FY24 Office of Research Report

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SUMMARY

This 3rd-annual CBE Office of Research (CBE-OR) report aims to highlight FY24 (July 2023-June 2024) productivity, outcomes, and impacts; and the efforts of the CBE-OR to support this work.¹

FY24 awarded funding supporting research-related activities totaled \$5,481,400. Categories of funding awards received in FY24 include Grants and Contracts (\$4,076,305), UW Internal Funding (non-CBE) (\$408,415), CBE Internal Funding (\$24,000), Gifts in support of research (\$573,126), and Service Agreements (\$399,554). In FY24 through the Office of Sponsored Projects (OSP), CBE researchers submitted 48 proposals, with 17 grants and contracts awarded to CBE PIs.

CBE researchers published over 83 publications which are listed on the research portal, including journal articles, books, and book chapters collectively (more information is detailed in section "1. CBE Research Outputs"). 50 news stories were published on the CBE research portal website celebrating CBE research activities.

CBE-OR's Strategic Action Plan (Figure 1) is based on the understanding of CBE's research needs (which are detailed in the section "2. CBE research needs"), and our goals of supporting, connecting, elevating, and accelerating research. We also used four "lenses" across our work plan: cross-boundary scholarship; supporting student research; equity, diversity, and inclusion; and continual improvement. We organize the work in 9 interrelated areas of focus, under each of which we'd planned a suite of activities. This work plan drove all our activity for the year, and is detailed in the sections under "2. CBE-OR efforts."

Figure 1: CBE Office of Research Strategic Action Plan 2023-24

¹Note that the 2021-2022 report reported metrics on an Annual Year basis (from January 2021 - December 2021). We shifted to a Fiscal Year metric analysis July 2022 - June 2023 in the FY23 report to align with the academic calendar and the university's fiscal year reporting. The FY24 report builds upon these 2 previous reports.



1. CBE RESEARCH ACTIVITY

In this section, funding and outputs from CBE research are discussed. By tracking proposals, awards, and dissemination, we can see CBE's positive impact.

1.a. CBE Research Impact

The work across the college is supported by a variety of sources in our departments and programs, funded research, service agreements and gifts. Outputs include publications and reports, the work done with community partners during research and teaching projects, and the shared learning opportunities that support growth and development of students, faculty, and staff during the research process.

CBE research outputs include academic products such as journal articles, reviews, books, and book chapters. In FY24, 83 publications were added to the research portal, the majority of which were journal articles, and some reports. 50 news stories were added to the research portal to highlight accomplishments and activities in CBE research.

Many shared learning opportunities took place in FY24, notably the first annual CBE Climate Solutions Symposium hosted by the Climate Solutions Community of Practice with support from the Office of Research and CBE Dean's Office. This event included a well attended poster session with faculty, staff, and students sharing their research products and conversing with fellow researchers and academics about their work. The event drew upwards of 60 attendees (see below in 2.m. Research Events). Additionally, we hosted multiple guest speakers during FY24 supported by CBE-OR. This included speakers from other research organizations such as the CEO of the New York Climate Exchange, and researchers visiting or working in the Seattle area who wanted to engage with CBE faculty, staff, and students. Finally, to support the growth and development of students, faculty, and staff doing research, CBE-OR hosted trainings, research meetings, and guest speakers throughout FY24, to create opportunities for engagement and learning. Trainings included grants administration resources and best practices hosted by the CBE Research Administrator, to pair with the roll out of newly approved and implemented Policies & Procedures (P&Ps). Research administrators worked with 25 CBE researchers in the college as PIs or Co-PIs on grant proposals during FY24. Research meetings took place in Autumn and Winter academic quarters, to discuss research updates, promote P&Ps, and discuss opportunities for support with CBE researchers.

All of these opportunities allowed for a deeper engagement amongst the CBE research community, increased visibility of CBE research projects and outputs, and created opportunities for growth amongst our community members. The impact CBE-OR support had on this work includes many hours of operational support to make these events and shared learning opportunities happen, as well as mentorship and leadership from Associate Dean for Research <u>Carrie Sturts Dossick</u> throughout FY24.

1.b. CBE Research Funding

Research funding is discussed below for FY24. The University of Washington completed a planned fiscal transformation project in July 2023 which impacted financial operations in FY24. **Overall, FY24 funding supporting research-related activities totaled over \$5,481,400. Categories of funding received in FY24 include Grants and Contracts (\$4,076,305), UW Internal Funding (non-CBE) (\$408,415), CBE Internal Funding (\$24,000), Gifts in support of research (\$573,126), and Service Agreements (\$399,554).**

1.b.i. Grants and Contracts

Grants and contracts in CBE are supported by two different offices: CBE's Finance and Administration Office and CSDE (Center for the Study of Demography and Ecology). During FY24, 25 different CBE faculty were PIs or Co-PIs on grant proposals and awards. During FY24 CBE researchers submitted 35 proposals through the CBE Finance and Administration Office, 5 proposals through CSDE, and 8 proposals as Co-PIs submitted through other departments.

During FY24, 17 awards were received, totaling \$4,076,305, 1 of which was through a different department. No awards were received through CSDE in FY24.

Of note, researchers had a 100% success rate when seeking funding in FY24 from Washington State Department of Transportation, the New Horizons Foundation, Pacific County Economic Development Council, Robert Wood Johnson Foundation, or the City of Snohomish as the sponsors. The total amount awarded by department is represented in Table 1.

This data represents what is available in OSP at the time of compiling this report. The data is dynamic, but is as complete as possible.

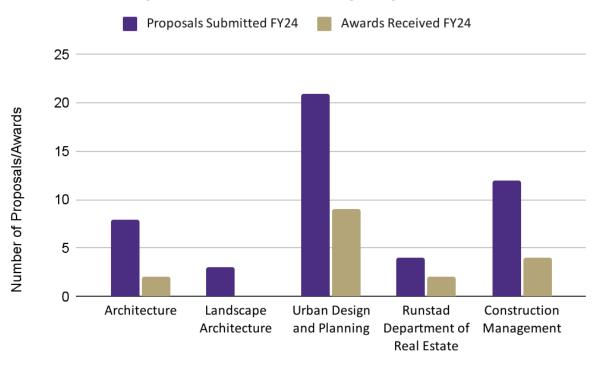
	External Funder Grant & Contract Awards*		CBE Awards & Endowment Funds	Totals
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Table 1: Awards Received in FY24 by Department

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Architecture	\$589,000	\$179,722	\$10,000	\$778,722
Landscape Architecture	\$0	\$120,000	\$5,500	\$125,500
Urban Design & Planning	\$2,372,311	\$0	\$3,500	\$2,375,811
Runstad Department of Real Estate	\$504,994	\$39,693	\$2,500	\$547,187
Construction Management	\$610,000	\$0	\$2,500	\$612,500
Built Environment PhD Student	\$0	\$69,000	\$0	\$69,000
Totals	\$4,076,305	\$408,415	\$24,000	
Total Awards		\$4,508,720		
*In addition, Architecture PIs received \$518,126 from gifts in support of research, \$55,000 from the CBE ARC Program, and Architecture and Urban Design and Planning PIs received \$399,554 in service agreements. **Note that collaborative proposals are split between departments in terms of award funding amounts. For example, a \$20,000 would be represented as \$10,000 to each of the co-PI's departments.				

Of the 17 grant and contract awards received from external funders, Urban Design & Planning brought in 9 awards and Construction Management 4 awards. Architecture 2 awards, Runstad Department of Real Estate 2 awards, and Landscape Architecture did not receive any awards from external funders in FY24 (see Figure 2). Notably, in FY23, all 5 CBE departments received an award amount of at least \$93,000 or more.

Figure 2: Number of Grant and Contract Proposals Submitted and Awards Received by Department*



Proposals and Awards by Department

*Figure 2 reflects all proposals submitted in FY24, and all awards received in FY24. This does not reflect a one-to-one comparison of proposals to awards due to the time lag expected between submitting a proposal and receiving a notice of award. For example, a proposal submitted in May 2024 would be represented in this Figure as a proposal submitted in FY24, however, it would likely not be represented as an award received in FY24 because it was not funded by the time FY24 closed. This is not a one-to-one representation due to carry over of when proposals were awarded either from FY23 or not-yet awarded which would be expected in

Department

In addition to external funding, UW-Internal grants have been awarded to CBE from other UW organizations, including Population Health Initiative, EarthLab, Campus Sustainability Fund, and Royalty Research Fund. During FY23, over \$244,833 was awarded by UW entities. In FY24, an upward trend in funding from internal UW sources was evident, with \$408,417 being awarded to CBE researchers from UW (non CBE) sources. See Table 2 for additional details regarding amounts received from internal sources. Additionally, CBE awarded funds from the college to internal researchers, totaling \$24,000 (discussed further in section "3.j. Internal Grants").

Table 2: Breakdown of Awards from UW-Internal Funding Sources (non-CBE)

FY25.

Organization	Total Amount Received	Number of Awards Received	Award PI Departments
EarthLab	\$160,000	2	Landscape Architecture, Architecture
Population Health Initiative	\$100,000	2	Architecture, Construction Management
Research Royalty Fund	\$79,415	2	Runstad Department of Real Estate, Architecture
Campus Sustainability Fund	\$69,000	1	Built Environment PhD Student

The total amount of funding received by CBE is an important metric to measure the year-over-year growth and reach. FY23 research funding totalled \$10,789,437, which surpassed the \$4,000,000 benchmark of research support received in FY22 with a particularly large single award that year. FY24 funding totaled over \$5,481,400, which reflects a lower award amount compared to FY23. However, notification of award was received at the end of FY24 for a Environmental Protection Agency award for \$9.9 million to Kate Simonen's project "VERE-LCA: Validating and Expanding Research and Education for LCA Policy." With this large award, the college continues to follow a positive trajectory for funding with a range of support from various sources and funding types. With the additional support of an expanding CBE Finance and Administration Office (discussed further in "3.e. Strategy and Infrastructure"), the trend of increased funding for the college is expected to continue.

In FY24, 4 endowed professorships were awarded to CBE Faculty. Endowed professorships support faculty efforts including their research activities, along with their other academic efforts.

Built Environment Faculty Fellowship for Research Innovation: Catherine De Almeida, Landscape Architecture

Howard S. Wright Endowed Chair in Architecture and Urban Planning: Steve Badanes, Architecture

Marsha and Jay Glazer Endowed University Professorship: Gregg Colburn, Runstad Department of Real Estate

Perry B. Johanson Family Endowed Professorship: Gundula Proksch, Architecture

1.b.ii. Gifts in support of research

CBE received gifts in support of research totaling \$573,126 during FY24. This funding was to support 5 research funds: Integrated Lab Design Support Fund (\$39,500), Northwest Energy Efficiency Alliance (NEEA) Base Support (\$160,000), Center for Integrated Design for Discovery Commons Fund (\$28,596), Carbon Leadership Forum (\$290,030), and CBE Applied Research Consortium (\$55,000). This total amount for FY24 represents actual amounts received, and does not include any outstanding pledged payments. This is a decrease from the gifts in support of research total amount of \$929,236 received during FY23.

1.b.iii. Service agreements

CBE Researchers, and some Centers and Labs, received funding in the form of service agreements from industry, government, and community partners. Service agreements totaled \$399,554 in FY24 and were received across the CBE departments. This is a decrease from the service agreement total amount of \$677,548 received in FY23.

2. CBE OR EFFORTS

CBE-OR's goals are to support, connect, elevate, and accelerate research at CBE. In addition to aligning our work with the CBE Strategic Framework and our understanding of CBE research needs, we utilized 4 overarching lenses in our work during FY24. These lenses are Student Research Experience, Cross-Boundary Scholarship, Equity, Diversity, and Inclusion, and Continual Improvement.

In FY23, a Grants Administrator and a Fiscal Specialist were hired to support grants administration operations within CBE. During FY24, the grants administration team supported 48 grant applications, and simultaneously supported the drafting and finalization of P&Ps related to grants administration. The P&P review and finalization process was led by CBE-OR, with the CBE-OR Administrative Specialist collecting comments and routing all P&Ps through the 3 review rounds each academic quarter. The P&P review process also supported additional engagement with CBE students via Student Council. This involved the CBE-OR Administrative Specialist collecting to request their participation in the review process each academic quarter.

13 P&Ps were finalized and published in FY24 (plus 1 additional P&P reviewed but not yet finalized) to support the accurate, inclusive, and transparent creation and implementation of research, teaching, administration, and other efforts.

2.a. Student Research Experience Lens

ADR Dossick continued working with the director of the Built Environments (BE) Ph.D. program to adequately support Ph.D. student and programming needs.

PhD students continue to be highlighted and included on the Research Portal, especially when they are published in academic journals. Additionally, Ph.D. students participated in the Climate Solutions Symposium in May 2024 (expanded upon below in 2.m. Research Events).

In coming years we would like to further understand the needs of student researchers and to develop additional supports for that community.

2.b. Cross-Boundary Scholarship Lens

The CBE Office of Research is committed to supporting the communities of practice (CoPs) that emerged from the CBE Strategic Framework efforts: Humanities, Histories, & Futures; Technology; and Climate Solutions. This support looks different per CoP; in FY24 the Climate Solutions CoP hosted the first Community of Practice Symposium. More details can be found in the CoP section of this report (section 2.i.).

The cross-boundary scholarship is clear in the funding received by CBE research teams. Population Health Initiative funding was awarded to multiple CBE projects in FY24, with many teams involved in collaboration with other colleges and disciplines on campus. Additionally, ongoing collaborations with other departments and centers such as CSDE also facilitate CBE research. Of the 48 proposals submitted in FY24, 9 involved PIs in other departments or colleges.

Throughout these engagements across units, the university, and beyond, we prioritized the elevation of interdisciplinary and community-engaged scholarship. We also work to uplift collaboration in all mention of CBE research, all research-related events, and all RFPs and proposal efforts for which CBE leads or provides input.

An example of cross boundary scholarship in CBE is supporting nominations and visits of guest lecturers. In January 2024, CBE supported the nomination of author and journalist Victor Luckerson as speaker for the UW Public Lecture series, in consideration for a visit during the 2024-2025 academic year. CBE is one of seven co-sponsor departments for Luckerson's visit: Social Work, History, American Ethnic Studies, College of Built Environment, Political Science, Center for Studies in Demography and Ecology, and the UW Honors Program.

CBE was a successful co-sponsor of a Graduate School Public Lecture Series speaker, Dr. Yvette Pearson. Dr. Pearson visited the University of Washington in April 2024, spoke at Town Hall Seattle, and spent two days speaking with different groups of University faculty, staff, and students. Co-sponsoring departments of Dr. Pearson's visit included: The Graduate School, College of Built Environments, Department of Civil and Environmental Engineering, College of Engineering, Department of Gender, and Women's and Sexuality Studies.

2.c. Equity, Diversity, and Inclusion (EDI) Lens

The CBE-OR takes multiple actions through an EDI lens, but there is always an opportunity for continued improvement in this area.

Efforts include:

Research EDI resources are shared as an item in the monthly research newsletter.

For the CBE internal grant awards, EDI was an explicit evaluation criterion in award assessment for the Inspire Fund. All of the November 2022 Research Restart awards summarized in this report addressed EDI in their proposals. Of the March 2024 Inspire Awardees, 3 addressed EDI-related topics, with 1 of the awardees explicitly discussing EDI impacts in their funding application.

Applied Research Consortium addresses EDI through an explicit intercultural curriculum for both the students and the participating consortium members. This program elevates students of color in embedded internships in industry settings.

A goal for FY24 was to further monitor the exposure and "air-time" individuals and projects are offered in spaces to share their work. Sharing and distributing those opportunities with an EDI lens will continue to work toward that goal. During FY24, research faculty who were new to CBE were given the opportunity to present their work in the monthly All-College Meeting research highlights. Highlighting new faculty ensured those faculty had not previously received "air time" to share their work with their colleagues in that format. We use an airtime tracker to explicitly think about representation and welcome nominations for speaking opportunities.

2.d. Continual Improvement Lens

Throughout FY24 we continued to work to improve our services and our approaches. For example, CBE-OR took the lead in developing the P&P process in FY23, which resulted in the publication of 13 P&Ps in FY24 that will increase transparency, equity, accountability, and efficiency for research as well as other activities.

An additional goal is to improve the functionality and effectiveness of our internal and external communications; a new project called the "publications project" aims to automate more of the portal process regarding publications and research products (see 2.1. External Communications). Finally, improvements were made to the CBE internal research newsletter, transitioning the resource to the CBE Intranet to allow for searching and archived newsletters in one place (see 2.k. Internal Communications).

2.e. Strategy and Infrastructure

With the work of the new staff members hired in FY23 to support CBE research operations, many advances were made in research infrastructure.

In partnership with ADR Dossick and the CBE-OR Administrative Specialist, the Research Administrator has supported development of P&P resources for CBE-OR related to grants administration. These P&P resources were finalized and published to the CBE Intranet in FY24. In FY25, these resources will be linked to a newly revised Research Roadmap page on the CBE Intranet. Refreshing the Research Roadmap on the CBE Intranet will be a key update to research infrastructure resources, allowing for a centralized place for answers to common questions, as well as trainings and other resources. Additionally, the funding resources page on the CBE Intranet will be revised, to guide PIs to use keyword searching in common grant databases. This will allow for researchers to find multiple databases linked from our Intranet, and use their keyword for their work to find relevant funding.

ADR Dossick participated in a space planning pilot, moving into a shared office workspace in Architecture Hall with 3 other CBE faculty members. This pilot aimed to test shared space utilization in a new format for the department. Ultimately, this pilot resulted in ADR Dossick returning to a single occupancy office due to the need for quiet space to conduct meetings without disrupting officemates. This pilot highlighted a key need for future shared space; virtual meeting room sound booths, or other noise canceling areas to take virtual meetings if someone's desk is in a shared space, or they are "hot desking." The space planning updates will continue in FY25.

An additional space planning project was to support high performance computing in Gould Hall, including implementing Hyak computing resources within a high performance computing space in Gould Hall. The high performance computing resources were a request from CBE research faculty to support their research needs. The college invested in a "node" for CBE work. <u>https://be.uw.edu/spaces/computing/hyak-resources/</u>. Students can access these resources as well. ADR Dossick supported the planning and set-up of these resources during FY24 and CBE Computing work with Hyak staff in the implementation.

In FY24, a need was identified for research operations support for specific research projects. ADR Dossick has begun to explore various models to address this need for support, including a shared student or staff role to provide support across multiple projects. In March 2024, the CBE-OR Administrative Specialist traveled to Bogotá, Colombia for one week with Helen Pineo's research team to support project activities at a multi-site in-person event. The need for project management support for larger activities such as this international event is an opportunity for CBE-OR to explore different models of support for Centers, Labs, faculty, staff, and students who need project management resources.

2.f. Evaluation and Metrics

Reports were pulled for FY24 evaluation and metrics. Reports consisted of marketing and communications reports regarding research intranet page viewership, advancement reports regarding financial gifts in support of research, and grants and contracts reports summarizing totals regarding funding and grant applications applied for and received. This report summarizes the evaluation and metrics.

2.g. Professional Development

ADR Dossick conducted a range of mentorship and professional development activities throughout FY24. ADR Dossick maintains office hours throughout the year to allow for access and visibility when support is needed. ADR Dossick met with CBE faculty and staff for over 33.5 hours during FY24. Meeting topics included general onboarding and introduction to CBE-OR support, guidance for grant application planning and submission, grant management support, and shared learning sessions. ADR Dossick also attended over 10.5 hours of research related meetings with external research stakeholders (for example, a meeting with German Research Foundation representatives who were visiting the University of Washington). ADR Dossick also attends monthly Research Advisory Board meetings with the Vice Provost for Research, research leaders, and ADRs from across campus.

The CBE Research Administrator hosted a series of trainings entitled "Research in CBE" in conjunction with the new P&Ps developed related to research. These trainings included in-person and remote opportunities to prioritize accessibility for the 2-3 sessions for each of the 6 P&P topics. There were 33 attendees total across the trainings, with only 1 of those attendees joining all 6 trainings (however, this individual has since left CBE). The average number of sessions per person was 2.5.

2.h. Centers and Labs Oversight

CBE-OR continues to provide support and oversight for Centers and Labs. Although budgeting and human resources oversight is conducted by Centers and Labs department Chairs, the CBE-OR team has the opportunity to provide other kinds of support. In FY24, CBE leadership continued to discuss resources and frameworks needed to support the Centers and Labs. In FY25, the possibility of providing a set of centralized resources will be explored further so that

all Centers and Labs within CBE will have access to resources as they are developed. This may include mentorship and coaching resources, as well as resources dedicated to searching for securing funding. Additionally, CBE-OR is working to support Centers and Labs in securing the space and facilities that are needed to support their full range of work. In FY24, ADR Dossick spent 2 hours in meetings with Centers and Labs leadership to support operations and future development.

2.i. Communities of Practice (CoP)

CBE-OR supports topic-based and role-based communities of practice (CoPs). Topic-based CoPs include Climate Solutions; Technology; and Humanities, Histories, & Futures. Role-based CoPs include research leaders, staff who do research, and students who do research.

In October 2023, the Technology Community of Practice served as the College of Built Environments sponsor for the PacTrans Region 10 conference which took place on UW Campus. ADR Dossick was the faculty lead for the Technology CoP and supported planning and publicity of the conference.

The May 2024 Climate Solutions Symposium was hosted by CBE and planned by the Climate Solutions CoP. The symposium was very well attended by faculty and students from multiple departments in CBE, especially faculty who were teaching studio courses that integrated climate solutions from research into teaching. Students, faculty, and staff, submitted 38 research posters from their work in studios and classes. Kate Simonen was the faculty event Chair, and Narjes Abbasabadi was the poster symposium lead. Christine Bae and Heather Burpee were on the faculty planning committee. More details about this event are expanded upon below in 2.m. Research Events.

2.j. Internal Grants

CBE administered three internal grants in FY24. Johnston-Hastings Endowment for Research Travel of Architecture Faculty; the Johnston-Hastings Endowment for Publication Support; and the CBE Inspire Fund. Products from the previous cycle of the Research Restart Fund are also detailed below.

The Johnston-Hastings Endowment was created by L. Jane Hastings, a successful architect, and Norman J. Johnston, a CBE architecture professor. This was a particularly poignant year for this fund as <u>Jane Hastings passed away on March 25, 2024</u>. This year's report expresses special gratitude to Jane for her continued support and involvement with CBE over the years.

Johnston-Hastings Endowment for Research Travel of Architecture Faculty

The FY24 Johnston-Hastings Endowment for Research Travel of Architecture Faculty was awarded to <u>Robert Hutchison</u>, an affiliate professor in the Architecture department.

The travel award supported Hutchinson's travel to the Washington Coast in Spring 2024, fulfilling part of the award proposal activities (travel to the Oregon Coast to complete the proposed activities will occur in Fall 2024, with an approved funding extension). Due to the timeline of project activities, there were no products produced from this funded travel at the time of this report. However, this proposal is an extension of other research activities on the same

subject. Previous work on this topic has recently resulted in an installation entitled "Tsunami Infrastructure along the Tohoku Coastline of Japan" at the Mini Mart City Park gallery in the Georgetown neighborhood of Seattle throughout the month of June 2024. Although this art installation is based on Japan-focused research, it is related to the project's focus of tsunami infrastructure and public space. Products resulting from the Washington and Oregon coast travel will be highlighted in a future report.

Two individuals were selected to receive the FY25 Johnston-Hastings Research Travel Award.

Associate Professor Ann Huppert, Department of Architecture, was awarded funding to support archival research in Rome's Archivio di Stato and the Carmelite Archives on the topic of Santa Maria in Traspontina and Building the Borgo related to the book project entitled "Building Knowledge: The Culture of Construction in Sixteenth-Century Rome."

Adjunct Professor, Department of Architecture; Associate Professor, Department of Urban Design and Planning Manish Chalana received funding to conduct research at the British Library in London for an ongoing book project entitled "Reclaiming the Margins: Diversifying India's Multicultural Heritage through Historic Preservation."

Johnston-Hastings Endowment for Publication Support

There was no recipient of the FY24 Johnston-Hastings Research Publication Award, due to lack of submissions eligible for the funding.

Professor Emeritus Nancy Rottle, Department of Landscape Architecture, was awarded the FY25 Johnston-Hastings Research Publication Award. The award will support a subvention in her publication "The Art of Sustainable Stormwater," which has been accepted for publication and is anticipated in Fall 2025.

Inspire Fund

In FY24, the 4th cycle of the <u>Inspire Fund</u> was awarded. The purpose of the Inspire Fund is to support research activities for which a relatively small amount of support can be transformative. This may include work that is traditionally underfunded, or that done by scholars who are members of groups currently underrepresented in our college.

2024 Inspire Fund Awardees and projects are listed below.

- 1. "Mycelium Grow Lab for Student-led Research": Gundula Proksch, Tyler Sprague
- 2. "Exhibition of the works of OUR: Office of (Un)certainty Research": Vikram Prakash
- 3. "Emergence, Resilience, and Future(s) of Urban Informality in Seattle": Julie Johnson, Manish Chalana
- 4. "Analyzing the Impact and Mitigation Strategies of Transportation Electrification on Seattle's Gentrification": Lingzi Wu, Vince Wang

A cohort of projects was awarded Inspire Funds in April 2023. These projects are mentioned below with a summary of project work and progress.

 "Affordable Housing Book Project": <u>Gregg Colburn</u> and <u>Rebecca Walter</u> The Inspire Fund award funded 2 graduate students who were able to contribute to considerable progress on the book, *Affordable Housing in the U.S.* Additional details were provided by Gregg Colburn; "About 75% of the manuscript is now complete and Rebecca and I are finalizing the final chapters. The contributions of the graduate students were invaluable as we processed extensive data to support the narrative of the book." The project has faced a delay based on the book editor leaving the publishing company, Routledge, and a delay in identifying a replacement. Following this delay, the team anticipated having a full manuscript by the end of the first quarter and based on feedback from the editor/publisher could be in a position to finalize the book by the middle of 2024.

2. "Participatory Design as a Tool for Green Space Development in Amazonian Cities, Iquitos, Peru": Coco Alarcon and <u>Ken Yocum</u> The Healthy Amazonian Green Cities project included engaging with community members to develop the green space near their homes and on their own land. This project took place in Iquitos, Peru, a city of 0.5 million people. This city has the lowest development index for Peru, and also experiences species loss and urban heat island effects. This project worked to increase grean space prevalence to improve One Health

(health of humans, animals, and the environment). This funding supported the pilot phase of the project, in turn supporting the award of 2 spin off projects, focused on related topics including improving soil health, and a human-centered design focused student project.

3. "Benjamin F. McAdoo Jr. Research Collective - II": Tyler Sprague

The Inspire award supported formatting the exhibit on Benjamin F. McAdoo Jr. in Gould Gallery. The exhibit was open in Gould Gallery February 1st through March 15th, 2024. Tyler Sprague supplemented the CBE Inspire Funds with a grant from 4Culture, and the funds were used to hire 7 students to put together the panel displays for the exhibit, secure permissions for images use, and produce plots. Challenges arose associated with accessing 4Culture funds, due to the University of Washington Financial Transformation. After the exhibit, Tyler Sprague intends to prepare the Roll of Honor application for McAdoo.

4. "Preliminary Case Study: Readiness of Our Regional Electrical Vehicle Infrastructure Under the Increasingly Volatile Climate": <u>Lingzi Wu</u>

The Inspire Fund supported an Urban Design and Planning PhD student, Shiqi Ding, to work on the project. Shiqi Ding was able to complete a few research steps, including literature review, data collection, data preprocessing, and clustering. Additionally, she is working on spatial correlation analysis and cross-cluster comparison. Anticipated outcomes include the presentation of preliminary results at the 2024 ASCE International Conference on Computing in Civil Engineering and subsequent publication of the full research findings in a top-tier journal. An abstract was submitted to the 2024 ASCE International Conference on Computing in Civil Engineering.

Research Restart Fund

Four Research Restart projects were awarded in November 2022, with their products expected in late 2023 (FY24). These products are detailed below. November 2022 Awardees:

1. <u>Manish Chalana</u> "Heritage & Equity in Historic Preservation Practice in India" The Research Restart Funding was used to conduct a reconnaissance field trip to Delhi, India. Manish Chalana shared, "The purpose was to scope out select sites and archives to validate my hypothesis—a proof of concept of sorts. The funds allowed me to hire a local assistant in Delhi, whose familiarity with the city, communities, and local dialects made the reconnaissance more focused and effective." The broad goal of the Research Restart Fund was to assess the inclusivity and equity of current historic preservation practices in India, specifically examining how sites associated with minority groups have been managed in the post-colonial decades. This is being achieved through data analysis, field visits, and interviews with communities and professionals. However much of reconnaissance focused on select site visits, professional networking and community familiarity.

Notably, this preliminary work supported by the Research Restart Fund led to Manish Chalana receiving a Fulbright award to expand this research. Manish will travel to India for the Fulbright-Nehru Fellowship project. Manish Chalana's Fulbright description is as follows:

Historic preservation (or "heritage conservation" in India) is the practice of identifying, managing, and interpreting the historical record in the built environment. For many people, the resulting presence of these tangible reminders in their day-to-day world plays a major role in shaping their perceptions of who has contributed what to their nation's development. The magnitude and challenges of these tasks have increased dramatically in contemporary times, as the field has begun to grapple with the complexity of history. This is especially true in the world's liberal democracies, which express the values of equality and inclusivity. These challenges are not merely academic—as protests and counter-protests over the removal of Confederate statues in the US show, conflicting interpretations of history and their commemoration are something people are willing to kill or die over.

I was awarded the Fulbright-Nehru Fellowship to carry out a total of six months of research in Delhi starting in March 2024. My project will explore the state of historic preservation in India to understand how inclusive and equitable current practice is. I am particularly interested in exploring how sites associated with underrepresented communities appear in the historical record; among those that do, how they fare on the ground in terms of management and interpretation; and for those whose physical evidence in the landscape is no longer legible, what types of histories and memories have we lost. For the purpose of this project, I consider all communities outside the category of upper-caste, cisgender male Hindus as underrepresented to varying degrees. However, my primary focus will be on working-class communities, particularly Dalits (the untouchables); religious minority groups with non-Hindu origins, including Muslims, Sikhs, Christians, and Zoroastrians; and women and gender-nonbinary groups.

While Indian preservation practice is expected to fairly represent the contributions of an exceptionally diverse set of peoples to its development throughout many phases of conflict, conquest, and colonization, there is still considerable work to be done. This is especially true in terms of addressing structural biases and colonial framings that have not fully allowed historic preservation to support India's constitutional pluralism.

The goal of this proposed work is to uncover the extent to which preservation practice in India is addressing this challenge and to identify areas where it can further improve. My previous research and preliminary work, which was supported by the CBE Research Restart Fund, suggests that, even as historic preservation in India has indeed made significant theoretical and methodological strides since independence, in practice the field has continued to place by far the most emphasis on the histories of dominant and/or elite groups, and still has a long way to go in fully representing its diverse historical record. I plan to build on that work to systematically dive into historical records and databases of historic preservation organizations in order to expand the list of associated sites and identify illustrative case studies for each of the above-mentioned groups. I will supplement the case studies with field surveys and interviews with stakeholders—both preservation professionals and community members.

I plan to broaden the scope of my work beyond the National Capital Region (NCR) of Delhi, which was the primary focus of the reconnaissance project supported by the CBE Research Restart Fund. I intend to expand my research to include other regions of the country, aiming to provide valuable insights and lessons for historic preservation practices nationwide. During my visits to India, scheduled for the calendar year 2024-2025, I will be based at my alma mater, the School of Planning & Architecture in New Delhi. I will actively engage with students and professionals, conducting discussions and workshops on the subject of equity and inclusion in Historic Preservation through guest talks and interactive sessions.

2. Elizabeth Golden "Mesa Refuge"

This project includes partners at Arizona State University; Iglesia Cristiana El Buen Pastor; and Brick by Brick, City of Scottsdale Human Services Department. The focus of Mesa Refuge is the Iglesia Cristiana El Buen Pastor, a Spanish-speaking church located in Mesa, Arizona that has been providing shelter and supportive services to newly processed and released asylum seekers since 2018. After meeting with the head of the church, Pastor Ramirez, in the summer of 2022, the project team proposed to run tandem design studios at the University of Washington and at Arizona State University, to explore the possibility of a shelter on the church site to temporarily house asylees. The fourth-year undergraduate studios ran in the winter of 2023, with the UW studio partially funded by the CBE Restart Funding. Elizabeth Golden shared, "The partnership with Iglesia Cristiana El Buen Pastor is stronger due to this award. It allowed us to engage and work with a community that does not have the capacity to take on the challenges of designing, funding, permitting, and constructing a building that they desperately need."

3. Jeffrey Hou "Spaces of Resistance in East Asia"

Professor Hou's project focuses on exploring how local communities and social groups are engaged and organized in resisting socioeconomic disparities in East Asia with the help of spatial interventions. Professor Hou shared, "With the CBE Restart fund, I was able to travel to Taiwan, Japan, and South Korea in August and September 2023 to visit

sites in which local initiatives have taken place and to expand my research networks in the regions through my participation in a series of conferences and meetings."

A description of other activities supported by the research restart funding are as follows: The conferences and meetings included the 12th East-Asian Inclusive Cities Network (ICN) Workshop (Taipei, August 16~18), the 2023 Taiwan STS (Science, Technology, and Society) Association Conference (Taipei, September 1~2), the 25th-anniversary conference of the Pacific Rim Community Design Network (Sendai and Tokyo, September 16~18 and 20), and the International Federation of Landscape Architecture Asia-Pacific Region (IFLA-APR) Conference (Tokyo, November 16-18, 2023). The conferences allowed the opportunity to reconnect with many scholars and organizers in the region and expand current networks in the region.

The site visits included a series of walking tours organized with the help of local organizations and colleagues in the respective cities. Besides tours that are part of the above-mentioned conferences the site visits in Taiwan and South Korea included a tour of local design projects in Yilan organized with the help of Field Office Architects (August 19), a tour of local historic preservation projects in Taipei (August 22), a tour of cultural markets and festivals in Taipei and Taoyuan (August 26), a tour of community gardens in Seoul (morning of September 11), a tour of the Yongsan Train Depot Redevelopment Area led by the Korean People's Solidarity Against Poverty (afternoon of September 11), a tour of Sinchon led by the Citizens' Alliance for Creating a Walkable City (morning of September 13), and a tour of the Euljiro-Cheonggyecheon industrial area (afternoon of September 13). Other visits included the One-Euro Project in Seoul.

In Japan, the visits included a tour of community initiatives and impact of urban redevelopment in Shinagawa (September 4, 2023), a tour of the Edible Way project in Matsuo (September 5), a tour of hotels serving the unhoused in Minami-Senju (September 6), a tour of placemaking projects in Omiya (September 19), and a tour of community initiatives along the Tamagawa Joshui Greenway (September 20). In November, during another visit to Tokyo to speak at the IFLA-APR conference, I spent a few more days conducting additional interviews and site visits, including initiatives in the neighborhoods of Nishi-Nippori and Yanaka. One interview was conducted with Associate Professor Tetsuya Yaguchi at Waseda University and his former student Risako Hayashi concerning their research on *komodo shukoku* (Children's cafeteria) as an alternative community space.

In summary, through these site visits, Professor Hou was able to explore a variety of actions, initiatives, and programs that exemplify different forms of resistance against precarity and socioeconomic disparities in East Asian societies, specifically Japan, South Korea, and Taiwan which share similar political and economic institutions. Professor Hou shared, "I was also able to make connections with local researchers that I can return to in the future for more in-depth fieldwork." In terms of immediate outputs, one co-authored article about homelessness and precarity in Taipei was published in the special issue on poverty in *Topos: The International Review of Landscape Architecture and Urban Design* (no. 125) in December 2023. In addition, a paper focusing on walking tours as a fieldwork and community engagement method was accepted for presentation at the CELA 2024 conference in St. Louis.

Professor Hou shared, "My initial focus in this line of inquiry stemmed from my previous project that explores how the policies and practices of neoliberal capitalism in East Asia are being politically and materially contested by citizens through social actions and creative space-making. Through the visits this year, I started to develop a more specific focus on how these initiatives contribute to great social permeability in terms of interactions, collaboration, and understanding between groups of different socio-economic backgrounds, and how such permeability can engender greater actions and opportunities toward equity and justice. I plan to make this the focus of my next book project. By supporting my trips to East Asia this year, the Research Restart fund has been critical in helping me reconnect with scholars and practitioners in the region after a three-year hiatus due to the COVID-19 Pandemic. The connections have been critical to my work in the past which involved learning from and curating the work of scholars and practitioners in the region. The impact of the Pandemic on international travel has severely impacted my scholarship over the last few years. The fund has made it possible for me to rebuild the connections necessary to continue and further expand my research in Asia."

4. Kathryn Rogers Merlino "The Preservation Equity Project" and "Recipe for Disaster: Environmental histories of keeping up with the American kitchen" The Inspire funding was used in two ways by Kathryn Rogers Merlino, as described below. Initially, the proposal was to support the project entitled "The Preservation Equity" Project." The proposal, Mapping the Path to Equity and Inclusion in Historic Preservation, uses primary research sources, geospatial mapping, data visualization, and community engagement to promote diversity, equity, and inclusion in the preservation and reuse of our built environment. Although the proposal garnered very positive reviews, it was not accepted. "In the end, the funds were used to support sabbatical work, during which the research continued on Preservation Equity, and writing an invited book chapter entitled "Recipe for Disaster: Environmental histories of keeping up with the American kitchen" for the upcoming publication, Interior Provocations. The chapter traces the past seventy years of American kitchen design through the critical lens of cultural and technological influences and the resulting environmental impacts of the culinary hearth in the age of climate change. The chapter also investigates the most remodeled and replaced room in the single-family home, through the lens of waste, cultural trends, and social behavior."

Additional internal funding was received from different sources within the University of Washington. Below are some examples of this funding.

Population Health Initiative awarded the below funding:

- "Sustainable Materials for Structural Applications," <u>Tomás Méndez Echenagucia</u>, Eleftheria Roumeli* (October 2023)
- "DecarbCityTwin: A Platform for Equitable Decarbonization of the Built Environment," Narjes Abbasabadi, Chris Meek, Kate Simonen, Carrie Sturts Dossick, Daniel Kirschen*, Mehdi Ashayeri**, Lylianna Allala**, Ani Krishnan** (October 2023)

*denotes individuals from other UW departments or colleges; **denotes partners at other institutions or community organizations

Royalty Research Fund

- "CityEnerTwin: A Digital Twin Platform for Urban Building Energy Modeling to Support Decarbonization of the Built Environment – A Case Study of the University of Washington Campus," Narjes Abbasabadi (January 2024)
- "Exploring Transformative Solutions to Build Housing Security and Climate Resilience: The Community Land Trust Model," Vince Wang (January 2024)

EarthLab also awarded funding to CBE researchers:

- "Catalyzing Just Circular Communities: A Feasibility Study of a Large-Scale Anaerobic Biodigester to Generate Hyper-local, Community-Owned Clean Energy Infrastructure in Seattle's South Park," Catherine De Almeida, Gundula Proksch, Sarah Chu (graduate student) (March 2024)
- "Healing Amazonian Soils with Science and Indigenous Artisanry: Implementing Community-Based Composting System in the Urban Amazon," Rebecca Bachman (March 2024)

Campus Sustainability Fund awarded funding to CBE researchers:

• "Bird Friendly Campus" Judy Bowes (June 2024)

2.k. Internal Communications

CBE-OR continued the implementation of a newsletter through the CBE-research listserv. The newsletter includes highlights of CBE research; upcoming research meetings; updates from CBE-OR, as well as, when appropriate, from CBE's Office of Finance and Administration; opportunities for conferences, awards, fellowships, funding, and competitions; and events related to the built environment disciplines. The newsletter also features a section highlighting EDI resources for research.

The newsletter was transitioned in January 2024 from an email based format to a bulletin post format on the CBE Intranet. Posting the newsletter on the CBE Intranet bulletin allows individuals to filter the bulletin for previous newsletter issues to more easily access previous content. This was a main motivation for transitioning the newsletter out of email, so there was a more accessible archive of previous issues. The newsletter was also transitioned in February 2024 from bi-weekly to monthly. The newsletter was published February – June with the support of a CBE Masters student worker in the Dean's Office, who will continue to support the newsletter drafting and publication process in FY25.

To gauge and measure engagement with the newsletter, page viewership metrics for each issue of the newsletter posted on the CBE Intranet are available in Table 2.

Table 2: Intranet Newsletter	Engagement
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Newsletter Publication Date	Views (n)	Users (n)	Views per user	Average engagement time (seconds)
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January 2, 2024	44	37	1.2	37.2
January 16, 2024*	40	36	1.1	65.0
February 13, 2024	78	53	1.5	56.3
March 12, 2024	36	30	1.2	46.9
April 9, 2024	57	36	1.6	54.1
May 14, 2024	58	39	1.5	64.5
June 7, 2024	45	32	1.4	57.1

*Following the January 16, 2024 newsletter, newsletter publication was transitioned from bi-weekly to monthly.

CBE-OR also facilitates research presentations at the monthly All-College Meetings. In the 6 All-College meetings during FY24, 11 researchers and their projects/teams were highlighted.

- <u>Vince Wang</u> (Runstad Department of Real Estate)
- Fred Aguayo (Construction Management)
- Karen Chen (Urban Design and Planning)
- Helen Pineo (Urban Design and Planning)
- <u>Catherine De Almeida</u> (Landscape Architecture)
- Narjes Abbasabadi (Architecture)
- <u>Chris Lee</u> (Construction Management)
- <u>Gregg Colburn</u> and <u>Rebecca Walter</u> (Runstad Department of Real Estate)
- <u>Ann Huppert</u> (Architecture)
- Mona Ghandi (Architecture)

In addition to the monthly newsletter, and the All-College Meetings, the CBE Intranet is used for internal research communications.

The research intranet pages include a live list of upcoming funding opportunities for CBE researchers to consider pursuing. During FY23, this resource page received 282 views from 147 users with an average of 1 minute, 58 seconds per user. Views per user was approximately 1.92. In FY24, engagement increased with this page receiving 454 views from 286 users, with an average of 1 minute, 43 seconds per user. Views per user were approximately 1.59. This increase may be due to the increased monitoring of the page by a CBE Masters Student Dean's Office worker, however there are no metrics to assess who was accessing the page and for what resources specifically.

The Research Roadmap and Research FAQ pages are both designed to provide trainings and resources for CBE researchers during the whole grant process. The Research Roadmap page was viewed 120 times by 72 users with an average engagement time of 45 seconds. The Research FAQ page was viewed 68 times by 38 people, with an average engagement time of 1 minute and 4 seconds. In FY25, CBE-OR plans to work in partnership with the Grants Administrator to redesign both of these resource pages to improve their efficacy

for faculty searching for resources in the grant process. If this increase in engagement with those resources is successful, it would be reflected in the web page engagement metrics in the FY25 annual report.

2.I. External Communications

The Research Portal is the primary CBE-OR external communication platform. In FY24, 83 publications by CBE authors were added to the research portal, and 50 news stories were added to the research portal to highlight accomplishments and activities in CBE research. (This is an increase over 56 publications and 25 news stories in FY23.)

In FY24, a new project called the "publications project" aimed to automate more of the portal process regarding publications and research products. This project was done in partnership with Narjes Abbasabadi as part of the <u>LEADS program</u> through the CBE Dean's office, who explored the possibility of using tools such as Orcid-ID to automatically update research portal publication content. The feasibility study resulted in the desire for CBE-OR to further explore this mechanism for future implementation.

Looking forward to FY25, a goal for the Office of Research is to redesign how CBE research projects, and CBE Labs & Centers are featured on the Research Portal. This redesign aims to improve clarity of connections between different Labs & Centers, and keep projects that are represented current and accurate by connecting them with Labs & Centers.

Finally, the "college at a glance" one-page report continued and served as an external communication summary of the operations and outcomes from CBE-OR in FY24 (the FY23 one-page report was the inaugural one-page report).

2.m. Research Events

CBE-OR hosted specific events for research faculty development, especially focused on mentorship and shared learning in FY24.

ADR Dossick supported multiple interdisciplinary discussions with CBE researchers and guest speakers and partners. Guest speakers included <u>Steve Hammer</u>, <u>Megan Asaka</u>, <u>Yvette</u> <u>Pearson</u>, and <u>Esther Chitsinde</u>. Each guest speaker conversed with CBE faculty and staff on a range of subject matter areas.

On October 12th, CBE OR supported the Guest Lecture from Esther Chitsinde, who was an invited speaker at the PacTrans conference. On October 13th, CBE OR supported the PacTrans Conference on UW Campus; the College of Built Environments Technology Community of Practice served as a co-sponsor for this event with ADR Dossick supporting the event planning efforts. Multiple CBE researchers presented on panels at the conference, including Carrie Sturts Dossick, Laura Osburn, Narjes Abbasabadi, Chris Lee, and Lingzi Wu.

Steve Hammer from the New York Climate Exchange (NYCE) visited the University of Washington twice in FY24, having multiple conversations with the Climate Solutions Community of Practice and other CBE researchers. On January 18th, Steve Hammer hosted a listening session, shared priorities for the NYCE, and learned about CBE researchers' work. On April 30, 2024, Steve Hammer visited again, this time to discuss green building infrastructure and learn about CBE expertise in that field specifically.

Megan Asaka participated in two discussions; April 2nd she gave a talk open to the public on her recently published book "Seattle from the Margins." April 3rd, she participated in a lunch time seminar with CBE researchers and students discussing her research and book.

April 24th and 25th Yvette Pearson was on campus and spoke with graduate students, faculty, and staff about EDI principles in engineering, and her experience and work in education and in the field.

Research Leadership Meetings in 2023-2024 took place on October 16th and January 29th focused on how to support CBE researchers; what trainings, opportunities, and professional development support would benefit CBE researchers most. In FY24, CBE-OR met its goal of hosting meetings and trainings for researchers, highlighting specific resources available within CBE for both grants and contracts support as well as career development and mentorship opportunities.

The Data Science Curriculum workshops took place on February 5th and 12th to gather information about current data science coursework in CBE and beyond, and begin gathering data regarding how CBE can better support students in data science related to built environments in the future (See Appendix 2 for more information).

The Histories, Humanities, and Futures (HHF) Community of Practice hosted 2 additional events in FY24. On February 8th they hosted "Van-se-Vanvas: Exile from the Forest," with guest Ishan Khosla, Associate Professor, School of Design, UPES, Dehradun, India, and was focused on the impact of Indian art and animals. Additionally, HHF hosted a talk on March 4th in Gould Gallery, "The Life & Work of Benjamin F. McAdoo Jr." to share the works being presented in the Gallery, supported by Tyler Sprague's CBE Inspire Fund award.

The Inspire Award Lunch on May 7th brought together awardees from 2023 and 2024 to learn about each cohort's projects and research areas, and for the 2024 cohort to ask questions from the 2023 cohort. Reports from the 2023 cohort are available in the Internal Funding section of this report.

The <u>Climate Solutions Symposium in May 2024</u> was the first community of practice symposium event fully supported by CBE-OR. The hope is for future annual community of practice events at this larger scale, which included external partners, and facilitated collaboration between faculty and students. The symposium also included two guest speakers, Joan Crooks and Don Davies, presenting on their local adaptive reuse project.

3. Looking to Next Year 2024-2025

CBE-OR has multiple goals for FY25 including internal communications, research admin infrastructure, external communications, event support, and supporting labs and centers.

For internal communication, our goal includes an Intranet pages refresh, including updating the funding opportunities resources to include links to the searchable grant databases, and redesigning the Research Roadmap page to feature links to trainings and policies and procedures from the CBE Finance and Administration Office. This work will be done in partnership with the CBE Research Administrator.

Another goal for FY25 includes revisions to the research portal, including removing projects, linking active projects to Labs & Centers as applicable, and updating Labs & Centers content.

Event support will also be further developed in FY25, to create a process and procedure for groups to request support from CBE-OR staff to support events.

A final goal for FY25 includes strategizing and developing the support provided to Labs & Centers in CBE. This involves mapping out existing Labs & Centers, assessing what support they need, and developing processes for providing support.

Other goals include expanding the types of metrics and evaluations included in this report. This may include exploring new tools and especially EDI-focused methods for metrics and evaluation to expand our capabilities to assess and communicate the variety of research and impact. This could relate to teaching load and research funding from an equity lens and, measuring student and faculty service learning and civic engagement within the community. Another evaluation metrics would include fielding a survey from CBE PIs to explore what communities they partner with for their research, to help visualize how widely CBE project impact reaches. We welcome any ideas for the year ahead.

Appendix 1: FY23 and FY24 Comparison Metrics

Research Metrics		
Category	FY23*	FY24
Total Research Support	\$10,789,437	\$5,481,400
Grants & Contracts	\$8,893,570	\$4,076,305
UW Internal (Non-CBE)	\$244,833	\$408,415
CBE Internal	\$44,250	\$24,000
Gifts in support of research	\$929,236	\$573,126
Service Agreements	\$677,548	\$399,554
Grants & Contracts		-
ARCH - External G&C awards	\$7,091,397	\$589,000
ARCH - Internal UW awards/funds	\$17,500+	\$179,722
ARCH - CBE awards/endowed funds	\$14,250++	\$10,000
LARCH - External G&C awards	\$93,052	\$0
LARCH - Internal UW awards/funds	\$67,500+	\$120,000
LARCH - CBE awards/endowed funds	\$7,500+	\$5,500
UDP - External G&C awards	\$1,013,669	\$2,372,311
UDP - Internal UW awards/funds	\$67,500	\$0
UDP - CBE awards/endowed funds	\$7,500	\$3,500
RE - External G&C awards	\$596,169	\$504,994
RE - Internal UW awards/funds	\$5,000	\$39,693
RE - CBE awards/endowed funds	\$10,000	\$2,500
CM - External G&C awards	\$99,283	\$610,000
CM - Internal UW awards/funds	\$12,416	\$0
CM - CBE awards/endowed funds	\$5,000	\$2,500
PhD in the Built Environment Internal UW awards (Judy Bowes)	\$9,917	\$69,000
Number of Proposals/Awards		
OSP proposals submitted	32	48
Proposals submitted through CBE	9	35
Proposals submitted through CSDE	7	5
Proposals submitted through other departments	16	8
Awards received through CSDE		0

	17
11 (includes CLF)	2
2	0
8	9
4	2
2	4
· · · ·	
25	50
3	N/A
587 (portal build-out)	83
282	454
147	286
1m 58s	1m 43s
1.92	1.59
•	
3	13+
22	33.5
- - - -	2 8 4 2 2 3 587 (portal build-out) 282 147 1m 58s 1.92 3

Appendix 2: Data Science Curriculum Executive Summary

Memo: DATA SCIENCE CURRICULUM IN CBE

College of Built Environments faculty met on February 5th and February 12th for 2 hours total to discuss current gaps and future needs for **CBE Data Science Curriculum**, and next steps for moving this work forward. Attendees included Celina Balderas Guzmán, Vince Wang, Narjes Abbasabadi, Cynthia Chen (Civil & Environmental Engineering), Karen Chen, Tomás Mendez Echenagucia, Mo Taba (PhD student who has taught Data Science curriculum previously), Sofia Dermisi, Qing Shen, Carrie Sturts Dossick, Marina Alberti, and Sarah Randall (admin). Attendees who are currently teaching data science coursework were invited to share 1-3 slides about their classes and the curriculum included in them.

Shared concepts emerged from the discussion. Faculty agreed that there is not a desire to teach a general "introduction to python" class, because that is being taught elsewhere at UW; rather, focusing on built environment-specific applications and use-cases of data science

programs is a better focus for coursework in the College. Additionally, it is important to define who the audiences are for the certificates, programs, and individual courses. It was identified that Master's students are often more focused on workplace application of skills, whereas PhD students may focus more on research applications.

The next steps identified include collecting a list of all curricula related to data science currently taught in CBE. A draft of this list has been compiled during this data science review work, however it will need to be finalized and checked for completeness. Some additional information that may need to be collected from faculty teaching data science may include: data science skills (e.g., visualization, automation for large-scale computing, or database management), programming language and software (e.g., python, excel, R, ArcGIS, Google Earth Engine), Applications (e.g. social-ecological system, disaster management, building energy assessment), and generally what aspects a course focuses on (such as applied side or skill side). An option for a next step is to look at all of the existing coursework being taught, and explore how that coursework could be arranged into a certificate or other degree option that we have not yet explored with the existing curriculum content. Identify in those pathways what the gaps are that need to be addressed in order to complete the course pathway. Courses taught in CBE currently that include data science are: LARCH 440 Digital Media in Landscape; ARCH 380 Computers in Architecture; ARCH 498 Special Projects B Computational Design; ARCH 487 Fundamentals of Building Information Modeling; ARCH 524 Design Technology V; ARCH 527 Introduction to Digital Design And Fabrication; ARCH 528 Digital Design for Fabrication and Construction; ARCH 586 Computation and Design Technology Seminar; URBDP 404/504 Introduction to Geographic Information System; URBDP 422 Urban and Regional Geospatial Analysis; URBDP 573 Digital Design; RE 397 Introduction to Real Estate Data Modeling; RE 408 Financial Modeling in Real Estate I; RE 597 Data Modeling; CM 260 Digital Tools; CM 422 Computer Applications in Construction; CM 498 Special Topics Virtual Modeling for Digital Fabrication; (Future) Remote Sensing for Urban Health.

Further insight is needed to explore if "certificates" or "options" are better suited for the CBE curriculum. A potential pathway might be stackable certificates or options that would lead to a degree if specific groupings of certificates/options were completed. Faculty agreed that identifying 1 or possibly 2 specialized classes to start with would be a good first step, in order to effectively allocate resources and time to moving this project forward.

To support students seeking data science curriculum, it would be beneficial to maintain a list of currently offered courses. This list could be pulled from course offerings quarterly and maintained. This could also include recommendations for basic/introductory courses in CBE as well as in other departments.

References:

eScience Institute
Workshops and Certificates
Civil & Environmental Engineering Data Science Option
Data Science Continuing Education Certificate
Big Data Technologies Continuing Education Certificate
Machine Learning Continuing Education Certificate

Data Visualization with Tableau Continuing Education Certificate

<u>CBE Data Science Curriculum</u> - live sheet <u>CBE Faculty Discussion Notes</u>

Examples of Data Science at Other Universities (created by Mo Taba)

CBE Office of Research general notes