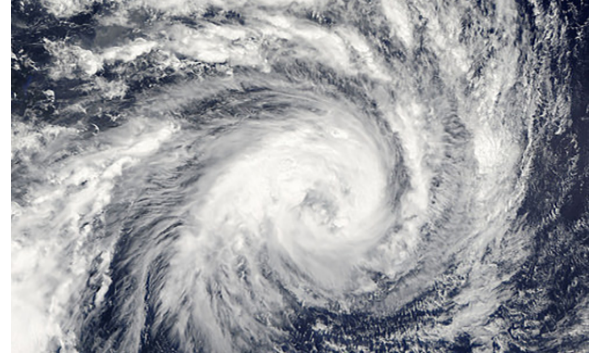


NECESSITATING CONVERGENCE:

Design/Ecology/Technology/Climate Change

Convergence can be characterized as the deep integration of knowledge, techniques, and expertise from multiple fields to form new and expanded frameworks for addressing scientific and societal challenges and opportunities. It is related to other concepts used to identify research that spans disciplines: transdisciplinary, interdisciplinary, and multidisciplinary. Convergence research is an intentional process. It is most closely linked to transdisciplinary research in its merging of distinct and diverse approaches into a unified whole to foster new paradigms or domains. (Dear Colleague Letter: Growing Convergence Research at The National Science Foundation/ NSF 17-065: April 3, 2017)



Only the faulty assumption that any change is unnatural makes us conclude that the greenhouse effect will be bad for the planet. Thus, the idea of “sustainability” and general homeostasis is a profoundly unnatural goal. The universe does not, except in certain temporary periods and places, sustain or maintain: it changes, improves, complexifies, sometimes destroys...it is a system to subvert and disrupt sustainability and maintainability. (Frederick Turner – “The Invented Landscape”)

In recent decades, a wealth of research has emerged underscoring the need for professions intervening in the built environment to define more broad ranging practices and research that potentially spans multiple disciplines to significantly ease stress on an overburdened environment systematically. To date, sustainable practices and theory relies heavily on an resource management focus instead of attempting to instigate overarching changes to how many professions and industries operate. This current “reactionary” situation: one long on short-term tactical efforts, but short on long-range systemic planning doesn’t sufficiently interrogate our current cultural values to the environment nor our communal (mis)understanding of climate change. It is only from a critical regarding our modes of operation and cultural value systems can the necessary transformation in practices and disciplinary values necessary to meet the challenges of climate change emerge.

To bring the transformation of practice at both the magnitude and pace necessary to offset/adapt to climate change, it will take more than just streamlining our traditional models of development, construction, and design. A profound shift in how we practice, live, and adapt to a rapidly urbanizing globe must emerge founded upon a more discipline-integrated referential frame. More specifically, the disciplines directly involved in the transformation of the built environment, must undertake a more critical and global “rethink” regarding the current state of practice and how relevant disciplines interact to address large scale environmental issues. The questioning of our societal value systems must occur in ways that foster a re-alignment of our conventional development and design practices. This seminar will explore how larger systemic reflection must play a central role in the development of a truly sustainable relationship to the environment. In addition, the role architects, landscape architects, and planners play in this redefinition will guide speculative discussions on the potential of emergent innovative practice mindsets and norms. Only then, can environmentally responsible design strategies integrating technology, ethics, and ecologies capable of successfully engaging the magnitude, fluidity, and complexity of the environmental issues facing the global community today be envisioned.

With websites such as architecture 2030 stating: “**The urban built environment is responsible for 75% of the annual global GHG emissions: buildings alone account for 39%. Eliminating these emissions is the key to addressing climate change and meeting Paris Climate Agreement targets**” — it is clear that the design and construction disciplines can have an outsized impact on implementing the adaptive measures necessary to offset climate change. However, this must be done from a “convergence” mindset that strategically engages other disciplines to produce a more integrative agenda for designers. In short, this seminar will investigate issues involving the foundations of our cultural outlook towards climate change, technology, and Nature to speculate upon how radical departures from our traditional practices might emerge – departures that are authentically transdisciplinary and truly transgress the boundaries of the conventional definition of a “project”. A positive consequence will be to expose designers, architects, and urban theorists to the broader philosophical issues involving climate change, the magnitude of its challenges, and the potential relevance of other disciplinary research agendas in addressing our necessary adaptation to its consequences. The emergent dialogues will be a means towards creating more broadly informed transdisciplinary design attitudes that redesign the “process” by pondering potential “team” structures more adept at integrating varied expertise to guide an entire “project” from initial concepts to determining the appropriate life cycle of the ensuing infrastructure.

COURSE SECTIONS AND TOPICS (2- 3 WEEKS PER SECTION):

01 Critical Thought/Climate Change: This section will move past the daily outrage and combative debates presented in the media to consider the complexity and magnitude of climate change. Readings will present its challenges within our rapidly globalizing world as a critique and a point of departure involving the importance of convergence research as an operative mindset, especially those individuals directly involved in the transfiguration of the built environment.

Guiding Questions/Readings: *What is the state of “sustainability” at present: should its focus discern more refined operational methods or influence the questioning of our societal values?/What is climate change and how are its challenges be more effectively defined?/How might a more “convergent” critical line of enquiry for design open up dialogues with other disciplines to systematically address these challenges?/How might these dialogues inform design agendas that directly support adaptation to climate change and rapid global urbanization?*

Born, D. "Remembering Nature In Climate Change" (RCC Perspectives, No. 4), in *Communicating The Climate: From Knowing Change To Changing Knowledge*. (2019), Pp. 79-86

Debal, D. "Development Against Freedom and Sustainability", *Capitalism, Nature, Socialism*; Sep 2006; 17, 3; Proquest Pp. 49-70.

Diamond, Jerrod. *National Geographic Documentary: "Collapse"* (based on the book/2010.)

Diamond, J. (2011) *Collapse: How Societies Choose To Fail Or Survive*, [Penguin Books](#).

Gambini, B. (2006) "Cultural Assumptions Against Sustainability: An International Survey", *Journal Of Geography In Higher Education*, 30:2, 263-279 DOI: 10.1080/03098260600717356.

Gertner, J. (2019) "Maybe We're Not Really Doomed After All: We Have The Brains To Slow Climate Change. Do We Have The Will?", *New York Times* June 7, 2019.

02 The Anthropocene & Adaptation to Climate Change: This section will consider the connective ramifications of the predominant issues contributing to the global crisis. It will commence with a critical investigation of the concept of the Anthropocene while considering the negative impacts of industrialization reached within its "frame". Issues and topics such as scarcity, consumption, consumer culture, rapid urbanization, global income disparity, and environmental degradation will be introduced to underscore the premise for the necessity of developing a larger frame of reference for design thinking.

Guiding Questions/Readings: *What is the Anthropocene and as a framing concept is it productive in addressing current challenges in climate change?/How can challenges such as globalization, rapid urbanization, and scarcity positively reframe the potential of sustainability?/How can a reassessment of our societal values in regards to the Human/Nature dynamic bring about necessary systemic change?*

Goodburn J. Till, J. Deljana & Lossifova, L./eds. (2012) *Scarcity: Architecture in an Age of Depleting Resources*, Wiley. ISBN: 978-1-119-97362-1.

James, P. (2005) "Arguing Globalizations: Propositions towards an Investigation of Global Formation" in *Globalizations*. September, Vol. 2, No. 2, pp. 193–209

Jickling, B. & Arjen E., Wals, J. (2008) "Globalization and environmental education: looking beyond sustainable development", In *Journal of Curriculum Studies*, 40:1, 1-21.

Latour, B. (2011) "Politics of Nature: East and West Perspectives", *Ethics & Global Politics*, 4:1, 71-80.

03 Human Action, Ethics, & Ecology: Many of the climate challenges faced today emerge from misguided perceptions of Humanity's relationship to "Nature". This section will consider the HUMAN/NATURE dichotomy and explore how this distinction undermines the potential of developing methods and practices that can more effectively lessen the collateral damage of climate change. It will also explore how environmentally integrative philosophies such as ecofeminism could serve as theoretical vehicles that reset our relationship with the natural environment.

Guiding Questions/Readings: *The Human/Nature relationship: a new balance?/Against Nature?/What is the role of ethics in understanding the environment?/Why should sustainability be considered an ethical design imperative, and not just a matter of resource management?//Towards a sustainable ethical stance towards Nature and the environment: how can eco-feminism and other "integrative" natural philosophies inform this conceptual move?*

Chaone M., (2018) "What's In A Name? In Defense Of Ecofeminism (Not Ecological Feminisms, Feminist Ecology, Or Gender And The Environment...)" in *Ethics and the Environment*, 10/2018, Volume 23, Issue 2.

Cronon, W. "The Trouble with Wilderness; or, Getting Back to the Wrong Nature" in *Uncommon Ground: Rethinking the Human Place in Nature*, Cronon, W. (ed), New York: W. W. Norton & Co., 1995.

Fox, W. (1995) *Toward a Transpersonal Ecology, Developing New Foundations for Environmentalism*, Suny Press.

Gertner, J. (2019). *The Ice At The End Of The World: An Epic Journey Into Greenland's Buried Past And Our Perilous Future* Random House, NY.

Hathaway, M. (2015). "The Practical Wisdom Of Permaculture: An Anthropoharmonic Phronesis For Moving Towards An Ecological Epoch" in *Environmental Ethics* 37(4), Winter.

Holland, J. (2014) "Complex Adaptive Systems", in *Complexity: A Very Short Introduction*, Oxford Press.

Morton, T. (2012) "Introduction" in *The Ecological Thought*. Harvard University Press,.

Russell, B. (1974) *The Art Of Philosophizing And Other Essays*, Littlefield, Adams, And Co. & (1995) *An Outline Of Philosophy* London/New York: Routledge.

LeCain, T. (2015) "Against the Anthropocene. A Neo-Materialist Perspective." In *International Journal for History, Culture and Modernity*, 3, no. 1): 1-18.

McNeill J. & Engelke, P. (2014). *The Great Acceleration An Environmental History Of The Anthropocene Since 1945*, Harvard University Press, Cambridge, Mass.

Mikhail, A. (2016) "Enlightenment Anthropocene", *Eighteenth-Century Studies*, vol. 49, no. 2 Pp. 211–31.

Parr, A. (2009), *Hijacking Sustainability*, [MIT Press](#).

Thompson, A. (2009) "Responsibility For The End Of Nature Or, How I Learned To Stop Worrying and Love Global Warming" in *Ethics & The Environment*, 14(1).

Gaard, G., (2015) "Ecofeminism and climate change" in *Women's Studies International Forum*, 03, Volume 49.

Graham H., (2018) *Object-Oriented Ontology: a New Theory of Everything*, Penguin Random House

Harmon, G. (2016). *Speculative Realism: An Introduction*, Polity Press, Medford Mass,

Kovel, J. (2003). "The Dialectic of Radical Ecologies" *Capitalism Nature Socialism*. 14. 75-87.

Morton, T. (2009) *Ecology Without Nature: Rethinking Environmental Aesthetics*, Harvard University Press, Cambridge.

Turner, T. (1994) "The Invented Landscape" in *Beyond Preservation: Restoring and Inventing Landscapes*. Baldwin, D., De Luce J, & Pletsch, C.(eds) University of Minnesota Press.

Morton, T. (2014) *Hyperobjects: Philosophy and Ecology after the end of the World*, Harvard University Press.

04 Nature, Technology, & The Environment: Like the HUMAN/NATURE conceptual dichotomy, technology must be re envisioned as a revelatory process, akin to the ancient Greek concept of *techne*. Only by interrogating technology, our dependence upon its manifestations, and its influence regarding our perception of the environment, can the paradigm shift necessary to address climate change systematically emerge.

Guiding Questions/Readings: *What is Technology?/How does it define our relationship to the natural environment?/What is techne?/How does the concept of techne differ from that of technology?/How can a more convergent understanding of the relationship between these two conceptual frameworks aid in reaching our goals for sustainability?/ Towards globally sustainable practices: how can we positively re envision our relationship to both technology and the environment?*

Gerrie, J. (2008) "Three Species of Technological Dependency" *Techné* 184-195 Fall

Hickman, J. (2003) "Revisiting Philosophical Tools for Technological Culture" in *Techné* 7:1 Fall / 64.

Hanks, C. (2009) *Technology and Values: Essential Readings*, (ed), Wiley.

Innis, E. (2003) "The Meanings of Technology" in *Techné* 7:1 Fall, 49.

Heidegger, M, (1969) *The Question Concerning Technology* Harper Torchlight.

Tabachnick, D. (2004) "Techne, Technology and Tragedy" in *Techné* 7:3/ Sp., 91.

Weiss, D (2008) "Human—Technology—World" in *Techné* 12:2 Spring.

05 Re Framing Climate Change & 21st Century Transdisciplinary Design Agency: This section will introduce the proposition that the answer to many of the challenges of climate change lies in reconceptualizing not only what we design, but how we design it to incorporate a more radically inclusive transdisciplinary structure. The magnitude of the climate change challenge demands a radical rethink of the entire design process convergently to include the methods and research of disciplines outside of design, engineering, urbanism, and landscape. It is necessary to redesign our "process" to be more transdisciplinary by incorporating research in science, art, architecture, politics, etc. Students will be presented with the conceptual challenge of how we must redefine our current cultural value system regarding the environment to transform our conception of "project" to better integrate our actions into the larger environmental context.

Guiding Questions/Readings:: *What is "trans-disciplinarity and convergent thinking?/How can they be instrumental in redefining the Nature, Human, & Technology relationship underlying our adaptation to climate change?/How can the conceptual construct of "design project" be transformed to create a more integrative global perspective for the design disciplines through a "convergence" agenda?*

Brown, V. (2010) *Tackling Wicked Problems Through Transdisciplinary Design*, Brown, V., Harris, J. & Russell, eds. Earthscan.

Madni, Azad. (2018) *Transdisciplinary Systems Engineering: Exploiting Convergence in a Hyper-connected World*. Springer International Publishing: Imprint: Springer

Christakis, Nicholas A., author. *Blueprint: the evolutionary origins of a good society* New York, NY : Little, Brown Spark, [2019]

Stah, C. (2014) "Out of the Land of Oz: the importance of tackling wicked environmental problems without taming them" in *Environmental System Decisions* 34:473–477.

Corballis, T. (2019). "Populating the Climate" in *Environmental Philosophy* 16 (2): 275-289.

Taylor, M. (2003) *The Moment of Complexity: Emerging Network Cultures*. Chicago: University of Chicago Press.

Jenkins, Henry (2014) "Rethinking 'Rethinking Convergence/Culture" in *CulturalStudies*, 28:2, 267-297

Till, J. (2009) *Architecture Depends*, MIT Press.

[Disruption/Evolution/Change AIA's Vision for the Future of Design and Construction](#)

DEVELOPMENT PLAN:

Spring semester 2021: 1) Further research and refinement of preliminary reading list/other educational materials. 2) Creation of a more detailed course schedule and section descriptions/Attend ACSA special topics session on Climate Change (incorporate new ideas accordingly)/Develop assessment rubrics and refine semester student research project criteria and assessment/Develop weekly student philosophical "questioning and application" exercises involving presentation material as an assessment format & feedback system/Develop recruitment plan for students outside of the College of architecture and planning to participate in course. **Summer 2021:** Develop five (5) introductory section/topic presentations (45 minutes each) providing appropriate context for the educational material in each section. The goal will be to set up a more direct connection between the course material and the challenges faced by the design disciplines involved in the development of the built environment involving climate change. **Fall 2021 & 2022:** Initial and subsequent offerings of course to graduate students with revisions and updates based upon student feedback, etc.

Semester Research Project: The semester research project will encourage students to more directly assess the direct applicability of their disciplinary skills within a convergent research team structure involving topics raised in course discussions, readings, and videos. In this speculative exercise, students will research projects, disciplines, and expertise traditionally considered outside the conventional boundaries of architecture and design. Upon development of this frame of reference, students will research and critically analyze an actual "Project" that utilized a similar "team" structure and research agenda. This project will include graphic, written, and verbal presentation components. Course will be cross-listed between colleges and research/presentations will be undertaken by interdisciplinary student teams from varying disciplines.