ACSA114 Annual Meeting:
CONVERGENCE / DIVERGENCE

Association of Collegiate Schools of Architecture, ACSA
Chicago, IL | March 26-28-2026

AIAS CRIT Scholars

Student Abstracts

CRIT Scholar is a research-based fellowship program funded by the AIA in partnership with several prominent architecture firms. The program supports student research and serves as an exclusive opportunity for students to receive further guidance in their own research. The long-term objective is to encourage students to be actively involved in furthering architectural innovation in support of the design profession through mentored research projects embedded in academia and practice.

Note: These submissions did not go through the ACSA Peer-Review process and selections were made by AIAS.

A Queery on Space: Intersectional Identities and Programming for Asian Queer Individuals

Kody Cheung, Drexel University

Subneighborhoods like Chinatowns, Little Italys, and Gayborhoods offer cultural refuge and celebration. Though these have cultural importances, there aren't as many places that facilitate the intersection of identity. There are queer bars and queer community centers, and there are Asian centers and Asian theaters; yet the mix is scarce. This shows that there aren't selected physical spaces for those with many identities to feel accepted, safe, and secure. Thus, "A Queery on Space" uses the queer-Asian overlap to investigate a way to create spaces for intersectional individuals to feel safe, secure, and proud. This research will touch on the essential exploration of precolonial contexts of the yinyang and extrapolation of the definition of "queer" through phenomenological, cultural, sustainable, and figurated lenses to produce a framework that describes and designs spaces that are effectively both queer and Asian. By studying the essences of queerness other than its sexuality definition, then there can be a true framework of designing a queer space. Overall, "A Queery on Space" looks into the research of creating community-based and residential spaces for queer and Asian individuals that stray away from stereotypes and colonial thinking. This research will be used to tie into my current thesis project, where a program and space that supports queer individuals will be strategically placed in a Chinatown to explore the intersections that arise. Queer is the condition, Asian is the context. As this is a case study for creating an intersectional space for queer-Asian individuals, nevertheless, it should serve as an emphasis and initiate conversations of placemaking for individuals with intersectional identities.

Presentation Session: *Structuring Relationships: Design Education and Community Practices*
Friday, March 27, 2026, 9:00am-10:30am

AR-Mediated Sequential 3D Printing Using Robotic Arms

Julia Kasper, Carnegie Mellon University

3D Printing using robotic arms has significantly expanded the possibilities of fabrication, construction, and detailing in architecture, yet many workflows remain constrained by isolated and planar build plates. This research explores how robotic arms can operate beyond these planar limitations to print onto and interact with components during the assembly process. Through sequential 3D printing onto existing surfaces, the integrated use of augmented reality (AR) enables full-scale visualization of fabrication sequences, robotic behavior, and material interactions, while acting as a preventative measure to anticipate collisions and functional errors. The work frames printing as an incremental act–one that builds upon, binds, and extends existing elements through successive stages of assembly mediated by AR to offer early feedback, reduce calibration errors, and visualize processes. By adapting established robotic printing frameworks towards construction-oriented processes, this research suggests new possibilities for AR-

mediated sequential fabrication and assembly in adaptive contexts with applications of combining differing scales, varying materials, and angled print formations.

Presentation Session: *Systems of Architectural Inquiry*
Friday, March 27, 2026, 9:00am-10:30am

Change Starts Small: Implementation of Accessory Dwelling Units (ADUs) as an agent for affordable housing, circularity, and neighborhood revitalization in New York City, with Jamaica, Queens as Case Study
Sherry Aine Te, Columbia University

The need to increase affordable housing stock has rarely been this urgent. New York City has been experiencing the worst affordability crisis over the last two decades. New York City faces significant housing affordability challenges, with low- and middle-income residents disproportionately affected by rising costs and housing shortages. ADUs (Accessory Dwelling Units) present a viable, underutilized strategy to increase the affordable housing supply efficiently by leveraging existing residential properties without requiring extensive new land development. In line with the City of Yes' recent approval on updating zoning laws to allow ADUs in New York City, the city must partner up Community Development Corporations (CDCs), organizations that have a strong relationship to the communities they serve to increase housing supplying through developing ADUs. In Jamaica, Queens, the paper's neighborhood case study, CDCs can leverage the foreclosed housing stock as primary sites for adding ADUs. This paper proposes to utilize the 'attached' ADU building typology to create three new programmatic possibilities to house more residents in a single residential house lot, increasing occupants' income options, decreasing the city's foreclosed housing stock and providing more housing for residents. To match the City of Yes' projected housing target of providing 80,000 units over the next 15 years, and with a current shortage of construction workers, pre-fabricated and modular construction is a recommended construction method for efficient and minimal disruptive neighborhood development. While slow to adopt new construction technology, some CDCs are inclined to use sustainable methods, based on interviews with CDC professionals. This approach addresses housing disparities while aligning with climate goals by promoting compact, energy-efficient development through density and upzoning. This research presents a policy-to-built solution for affordable housing with the potential to guide policy reforms in New York City and serve as a model for other global cities.

Presentation Session: *Rethinking Urban Design*
Friday, March 27, 2026, 2:30pm-4:00pm

Predictive Modeling and Bench-Scale Analysis of Mmbrane Fouling for Sustainable Water Management
Josephine Adelegan, Howard University

Membrane fouling is a major operational challenge in wastewater treatment systems, affecting efficiency, reliability, and sustainability. This research focuses on predictive modeling of crossflow ultrafiltration membranes using Artificial Neural Networks (ANNs), grounded in detailed analysis of experimental datasets collected from prior studies. By examining operational parameters, foulant compositions, and system responses, the work identifies critical factors influencing fouling behavior and filtration performance. Beyond predictive modeling, the study emphasizes understanding the experimental foundation: how the bench-scale data were generated, structured, and validated. This focus ensures that model predictions reflect realistic process conditions and informs a proposed bench-scale replication to experimentally verify insights in a controlled, resource-efficient setup. The work also situates membrane performance within a broader systems perspective relevant to architectural design. Water treatment infrastructure functions as a complex, constraint-driven system, where flow dynamics, material properties, and operational variables must be carefully balanced. Insights from this research can inform resilient water system design, extend membrane lifespan, enhance treatment efficiency, and guide sustainable urban water strategies, including applications in low-resource contexts. By combining rigorous data analysis with experimental understanding, this study contributes to sustainable water management and demonstrates the value of integrating predictive modeling with practical, systems-level design thinking.

Presentation Session: *Designing for Ecological Futures*
Friday, March 27, 2026, 2:30pm-4:00pm

Intricacies: Rediscovering a Yoruba Southwest Nigerian Architectural Identity
Oluwapelumi Adefarakan, Norwich University

Modernism was a school of thought and a way of architectural design practice in Africa from the 1940s to the 1950s, when an increasing number of African countries sought independence from their colonial powers. Many architects like Maxwell Fry and his wife Jane Drew were at the forefront of this new design approach, particularly in British West Africa. The two architects, alongside many other European designers and contractors, championed Nigeria's infrastructure and nation-building efforts in the first three decades after independence. It was increasingly evident that many buildings were designed with the underlying philosophy that forms ever follow function. As history unfolded and embroiled the country in decades of coups and regime changes, government projects exemplified the most glaring failure of the modernist design approach: a lack of connection to the site on which it sits. Southwest Nigeria has a unique architectural vernacular rooted in the rich culture of the Yoruba people and the many prominent kingdoms that lasted for centuries till the British conquered them in 1884. Of all the regions in the nation, the Yorubas were the most influenced by British rule, quickly learning and adapting to Western ideologies, practices, and overall way of life. This sudden change in design practices resulted in those storied kingdoms fading into antiquity and abandoning traditional materials and craftsmanship. Conflict along ethnic lines during the most recent presidential and gubernatorial elections in 2023 has

led to discourse around ethnic identity and preserving what is left of it in an increasingly Westernized society. This paper seeks to enter that discourse from an architectural point of view; it expresses a desire to revitalize the urban fabric by accentuating critical elements from a time that once was but with a modern, perhaps parametric twist. It also argues that intricacy as a concept in architecture is the optimal approach to reestablishing Southwest Nigerian identity through design and that adherence to specific design principles will result in an architecture that is rooted not only in its program but also in the culture for whom and the environment upon which it is designed for and in respectively. The research, in order to explore that theory, provides the framework that culminates in five design opportunities at all scales: a motif, an artifice, a pavilion, a landscape intervention, and a student center, all at the International School University of Lagos, in Lagos State, Nigeria.

Presentation Session: *Pedagogical Languages*
Saturday, March 28, 2026, 11:00am-12:30pm