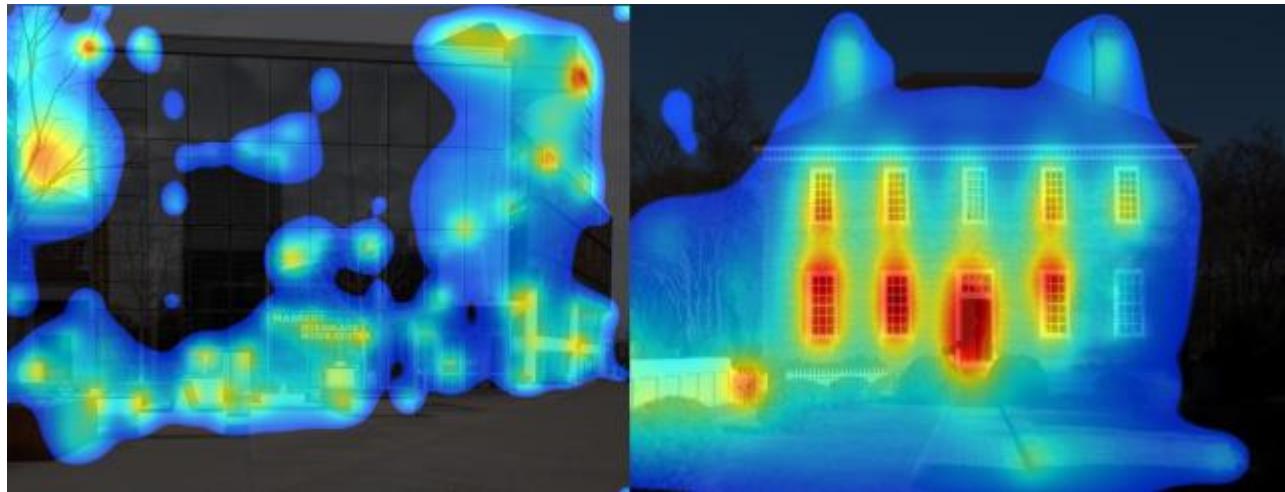


ARCHITECTURE RESEARCH PROJECT

ARC 4530 | Culture & Behavior in Architecture | Prof. Brandon Ro, AIA, NCARB



3M Visual Attention Software (VAS) study with region of interest (ROI) diagrams help illustrate biometric data of where people spend their time looking. *Images courtesy of Ann Sussman, <https://geneticsofdesign.com/2020/07/18/the-case-against-all-glass-facades/>*

REQUIREMENTS

PURPOSE

The Architecture Research Project is designed to demonstrate each student's ability to engage in research about the aesthetic experience of architecture from a cognitive, behavioral, and emotional viewpoint. In this context, architectural research is defined as an inquiry or investigation conducted by a student that makes an original intellectual or creative contribution to the discipline. The ultimate deliverable for the research project will be to compile and synthesize the findings in a visual format as a poster presentation and present it to the class.

RESEARCH PROJECT TOPICS

Students will select a topic from the weekly readings, previous research in architectural theory, or new topics as approved by the instructor. Possible research topics may include:

- Architectural research for practice
- Cultural expression in architecture
- Spirituality in architecture
- Cognitive issues in architecture
- Behavioral science for architecture
- Architecture for the senses

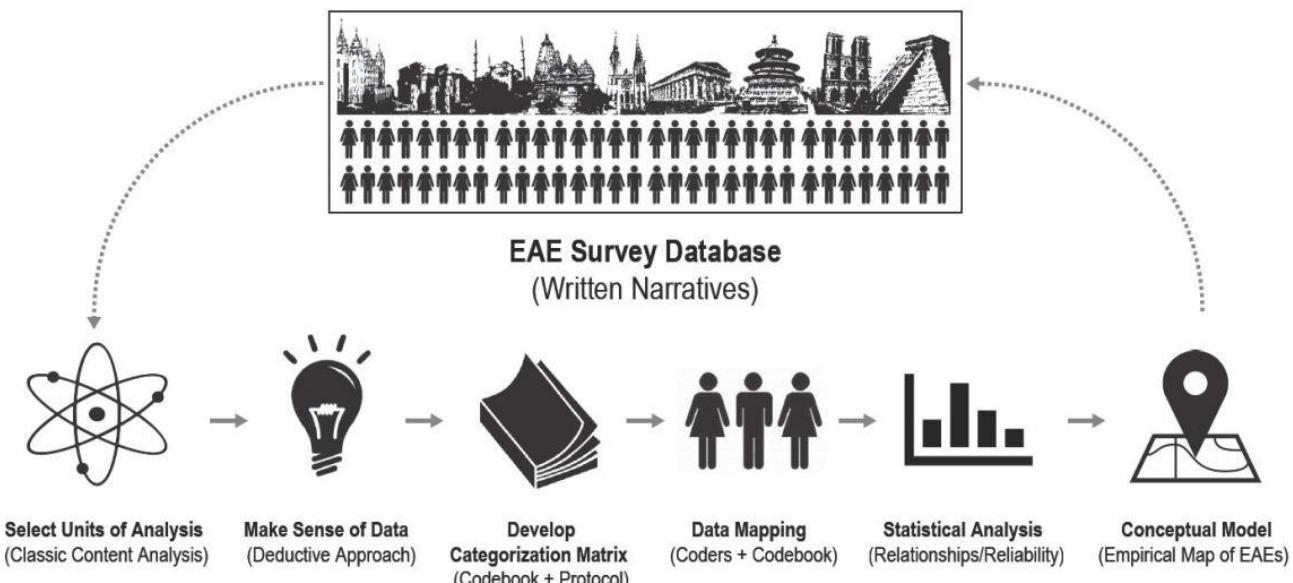
- Emotion in architecture
- Psychological dimensions of architecture
- Thigmotaxis (edge-hugging) in architecture
- Pattern languages, faces, and spaces
- Shapes, symmetry, hierarchy, curves, complexity
- Beauty and the brain
- Biophilia and biomimicry
- Healing spaces

Other topics may be selected outside of this list if approved in advance with the instructor.

ASSESSMENT

Each student will follow several steps over the course of their research project. The six steps in this process and their respective assessment are broken down as follows:

| ARCHITECTURE RESEARCH PROJECT | | 10% |
|--|--|----------------|
| Step 1) Research Topic Selection / Research Plan | | 10 pts |
| Step 2) Annotated Bibliography | | 10 pts |
| Step 3) Poster Rough Draft | | 10 pts |
| Step 4) Final Research Abstract / UCUR | | 20 pts |
| Step 5) Final Poster Submission | | 25 pts |
| <u>Step 6) Presentation to Class</u> | | <u>25 pts</u> |
| Total | | 100 pts |



RESEARCH PROCESS

STEP 1: RESEARCH TOPIC SELECTION / RESEARCH PLAN

Students will submit a **1) Preliminary Research Statement & 2) a Research Plan** about their proposed research project topic. The **Preliminary Research Statement** should be a minimum three typed paragraphs up to a page. This Preliminary Statement should include a thesis statement of what the student wants to explore with several key points or ideas that will be addressed. The Statement should also mention some of the sources that the student plans to include in their research.

Each student will also include a **Preliminary Research Plan** in the form of a Gantt chart that outlines the timeline for their research project and how they will meet the class deadlines. Similar to an architectural project schedule with various phases of design (e.g., Schematic Design, Design Development, Construction Documents, etc.), successful research projects will also include several phases or steps in the research process. The phases will vary based on the types of research you are performing, but they typically include the following six steps:

- 1) **Define Objective & Problem** (needs assessment, situation analysis, research problem, hypothesis, research goals, literature review, conceptual framework);
- 2) **Determine Research Design & Planning** (selecting research methods, identify population sample, select measures, research protocol, program design);
- 3) **Design & Prepare Research Instrument** (select measures, research protocol, program design);
- 4) **Implementation** (sampling, data collection, testing, survey, interviews, etc);
- 5) **Evaluation** (processing the results of the study, data analysis, interpretation of findings); and
- 6) **Dissemination** (visualize and communicate results, writing the report, composing graphics, designing poster, presenting the findings, publishing the results).

The six steps of research should be included in each student's research plan. The instructor will review these statements and return them with comments and suggestions.

Submit your research topic selection and Gantt chart research plan as a PDF to Canvas. The instructor will review and provide feedback.

RESOURCES

What is a research proposal?

https://www.uvu.edu/writingcenter/docs/handouts/common_assignments/researchproposals.pdf

STEP 2: ANNOTATED BIBLIOGRAPHY

After you have selected your research topic, the next step is to start gathering information about your topic. One means of documenting your research process and the sources you come across along the way is to create an annotated bibliography. Typically an annotated bibliography is prepared in advance of a research project or paper. A typical annotated bibliography consists of two main things:

- 1) **Citation:** Each source reference will be formatted in a particular bibliographic style (e.g., MLA, APA, Chicago). This is similar to a bibliography or works cited at the end of a research paper.
- 2) **Annotation:** An annotation is a brief summary of the source's content and also includes an evaluation of the points raised by the author, such as the quality of the evidence, their relevance, the author's credibility, and its value to your research project. This is usually three to four sentences in length.

Each student will create an annotated bibliography for the sources they come across for their research project and submit this as a PDF to Canvas. The annotated bibliography must include a minimum of five (5) sources. Each source citation will be in Chicago style. After the source citation, students will also include a written annotation that summarizes and evaluates the source for their research.

Below is a link to a UVU guide for writing Annotated Bibliographies with examples:

https://www.uvu.edu/writingcenter/docs/handouts/common_assignments/annotatedbibliography.pdf

STEP 3: POSTER PRESENTATION – ROUGH DRAFT

Each student should develop a rough draft of their poster presentation. Students should keep in mind the final poster presentation guidelines for UCUR below when composing their rough draft (<https://www.ucur.org/presentation-guidelines>):

- Poster dimensions: up to 40" tall x 46" wide. (I recommend a size around 24"x36")
- Include abstract rough draft on the poster.
- Include working bibliography of sources used for the research.
- Posters must be readable from three feet away.
- Poster should include:
 - presentation title
 - student name
 - research advisor name
 - school
 - department

Submit your poster presentation rough draft as a PDF in Canvas. Instructor will provide feedback.

Below are examples of research poster layouts.

STEP 4: FINAL RESEARCH ABSTRACT – SUBMIT TO UCUR

Each student will submit a **1) final research abstract and 2) project title/subtitle** to the instructor. Students will finalize the research abstract for submission to the Utah Conference on Undergraduate Research (UCUR). The instructor for the course will serve as the faculty mentor for each student as they prepare their work for submission. In addition to the abstract submission requirements outlined below, each student will need to carefully follow the guidelines on UCUR's website when preparing their final abstracts (<https://www.ucur.org/presentation-guidelines>).

Your abstract submission for a “**Poster Presentation**” format must include the following:

- Title and subtitle
- Clearly state the central research question and/or purpose of the project.
- Provide brief, relevant scholarly or research context (no actual citations required) that demonstrate its attempt to make a unique contribution to the area of inquiry.
- Provide a brief description of the research methodology.
- State conclusions or expected results and the context in which they will be discussed.
- Discuss any limitations to the study.
- Recommend next steps if the research were to continue.
- Include text only (no images or graphics at this point).
- Abstract should be well-written and well-organized.
- Abstracts should be no more than 400 words in length.

Examples of Research Abstracts:

- Student Abstracts from past UCUR conferences (<https://www.ucur.org/abstracts>)
- Architectural Research Poster Abstracts from the 2013 ARCC Conference (see pp.725-743)
https://brandonro.files.wordpress.com/2020/08/arcc2013_poster-abstracts.pdf

Submit your final research abstract to 1) Canvas as a word document, and 2) to UCUR’s website (<https://www.ucur.org/submission-registration>).

Note that when submitting to UCUR you will need to include the instructor’s name and email on your submission and indicate what presentation type this will be (Poster Presentation)

STEP 5: FINAL POSTER SUBMISSION

Each student should incorporate any feedback received from the instructor on their rough draft. Continue to finalize the poster presentation and follow the poster presentation guidelines for UCUR below:

- Poster dimensions: up to 40" tall x 46" wide. (I recommend a size around 24"x36")
- Include final abstract on the poster.
- Include final bibliography of sources used for the research.
- Posters must be readable from three feet away.
- Poster should also include:
 - presentation title
 - student name
 - research advisor name
 - school
 - department

Submit your poster presentation as a PDF in Canvas.

STEP 6: PRESENTATION TO CLASS

Each student will have ten to fifteen (10-15) minutes to present their architecture research project and poster to the class. Students will want to explain the following during their presentation:

- Clearly state the central research question and/or purpose of the project.
- Provide brief, relevant scholarly or research context that demonstrate its attempt to make a unique contribution to the area of inquiry.
- Provide a brief description of the research methodology.

- State conclusions and significant findings from the project.
- Discuss any limitations to the study.
- Recommend next steps if the research were to continue.

Submit your PowerPoint presentation to Canvas.