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**ART-AT-WORK: CREATIVITY AND SOCIAL PRACTICE AS
COLLABORATIVE, INTERDISCIPLINARY RESEARCH**

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A DISSERTATION

Submitted in Partial Fulfillment of the
Requirements for the Degree of
Doctor of Philosophy
(in Interdisciplinary Studies)

The Graduate School

The University of Maine

May 2023

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By Anna Martin

Dissertation Advisor: Dr. Susan Smith

An Abstract of the Dissertation Presented
in Partial Fulfillment of the Requirements for the
Degree of Doctor of Philosophy
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May 2023

Art-At-Work describes the tools, vocabularies, strategies and experiences that render the emergent spaces of collaborative interdisciplinary research. This body of work generates a story board for the unfolding narrative of a *studio-laboratory* practice where artists research with scientists and scientists create with artists. The long-term goals and short-term deliverables of this research focus attention toward the process of building connection, tools and space for future work that creates channels for collaboration among disciplines. With each conversation, concept map, prototype, reflection and iteration, creatives and researchers are exploring the spaces among fields of practice by generating ways of sharing experiences that enrich our academic community and establish connections for future inquiry.

Creativity and social practice inform the ways that art has engaged with science throughout this work and as this practice among fields continues to evolve, they will remain critical elements of future collaborations, research and development. The scope of the presented research is immersed in the growing dialogue between art and science and is undertaken with the intention of building capacity for practitioners to generate inter-inquiry agency and investigate the possibilities of working across studios, laboratories and knowledges. Activating different configurations of qualitative insight highlight the role that art can have

in the development of transdisciplinary language and methodologies as well as the potential to consider outcomes that are informed by these processes. The findings of this research outline the critical role that time, space and support play in establishing ground for creatives and researchers to engage in the work that builds this new environment. While the disciplines discussed in this research include art and science, collaborative interdisciplinary research is not limited to these domains. Inquiry, creativity and iteration are connective elements among many disciplines and this research will ask readers to consider how innovative we dare to be through growing interdisciplinary collaborative activity by accepting the invitation to practice art at work.

DEDICATION

B. F. & M.
You are my greatest adventure.

ACKNOWLEDGEMENTS

My Committee

Thank you for your practice, your support and for every opportunity.

Intermedia

Thank you for each and every time that you show up for this work.

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CHAPTER 1

INTRODCUCTION

“Arts-based researchers are not ‘discovering’ new research tools, they are carving them.” (Leavy, 2015)

1.1. Creating New Terms

The critical role that art is capable of activating within interdisciplinary research and collaborative practices, defines the statement “art-at-work”. The channels of discourse and reflection that develop when supported by a continuous expansion of understanding how we learn, why we cultivate community, and where art acts as a current that carries us forward, pushes us to deepen our practice of imagination as researchers and creatives and actuate its configurations as an essential method present across disciplines.

Art as interdisciplinary social praxis creates opportunities for new ways of engaging, learning and envisioning. When applied as a comprehensive model of engagement among different contexts and audiences, this opens the process of critique and peer review to the world. Broadening the spectrum of how the work is experienced and incorporated into the creative process, pushes contemporary sites of engagement and their work forward.

The arts are uniquely positioned as ground with the capacity for building and integrating many knowledges. Artist, professor and former Senior Editor of *Studies in Art Education Research* Graeme Sullivan states, “the arts provide a special way of coming to represent and understand what we know” (Sullivan, 2010). As knowledge takes many forms, we apply it in infinite ways as a practice of navigating our world. A key element of how art extends space for this explorative practice, is through the intrepid use of imagination and curiosity that is often activated in proximity to convention. This occurs through dialogue, actions, materials research, theory and praxis. The past several decades have seen art and its applications unfold in many ways as artists seek to integrate their work into realms beyond

the studio and out into open air. This evolution of creative practice brings with it ideas of how art may function as an active element in awareness of climate, social justice, inclusion, connection, discourse and in some cases even provide traction for change to occur. Artists are identifying ways that process, practice and methodology can continue to reach outward, generating creative agency across disciplines that contributes to research and collaboration in interdisciplinary contexts. It is through proximity and acknowledgement that creative practice may be carried out as inter-inquiry, arts-based research and social practice. When accepted into the historically understood world of research, this provides a foundation for expanding collaborative possibilities through creative connections.

In developing the program of study for this dissertation, the work was initially mapped out in the general areas that I believed to be most relevant amidst a complex time in the world. As is often true with many journeys, it changed as did I, based upon time and new understandings that were acquired over the course of my study. An important and identifying feature of any "interdisciplinary" degree program, was actively practicing an iteration of grounded theory, from the understanding that my work was emerging as my practice and research situated itself among a scholarly ecosystem. Authors Morse, et. al offer a description of grounded theory that served as a compass in the early stages of this adventure when I was learning that this theory is activated for the purpose of seeing the process as "a constellation of methods" (Morse, et. al. 2009) rather than an approach with a singular point of view.

I had proposed this program of study as a process of identifying new ways of learning, teaching and engaging; in support of Kaufman and Sternberg's observation presented in the *Cambridge Handbook of Creativity* that "creativity and education are natural allies". (Kaufman & Sternberg, 2010) However, at the time, I did not have the proximity nor the experience to describe what those possible methods could be. It was through actively

participating in and among work developing across our contemporary landscape that brought these strategies to the surface.

Time, is the greatest determining factor in how we root in, become familiar and meaningfully engage in order to create impact. Artist Jeanne van Heeswijk is spot on in sharing when artists “want to contribute to changes in social structures, you need time”. (Heeswijk quoted by Thompson, 2012) Through the unfolding of time invested in the locality of the work, happenings occur that begin to form the terrain that the artist navigates. Eventually, a pattern arises that brings the artist to a new and open space within the world they are working through. These are points, essential to the as artist’s ability to identify when and where their work begins to come to life. Often, it seems that these points begin to pop up on the map when we encounter obstacles. Author and sociologist Patricia Leavy keenly notes that, “New pathways don’t just form, we have to create them”. (Leavy, 2015) This is never easy, and it requires persistence in order to reach our goals, while also maintaining a willingness to acknowledge when not only the aim of the work evolves, but when we ourselves are changed throughout the process.

The exercise of “creating new pathways” that Leavy (2015) described in these new settings, requires a shift in language from the artist’s work to the artist *at work*, reflecting the intention of multiplicity and continued inquiry that drives conversation forward. This highlights the act of *praxis* as being the artists’ work not any singular piece. In a way, this rebrands the common perception of the role of artists. A powerful quote from artist Jeremy Deller captures this transformation that occurs when the artist at work is found out in the world: “I went from being an artist who makes things, to being an artist who makes things happen”. (Deller as quoted by Thompson, 2012) Taking that leap from making artworks to putting art to work as community-based creativity can be thrilling and daunting as we as artists share ground. Restructuring the traditionally informed role of the artist as the only creative producer in a work, towards the artist and audience collaborating changes the very

ground upon which we define a practice. This restructuring occurs in order to produce the type of work that Leavy outlines as a product of “co-investigators and co-authors”. (Leavy, 2014) Artist Olafur Eliasson contributes a critical statement in putting art to work in the experience of the audience by describing “the idea of empowering the spectator”. (Eliasson, 2019) Designing works that acknowledge the experience and context of the audience, brings voice to their co-authorship and creates more expansive opportunities for work to extend further out into life and resurface in new and different ways. Embracing the unpredictable and reaching beyond the edge of expectations for the arts, spark ideas that change us over the course of our lives, affording us opportunities to explore what may be possible when these strategies are utilized in concert with systems for how we engage with the world.

The contemporary opportunities and challenges that we face require a continued, robust effort to learn beyond our disciplines, build strategies and put into action the elements of our practices, to adapt and respond to the needs and hopes of our futures. When we are able to work beyond the silos of our practices, we establish a respect for differences and relationships that reflect our global ecosystem. Transdisciplinary collaboration is a step towards integrating the multiplicity we live into the ways that we develop processes, review our findings and render outcomes. Jacqueline Baas, former Director of the Berkeley Art Museum, highlights the importance of this idea with the question “are we open to generating light or only heat”. (Baas, as edited by Jacobs, 1998) This is our reality, not a lofty ambition. Interdisciplinary research and creative activity are capable of producing sparks that can be used to make these spaces traversable.

CHAPTER 2

CREATIVITY

2.1. Why is it Important?

Art as a navigation tool presents ways to embolden collaborations where the “artist” whose practice is intrinsically tied to research, contributes to the interdisciplinary discourse that activate and designate space where it may not otherwise be considered. Artists bring additional layers of expression and lenses with which to see, experience, and engage with the research. Arts professor and author, Linda Weintrub explained “artists heal, sell, teach, build, cook, dance, document, perform, recite, preach, and more.” (Weintraub, 2003) Twenty years later, artists continue to expand these ways to engage with the field and the definitions that render artists and their contemporary landscape. It is through these methods that we are able to chart out the ways that artistic research is defined and practiced. The active role that artists have historically played in understanding the complexities of life on earth is often paired with knowledge in other fields such as science, human development, education and anthropology. Art as research is a field with great depth, yet the ways in which we have historically talked about this leave room for improvement. Artists do indeed make art, yet we also reflect upon the process, iterate, engage in peer-review and experience the emergence of new understandings that reflect similar process in our neighboring fields. In *The Routledge Companion to Research in the Arts*, Borgdorff explains that artistic research “unites the artistic and the academic in an enterprise that impacts both domains”. (Borgdorff, as edited by Biggs & Karlsson, 2011) Art as research applies to materials and process, the transformation of relationship between artist and audience, and the intricate bonds between disciplines that put the creative process to test in order to yield real time results.

The “more” of Weintrub’s statement, implies infinite possibilities and is rhizomatic to artistic purpose. How can art delineate space that sustains the process of elemental identification and construction of expansive modalities that continue to shape how we are in sustained dialogue with adaptation and change? As Sullivan recognizes, “what artists do is mostly misunderstood” (Sullivan, 2010). This becomes especially daunting when attributing the historically traditional research methodology and indeed “Research”. Acknowledging the challenge of unpacking artistic practice, how it works, and where it contributes to ways of learning; is a place to start.

Arts subjectivity and ubiquity are a strength as well as a challenge. In learning to identify where this overlap is a strength and where to facilitate critical discussion of how it may conflict with a concept may be an entry point for arts-based researchers. Creativity and imagination as learned skills, have been put to use throughout human history in our continued process of understanding the world. Yet, we need to unpack how we nurture, drive, consider, retract from, and learn to accept where culture will and won’t integrate ‘creativity’ as a means. Applied creativity can act as a catalyst for inquiry and innovative strategy if we are not afraid to take the risk, and at the same time recognize the locations, structure and rules for play that weave back into this process. How productive and wildly innovative do we dare to be by inviting art into the historically traditional research experience and embracing creativity to act as a catalyst for greater inquiry into the important works that will propel and define our futures? Our answers reside in emergent practices that are forming in our academic and creative communities around these discussions as they are contributing to the map that we may put to use in order to explore these possibilities.

2.2. How is it Important?

Art's role throughout this research endeavor has functioned as a critical dimension of situating a creative practice of expert-learner inquiry within the ecosystem of scholarly connection. Seeking opportunities to become acquainted with new vocabularies, skills, methods, and the ability to activate these items in order to generate new and richly informed work, is a critical take-away from interdisciplinary research and collaboration. Art in this instance, continues to engage in building community as concentric circles of practice beginning among artists and expanding out into surrounding disciplines. Identifying a collaborative cohort within the arts, extending to the sciences and then out into a public sphere, situates this particular work in the realm of contemporary community-based practice and socially engaged art, which Nato Thompson, *former Chief Curator of Creative Time* describes, "reflects an interest in producing effects and affects in the world." (Thompson, 2012) Unpacking these terms in context of creativity and social engagement, artists are utilizing different ways to build change in micro settings that we may then track over time and how these events lead to the macro view of what work is able to achieve. Artist, designer and architect Fritz Haig situates an ongoing project: *Edible Estates* in a similar context. This work involves establishing "prototype gardens" (Brown, 2014) in communities to promote opportunities to engage in sustainable food production and consider the spaces that this work can occur. Establishing the first garden in Kansas in 2005 this project has grown and extended to include gardens in many sites across the globe. (Brown, 2014) This work requires time, investment in local communities, establishing connections and sharing knowledge across disciplines that contribute to the construction and stewardship of a series of living works. Artist, writer and editor, Stephen Durland brings this conversation closer to the subject by mapping the possibilities of what can be "when people become actively involved in the creation of their own culture" (Durland, as edited by Jacobs, 1998) as a result of community-based practice. In looking at the ventures that art has taken in order to generate activity that can be informed by and shared among diverse

entities, it is essential not to dismiss contemporary arts practice from the table when we are mapping ways to integrate knowledge and experience into our systems of research and education. In fact, it is critical to keep asking questions of creativity for how we may communicate more effectively across the table and the resulting space that is created in between.

There is a unique dimensionality built from integrating arts methods into historically traditional research; not to replace the thinking and processes of our neighboring fields, but to enrich our engagement and reflective practices. This, ultimately strengthens the connective complexities of who we are in relation to what we do. When creativity is a condition of working, and relational stratagem a shared vocabulary, the effort of building connections is celebrated and utilized as methodological form. Through this work, we establish the conditions for exchange and dialogue. The resulting connections and knowledge build over time and are greater than the sum of any one work. These connections strive to create paths forward toward an expanding landscape built from the questions we generate and perspectives we consider when exploring answers. Here, we are able to recognize art's role in research as a living definition. One that continues to evolve and inform the ways in which we find entry points to complex problem solving in order to deepen our understanding.

2.3. Why Now?

Charting ventures that encourage researchers to move beyond the boundaries of their own fields in order to truly collaborate and subsequently, innovate is a well-practiced strategy. However, this is very difficult work! It requires much of its participants in order to be carried out effectively. From patience, generosity and flexibility to perseverance and communication, this work requires us to practice what is often much more difficult than it may be to describe. In real time, we are faced with different roles that we assume in order to contribute to collectively generated works. We have the need to design workflow that

enables the progression of work, bringing ideas to the ground and activating them. The differences that we may encounter in our approaches are real and can bring work to a stand-still if we are not mindful of how these roles create hierarchies and what collaborators need in order to move hurdles out of the way. If artists and scientists are to work together in the lab, the field or the studio, a shared culture of inquiry and inclusive vocabularies needs to exist. This means we have to work together in order to build them, as jargon is often a factor in feeling as if one might not belong in the spaces that it is used. This requires an integrated interdisciplinary environment where the participating researchers are also willing to learn and teach in order to expand the boundaries of the collaboration.

Collaboration is a complex word as it may bring many ideas to mind for how it works. In our lives, we experience countless situations that require teamwork and cooperation. At times we choose when and how to engage these skills and other times, it may be required of us in educational and professional settings. There are often mixed reviews for this type of work, in a brief and light-hearted description there are two familiar types of reactions to this announcement: A. "*Great!*" and B. "*Arrgggh!*"

The difficulty of teamwork enters the picture when active listening and compromise are put in play over long periods of time. When teams can traverse this ground, collaboration begins. Ross Cooper and Erin Murphy, authors and leaders in project-based learning, present an important distinction in genuine collaborative practice stating "the collective progress of the group improves the overall body of work." (Cooper & Murphy, 2021) In seeking to unpack the *hows* of collaborative practice, we stand a good chance to improve the outcomes, which brings us back to why it is important to the idea of interdisciplinary research as a whole. Artist and author, Pablo Helguera provides a critical contemporary definition of "Social Practice" (Helguera, 2011) that emphasizes an awareness of the historically understood role of the artist and recontextualizes "the artists into an individual whose specialty included working with society in a professional capacity". (Helguera, 2011)

If we look to this definition and see how the role of the artist may shift to better render their contemporary role, how else may we consider shifting the definition of the “historically understood researcher” in a similar way? In doing so, we may disrupt a settled understanding of what interdisciplinary inquiry has been, and what it can potentially become through recalibration and redefinition of where disciplines currently stand and the relationships that we can establish through the process.

Evolving to recognize how these relationships change based upon what disciplines need from each other in order to genuinely create new opportunities requires some humility. Entering the space with the intention of setting aside the notion of one body of knowledge outweighing another is critical for the growth of the interdisciplinary field. Yes, expertise exists, and yes, we put it to use in specific ways that advance our fields however, collaborative potential is fully reliant upon the ability to use expertise as a way to move forward rather than used as a way to “place an order”. The *why* of this work brings intention to remain open to new processes, expanding the definition of the ground upon which new endeavors are established. Patricia Leavy argues that activating art in context of research, “generates unique ways of understanding and representing experiences.” (Leavy, 2015) These contributions may open discussion for *how* we may expand methods of understanding, listening and representing our greater human experience which, is intrinsic to research itself.

Engaging with the current calls for practice, question formulation, dialogue, reflections and perseverance. It also requires a commitment to the continued process of learning and establishing checkpoints that enable us to pause and look up and out of our practices in order to make space for this to happen. George Couros, *educator and leader in the realm of innovative teaching and learning*, speaks of innovation and education, identifying moments where “(a gap) existed between what we were doing and what we needed to do.” (Couros, 2015) This statement captures the monumental shift that occurred during the pandemic

causing a re-imagining and emboldened invitation for *outside-of-the-box* thinking required in order to move forward and re-establish pieces of what are vital to our human experience.

Critical elements of this shift took place in the fields of education and health care. Strategies developed that put creativity to great use and reconfigured support systems during the lock-down stages of the COVID-19 Pandemic. The impact of this transition prompted large scale considerations of how to sustain engagement through the new conditions that defined our space and practices. Providing numbers that bring gravity to our recollection of this recent situation, “more than one billion students” (Tortella, et al. 2021) were impacted during this time. Changing from in person schooling to remote learning, students and teachers experienced a radical upheaval of resources, context, scheduling, accessibility, consistency and familiarity.

At the scale of ubiquity, this experience transformed the way we think about, plan for and now practice learning. A staggering percentage of the global population was forced to reconfigure their understanding, relationship with, and practice of engaging with learning over what was first weeks, then months, and eventually years. In a contemporary publication: *The Shock of the New*, Rachel Payne describes this upheaval through the lens of education in the arts stating: “Lockdown was changing students’ art practices. Just like me, they adapted art production according to their contexts”. (Payne, 2020) This description, connects experiences across many contexts over the past three years. It is from this place of recognition that hopefully, we have learned the valuable lesson that we (as humans) do in fact need community, creativity and connection.

We learned, in this time that not only is creativity for everyone, but that it is also an important way that we as humans connect to one another, to ourselves and to the world around us. Composer Anthony Brant and neuroscientist David Eagleman speak of the social

as a through line in creativity stating “Creativity is an inherently social act”. (Brandt & Eagleman, 2017) The recent surge of *getting creative* reframed views of what we considered to be ordinary countless times. We were able to traverse the sea of what qualifies as creative behavior from Zoom outfits, to choreographed social media, to the ends that educators went to in order to remain constant in a time of radical uncertainty and change. In these moments, creativity re-introduced itself as a common domain in our lives. This plunge into uncertainty brought with it first, a scramble to find ways to connect with each other and then, with ourselves as the time we spent experiencing physical separation expanded. Globally, we witnessed a bloom in the types of creative approaches deployed by education, medical practice and social work in order to bring expressive and grounding exercises to people in order to reconfigure and sustain rhythms that we can rely upon.

Adapting to this new landscape, we learned to move with this change and chart new directions with what was available. We experienced the dichotomy of shifting rapidly and remaining at standstill for a duration of time. Psychologist John Welwood offers a reflection that bears significance then and now as we continue to move forward: “Because our feet are rooted to the ground, there is no other choice than to be right here, right where we are”. (Welwood, 2002) Out of necessity, this changed the way we engaged with the world around us and “change”, as authors Thomas and Brown explain, “forces us to learn differently”. (Thomas & Brown, 2011) Through this change, burst countless new initiatives, methods of engagement, questions and the ways in which we choose to invite answers. All of the ways that we have adapted and innovated have come from bearing the reality of new rules for what we had come to understand as the way things were. Today, we can expect a hybrid format for attending events and classroom learning. We, have learned to utilize pieces of our time in fab-labs to create hacks that allow us to engage differently with our surroundings and interests. Moving forward with the knowledge we have gained from this experience, we are much more informed as to what actually goes into creativity and may be

able to identify the complexities and “hard work” (Sawyer, 2006) required to activate it. Though, we cannot afford to stop here, we also need to find ways to sustain it. All of the take-aways we have gathered in the past several years should not go to waste. It has opened new doors and we have realized the critical tie to “creative things” such as books, songs, paintings, performance, gardening and sharing that helped form our relationships with each other and with the world. We have been reminded that creativity does indeed exist in our everyday and is essential.

CHAPTER 3

CONTEMPORARY SITES

3.1. Introduction

An essential component of interdisciplinary practice is enriching our understanding of how to construct adaptable pathways among silos of practice. Complex problem solving occurs in all disciplines in a spectacular array of methods. It is worth exploring what may come from combining our efforts to address the topics that impact our shared fields.

Two dimensions of practice frequently discussed in this writing are *art* and *science* as their historical grounds are intrinsically woven into our human understandings of the world. Author, artist and professor Stephen Wilson presents a pivotal statement explaining that often, these two entities are “thought of as being as different as day and night”. (Wilson, 2010) This overlooks the many ways in which creativity is deployed in these as well as in other fields. Authors Nichols and Stephens offer insight that sits in contrast to this by bringing our attention to their similarities in stating “at the heart of both processes is inquiry”. (Nichols & Stephens, 2013) The potential points at which they may converge, present transformative opportunities *if* we are willing to try. In order to identify these points, we need to look at the ways that different fields engage with the process of thinking through material manipulation, iterative process, “what if” scenarios and the widespread use of humor to prompt a different way of seeing a problem. This, in addition to the conditions of working that we may share, can help us gather what we already know into a common pool to build out from. Additionally, we may look to the ways that art and science visualize data in order to better articulate our ideas and perform the results of our findings through exhibition and forum. Though the scope of this research addresses the junctures at which artists and researchers are finding ways to explore opportunities in order to build new work that is informed by a multiplicity of knowledge in the academic and the greater community setting, we may reference the emergence of STEAM curriculum in earlier learning as it

reflects a contemporary practice of collaboration and hybridity. Merrie Koester, a contributing practitioner and author of STEAM education and research addresses one of these commonalities, “mess is as much a part of the nature of art practice as it is of science”. (Koester, 2017) Simple as this may read on paper, it is a significant overlap in practice and as Koester further explains, “insights evolve as mistakes get made”. (Koester, 2017) The rules for how we make the mess and work through it may differ, though oftentimes not by impassable terms. Nichols and Stephens are able to add to this effort of bringing the focus of art and science towards their common ground by describing “both the scientific method and creative process are cyclical and similar to each other”. (Nichols & Stephens, 2013) There are so many places to begin from where we can identify shared interests for future inquiry however, it is important to recognize that this work takes time and significant effort. It is critical to seek opportunities to talk about the work that we do in settings where we are required to move beyond jargon by learning more about our collaborators and audiences. In stepping outside of our lane, we are faced with the reality of distilling our work down to a number of take-aways that not only paint a picture, but also serve as building blocks. Throughout the process of sharing our work, explaining what it is and how it works in different contexts, we change our relationship with it. Possibly, learning more about it each time we present.

Returning to our practices after engaging in work with our neighboring fields is where we may begin to navigate our domains in surprising new ways and potentially cultivate novel methodologies. We may also find through the continued development of our own experiential learning as researchers, that we can bring greater intention to the cultivation of inclusive qualities that help bring our work farther out into the world. In the collaboratively written book, *The Third Teacher: 79 Ways You Can Use Design to Transform Teaching & Learning*, the following statement echoes a call for what may be found in and among the spaces created through the practice of simultaneously being an expert as well as a learner;

“give students places for cross-disciplinary work, and who knows what creative genius will flourish”. (OPW, et al. 2010) Re-imagining engagement with our own ways of learning, knowledge and their value, may impact our abilities to plan for structures that are intrinsically woven into the dynamic symbiosis of human experience and our surrounding world. Yet, we cannot know what these processes may yield unless we are willing to jump in and do the work.

It is a privilege to find common ground with colleagues in your own field that contribute to collaborative practice. This is a unique environment where we are afforded an opportunity that professor and author of creativity and education, Vera John-Steiner, describes as the ability “to speak at the speed of thinking”. (Steiner, 2000) What this can mean in the world of collaborative practice is the rapid generation of ideas that provide options at the beginning of creative work. Developing a sense of community among a creative team is critical to the overall process of generating new work. This may take place organically over a sustained period of time or it may need to be established quickly in order to produce work that lives on a timeline. From here, we establish respect for what everyone is able to bring to the table and recognize how important it is show up for the work, show up for the practice, and to show up for everyone involved. This however, does not mean that it will always be easy. In fact, it often means that you are brave enough to apologize, strong enough to ask for help, and willing to move forward without getting caught up in the roots throughout the trail.

Collaborative work within one’s own discipline can be complex, at times maybe even more so than entering the field between fields. This may be a result of everyone’s proximity to the subject and methods or familiarity with one another’s practice and way of communicating. However, when this genre of collaborative work is able to shine bright enough to gain recognition and progress forward, we find ourselves in the position of being

able to ask new questions of our teams. New questions that push our work into different spaces where we can reflect upon and respond to feedback from another perspective.

Moving into the sphere of interdisciplinary research, there are critical questions that we as artists must ask on behalf of art when working with expertise and teams from surrounding fields in the process of building a new and larger collaborative cohort. As these opportunities unfold and we work to establish vocabularies specific to this new environment, there are items that need to be addressed in this process in order for there to be productive conversations. This includes not overlooking items that may seem obvious in nature including but not limited to establishing how the cohort will gather, assumptions about common knowledge, context and opportunities relative to the collaborators' fields and, the established team dynamics of discipline specific cohorts that inform the larger collaborative project. By not taking the time to thoughtfully consider all of the factors that go into building an interdisciplinary team at the beginning, we may potentially cause more work than necessary. Patricia Leavy expands on this with thoughts about what is visible and yet often difficult to articulate stating "Arts-based researchers see and build in different shapes." (Leavy, 2015) and these shapes will be important to identify as we grow within and alongside our respective fields. As we are engaged in the work unfolding, we are in a sense placing new tools on the table for the next round of collaborators to work with. Each time we are able to identify a working condition of this space, we need to incorporate it into the introduction of what we are working towards.

Questions for Artists working in the field of Interdisciplinary Research:

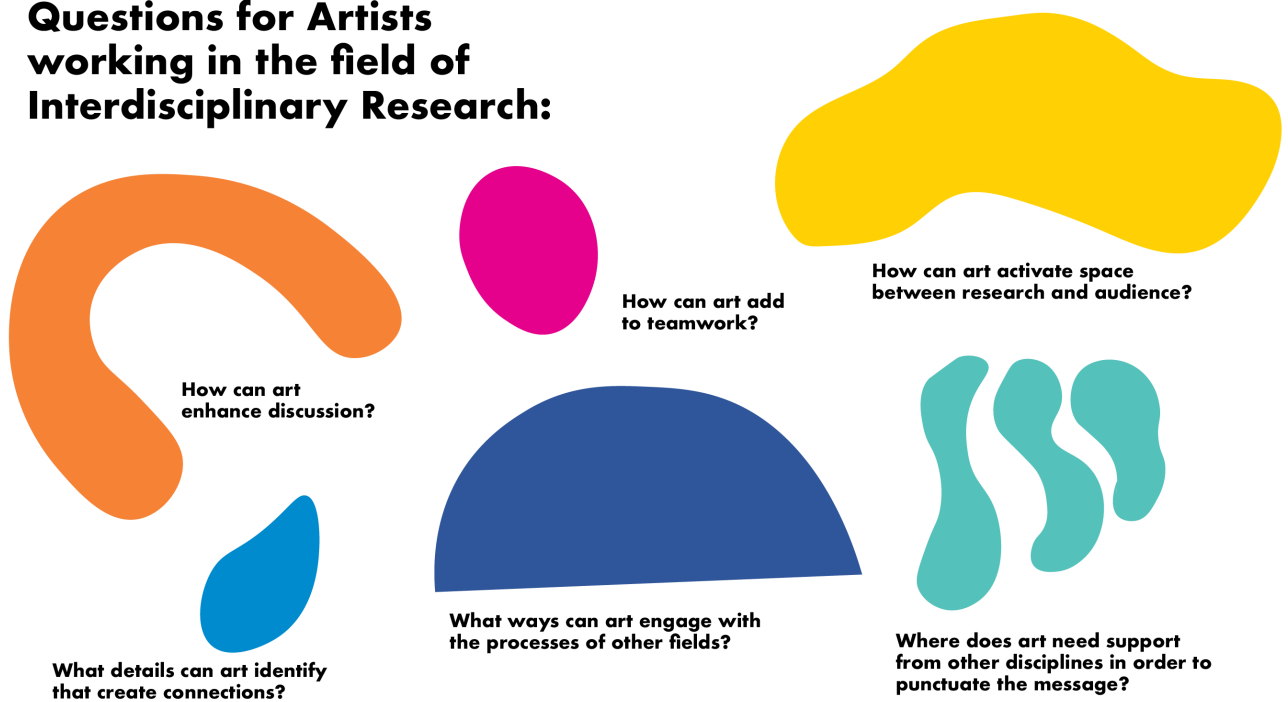


Figure 1. Critical Questions for Art & Interdisciplinary Research.

Description: *By asking questions through art, we are able to generate compositional sketches of how interdisciplinary work may begin to take shape.*

From these questions, we may begin to identify the physical and conceptual spaces that art and creative practice may integrate its expertise and bring items to the interdisciplinary table to experience and discuss options as new teams.

3.2. Contemporary Sites of Engagement

A collection of five contemporary sites of engagement are included in response to these questions and situate the interdisciplinarity of art and collaborative practice among the critical junctures of our place and time. These sites activate ways of engaging that contextualize the importance of sharing knowledge among our respective fields as well as highlight the potential to “create innovative learning opportunities” (Couros, 2015) by seeking ways to experience our work from new perspectives over time.

3.2.1. Creativity vs. COVID: Ending the Pandemic for Good, 2020

A Collaboration with the Center for Artistic Activism and Universities for Allied Medicine.

In the fall of 2020, we were collectively beginning to step closer towards proficiency with remote living, connection, and learning throughout a pandemic. During this time, vaccination accessibility for COVID-19 was unclear and the products themselves were in the process of being developed and globally distributed. Our daily lives were filled with updated social distancing policies, pandemic related statistics and safety protocols over weeks, months and eventually, years.

In this time, The Center for Artistic Activism and Universities Allied for Essential Medicine began conversations which turned into collaborations for creative activism promoting equitable access to vaccinations for COVID-19 across the globe. This “international collective of university students, artists and access to medicine advocates” (UMaine News, 2021) created an online exhibit featuring parody music videos, games, conceptual and designer masks, posters, stickers, and a movement of masked statues among the many contributing works. In February of 2021, the premier of an in-person exhibition of this work was installed at the University of Maine, Innovative Media Research and Commercialization Center (IMRC) by the department of Intermedia. The exhibition featured a panel talk with members of the *Creativity Vs. COVID* team from a variety of disciplines where they led conversations about engagement, collaboration and art as strategy. This panel talk provided a space where artists, scientists, activists, students, medical professionals, and educators all sharing the experience of living, working, learning, and making over the timeline of the COVID-19 pandemic, to discuss the role of collaborative practice, and the real impact of “showing up” and “doing the work”. Each time reiterating the potentiality of what resides in the spaces between confidence in knowledge and trust in learning.

This work is a cornerstone for individual projects existing across the globe in real time. Contributing to a larger collaborative effort, this body of work received tremendous

attention and acted as a catalyst for conversations to form around education for COVID-19 vaccinations, equitable access to medicine and a contemporary rendering of the powerful act of making as a means of creating space for dialogue. Beginning in April of 2020, *Free the Vaccine* established a series of synchronous virtual forums called "Advocacy Innovation Labs" where participants learned to pair "social justice with creativity to develop innovative advocacy tools" (FTV, 2020). The outcomes of this work, which FTV explains "are specifically designed based on years of research into psychology and creative activism", (FTV, 2020) exist for public use and active participation in the conversation of equitable access to medicine.

Gathering as artists to create around a concept with the use of a defined media, grounds work, providing immediacy and what artist, writer and editor, Stephen Durland describes as "something intimate in scale and its ability to accommodate an audience" (Durland, 1998) As artists work with various media in conversation with the concepts they are responding to, this translates out into the viewers experience, making available the message that the artist shares. In the work that occurred throughout Maine for the Creativity Vs. COVID exhibit, artists gathered around the idea of equitable access to medicine through the use of media that included projection mapping, sculpture, textile and printmaking. These material choices brought the conceptual work existing at a global scale down to a community of creatives who worked together in response to this discussion through art. In doing so, this work caught the attention of local media, learning communities and medical institutions, which in turn, amplified this response. This occurrence sparked a cycle that continued to grow throughout the deployment of responses to *Free the Vaccine for COVID-19*, creating an echo across the global landscape.

A focal point of the Creativity vs. COVID exhibition is a bank of "*strategies for creative advocacy*". (FTV 2020) Entering the physical and virtual spaces of the gallery, viewers are immediately met with a grid of strategies - situated as a call to action. The format is open to

the emotions and creative intuition of its participants, rendering iteration after iteration of response to care, togetherness and equitable access. This presentation of strategies presents the audience with agency to participate and become artists, engage, advocate, activate and create. Schultz and Legg address an approach to methodology from an arts perspective that is strongly represented in this work taking on what they refer to as “a “living” (Spencer & Paisley, 2013) form of inquiry” (Schultz & Legg, 2020). This was iterated in a series of events that dovetailed the *Creativity vs. COVID* exhibition. This series of work included a projection mapping event titled *A Shot In The Dark* which was organized by the department of Intermedia in the spring of 2021. This work was quickly followed up by a virtual education forum with professionals in the medical field presenting information about forthcoming availability of COVID-19 vaccinations.

3.2.1.1. *A Shot in the Dark*

Putting to use some of the aforementioned “*strategies for creative advocacy*”, (FTV, 2020) this work resided in the actions pieced together by artists using what was available with the gravity of uncertainty that defined the unfolding phases of the pandemic, in order to engage in a critical conversation about an issue of our greater humanity.

The *Creativity vs. COVID* exhibit was first installed in a physical space in the Spring of 2021 and through this connection, Intermedia was able to create many works that were added to the exhibition before moving on to the following exhibition sites. *A Shot in the Dark*, was created as an extension of the exhibit in the form of a projection mapping event that took place outdoors across campus in early April. Through the use of video, animation, light, sound and physical presence despite the cold and social distancing requirements, these elements paired with creative strategies enabled intermedial artists the opportunity to orchestrate a highly visible event that worked in tandem with the goals of a community to raise awareness and provide accurate and accessible information in the form of a call to

action. The work from this projection mapping event is now cataloged in the Special Collection of Fogler Library Archive at the University of Maine.

Artist, Joseph Albers is quoted in the book, *Leap Before You Look: Black Mountain College 1933 -1957* stating "we are gathering experience". (as quoted by Molesworth & Erickson, 2015) This connects many of the works that involve participation, community and collaboration. They may at times transcend these categories and coalesce to form a work-of-art. On occasion however, a spectacular phenomenon can occur, through this accumulation of time and context, art has potential to become *art-at-work* which is something else entirely.

This *art-at-work* creates a space for introductions and sharing, not to serve as just a bi-product but rather as the form, unable to exist without the setting, time, participants and tools that came together as the whole. This creates a new site, an atmosphere that didn't exist before the work was undertaken in its entirety. Thompson explains that engaging in processes associated creativity and art can inform our ability to produce "the creation of affect". (Thompson, 2012) As method, this is critical to how we may begin to define art-at-work in its many locations. It is how we unpack the ideas of success of these exchanges and further expand our library of terms, actions and symbols that provide space to create discussion. Thompson further expands on the concept of "creating affect" in stating "Symbolic gestures can be powerful and effective methods for change". (Thompson, 2012) Here we are presented with the poetics of what art is capable of offering in the interdisciplinary realm. The ability to take that leap by extending what occurs in the steadfast confines of the studio, lab or closed forum outward, sets in motion the agency we need in order to build new terms. This terrain, also encompasses the reality of the audience informing what the work becomes and how. As choreographer Twyla Tharp states, "You never want the planning to inhibit the natural evolution of the work." (Tharp &

Reiter, 2003) This progression is a defining factor in the art *being* art when engaged in social settings.

While art is a powerful tool that we study, share and return to time and again, Sawyer points out, “no creative process is ever completely predictable” (Sawyer, 2006) The necessity of being quick on one’s feet is found in every stage of the work, from the planning through the install and the facilitation. It is most prevalent however, when the work evolves to be co-created by both the audience and the facilitating artists. When the work is set out into the world, a rehearsed script will only take the artist so far when engaging with community and needing to respond to instances of being questioned, challenged or invited to turn in a new direction. Multiply this by the number of contributing artists and any intention of the work becomes nestled in an ecosystem of creative participation rendering new and hopefully unimagined outcomes. This continues to expand the field of methods that artists may then enrich, refine, iterate and deploy in future work.

3.2.2. Olafur Eliasson

A Practice.

Backing up to see the entire practice of Olafur Eliasson, is taking into consideration what it means to render art as shared experience. This practice encompasses collaborative art making, interdisciplinary research and deploying art, architecture and design out into the world in tangible ways.

In the Netflix Original Series: *Abstract*, Eliasson looks through the screen, speaking directly to you the viewer about how this particular series is designed with the intention of being a form of participatory art itself and explains: “This means that you and I are gonna collaborate...” (Eliasson, 2019) From here, we as the audience actively engage with the following exercise of observing and experiencing the room change as the screen changes

over the first few minutes of this series. In pausing to speak directly to the viewer, Eliasson changes the rules for how we as viewers anticipate spending the next hour of the day.

Change your pace, change your perspective and in doing so, perhaps discover the worlds of experience that have been there the whole time, yet unknown. This practice, illustrates what is possible in profound and impactful ways when an artists' attention is initially drawn to places that spark, as writer, editor and publisher Andrew Brown articulates: "creativity, wonder and beauty". (Brown, 2014) Naturally, anyone may question the relevance of these elements in certain settings however, when presented with the opportunity to enter a situation from another perspective, who can predict what we may find. It may even be important. From an installation-based gallery practice and work situated in open elements, to social practices and inhabitable spaces, Eliasson's studio of creative collaborators design art in balance with participants in order to create whole works. This choreography speaks about relationships, whether among individuals or in conversation with the environment... work that as Eliasson would explain, is "totally dependent on you being there." (Eliasson, 2019)

Eliasson's work takes place in teams to generate art works with engineers, artist, designers, activist groups, and city planners, among others. In this process, remaining aware of the critical role of the artist in a diverse group of practices, he reminds us that "My role is to make sure that it's a work of art, and...what drives every decision is not how, but why". (Eliasson, 2019) The 'why' is often what we find to be the most ambiguous or inaccessible in a professional art practice. Perhaps we have been met with the dismissive statement, 'because it's art', I would like to clarify, this statement unbacked by further discussion is not a good enough answer and we need to move beyond this disconnect in order to engage with the work ahead. While this is an example of a studio operating at a large scale, in the sense that there are various stakeholders involved from start to finish in a vast array of productions; the key take-away is the *practice* of listening, of seeking ways of

understanding, approaching and engaging. As an example of successfully sustained collaborative practice and research, Eliasson's studio is considering the process of co-creating as a way for change, ways of "turning thinking into doing". (Eliasson, 2019)

3.2.3. The Southern Ocean Studies 2009-2011

Collaborators: Gavin Baily, Tom Corby, Jonathan MacKenzie.

How may data visualization transcend laboratory screens and academic publications in order to reach diverse audiences? How can we take what occurs so far beyond the context of the everyday for most individuals and amplify its heartbeat? The recent launch into widespread data visualization in connection to the COVID-19 pandemic has put the world in closer proximity to this idea as we now experience a wide range of visual representations of data through the media, social platforms and academics. There is however, a balance to strike between rendering evidence and conjuring connection. The collaborative project, *The Southern Ocean Studies* is another work that utilizes methods of art, data from climate sciences and their connective capabilities to establish middle ground for the message of change and how it resonates in our emotions. Proximity and scale have the ability to deeply impact our recognition, our understanding of place and how we are nestled within it. Rendering what would typically be observed in an encapsulated screen as a single model is instead, presented at slightly larger-than-human scale and composed in layers prompting us to recognize the presence of time. This changes how we may become accustomed to processing information distributing imagery. The information here are collective and changing climate models.

Throughout history, humans have a connection with the sea that is shown in paintings, music, literature, poetry, dance, industry, science, exploration and more. This connection has its own rhythms and tides, presenting at once the freedom of horizons and in the next breath a reminder of scale and one's place within a larger system. With this knowledge, two domains can together pivot to utilize what art and science are uniquely trained to do in

order to create a new view of the space. The word *data* may bring many things to mind, some of which may include calculated outcomes, process driven results... things experienced within the empirical tracks of peer-reviewed publications. While this is one accurate illustration to imagine upon thinking about the word itself, what details give this shape? What connects us to the spaces that the data is speaking from? Eleven years after the *Southern Ocean Studies* work was created, we can see the impact that visual methods of representing information continue to have in our current context.

The collaborating artists of The Southern Ocean Studies explain in their work, an effort to render “ecological complexity as pattern and felt experience rather than quantity and measure.” (Brown, 2014) If we are to experience from within, a different way of looking at the proximity of ourselves to (in this work) climate models, through the more familiar form of an artwork which invites contemplation and reflection, can this impact our perception of change? Authors Schultz and Legg describe the potential for an approach such as this to “offer a rich vessel for meaning making when language feels insufficient or falls short”. (Schultz & Legg, 2020) Art is historically a traditional ground to work within as we know to seek meaning through its representation and the opportunities to subjectively inhabit the space of the work may provide a necessary and accessible component to consider.

There is a component to the *why* of collaborative practice, not only among artists but among the arts and science; both fields are saturated with curiosity and wonder. Why is that important and why is it essential to continue finding ways to cross paths? McNiff offers a critical insight to this question by articulating: “artistic form of expression and the scientific process integrates science and art to create new synergies and launch fresh perspectives”. (McNiff, 1998 - as quoted by Leavy 2014) Here, when we see art working alongside science, in a capacity which allows us not only to “see” science, but to “experience” it in our embodied knowledge of the world. Creating time and space for such a collaboration may provide the ground to identify new opportunities to consider not only the

marketable products of an art and science team, but also a practice that over time builds confidence and integrity as a method for understanding the world.

3.2.4. Tree Mountain, Ongoing

Agnes Denes.

Art is constantly adding new definitions to its overall identity. Artist Agnes Denes has challenged our perception of what art can and may grow to be many times. Yet is it through one particular work that Denes work takes root in a way that pushes the work to become of time itself. The project, *Tree Mountain* is to date, a decades long work that looks into what the future may hold with care, attention, action and stewardship. This work emerged through Denes' proposal to transform gravel pits of Ylojarvi, Finland into a living breathing mountain of trees. (Spaid, 2002) This is collaboration on a monumental scale though the work began as a rendering for a proposal. Denes utilized elements of the neighboring fields of Chemistry and Mathematics in order to translate the space between a painting and a proposal. Author and curator Sue Spaid summarizes that through equations and science-based processes, these fields provide the artist with "the vehicle through which analytical propositions can be visualized". (Spaid, 2002) Simply put, Math was an essential component of the arts-based ecological intervention that Denes was proposing. Denes' practice incorporates working with the Earth in order to produce outcomes for change and restoration. This particular work is notable as it connected art, activism, politics, science and social engagement. A total of 11,000 sapling trees would be planted upon a human-made hill in order to create structure and activate a process of "land reclamation" (Spaid, 2002) in response to growing ecological distress that impacts life of Earth. This work is more than planning a forest upon a hill as it calls for stewardship, intergenerational and interspecies collaboration in order to sustain a mutually beneficial environment that highlights a practice of care and intention.

This proposal breaks ground in terms of site as well as precedent as this work was embarked upon with support from the government of Finland “as Finland’s contribution to help alleviate the world’s ecological stress”. (Spaid, 2002) We must recognize the role that interdisciplinarity plays in the conventionally understood definition of success in this work. The ability to present work that is backed by math, earth science, political science and social engagement has profound potential when the pieces are placed in the right configurations. Authors Frieling, et. al. contribute an especially interesting footnote to consider by addressing how works can be perceived in proximity to how we as artists activate the space: “The degree to which a work is a social activity can also influence its reception”. (Frieling, et. al., 2008) Building upon this idea, if participants have agency, transparency, structure and the *why*; we as collaborators can quite literally build mountains.

3.2.5. Basurama

A Series of Engagements.

A question that many fields often ask is how do we gather? Where are sites in our communities that we experience being together with friends and strangers? Parks, gardens and libraries often come to mind when reflecting upon these questions. Basurama, a cohort of problem-solvers whos’ work originates from the Madrid School of Architecture in the early 2000’s (Thompson, 2012), unpacks these questions and reassembles answers that reimagine and construct new versions of “public spaces using leftover material”. (Thompson, 2012) The work is carried out through the realms of architecture, design, urban planning and community in order to produce real solutions for space and waste. Creativity shines through in the ability to think outside the box and be continually informed by the communities in which this work takes place. With a central theme of movement and play, this work takes place in locations across the world transforming spaces to encourage gathering, outdoor activity and thoughtful reconsideration of material and its potential uses. Sullivan asks how we may shift to contextualizing the research process “as a creative and

critical practice where imaginative insights confirm, challenge, or change our understandings". (Sullivan, 2010) This site of creative problem solving and interdisciplinarity nestled in the living realm of community does just that. Producing work that is art in its physical form as well as the form of social impact.

3.3. Conclusion.

The ability to design works that have the capacity to reach out into the world, inviting participation and discourse about the ways in which we experience complex systems provides a set of coordinates to establish interdisciplinary practice. The critical presence of time that is required in order to review how any work may create impact brings art and interdisciplinary research into conversation. The outcomes of this genre of work are not fixed in the time of exhibits, their outcomes contribute to the larger conversations that define the time and space we inhabit. Returning to the questions for artists in the field of interdisciplinary research, we may consider how art can enhance discussion through data visualization or perhaps activate space between research and audiences through the invitation to participate in shared experiences. Art may engage with the processes of neighboring fields by constructing community gardens and sharing knowledge about their care and keeping or through the process of inviting scientists and medical practitioners to the studio in order to create engagement strategies that are informed by the current research framing the message. These sites are not presenting a singular way to deploy this work but rather ways to consider building a structure from the multiplicity of connections that can occur.

CHAPTER 4

ELEMENTS OF A PRACTICE

4.1. Interdisciplinary Outcomes

What is it exactly that an artist does? The answer to this question is in part, unique to each creative practice. There are many combinations of themes and actions that create more specific practices under the umbrella of *creative*. There are also instances where artists are involved in education, and by way of participating in a creative practice, conventionally defined research as well. Though these titles bear unique significance to the practitioner, overall, when these three elements exist within the same practice, we can triangulate these entities into a descriptive term: *a/r/tography*. Schultz and Legg describe that this is a term, addressing “the ways multiple roles of artist, researcher, and teacher are folded in the process of inquiry”. (Schultz & Legg, 2020) These pieces of the artists’ identity are often woven into life beyond the realm of the professional name tag which also connects the artist *to the art* - creating a bridge, where identifying modes of expression acts as the glue for these pieces. *Artist, educator and innovator* Owen Smith, in reflection of how art may be viewed in a contemporary context supports, “the idea that art is part of life”. (Smith, 1998) In exploring this idea, ways of articulating experience are able to reflect important aspects of life that inform who we are and how we are in many arenas. While we may grow to hold levels of expertise with elements of our lives, we are perpetually learners as well.

The opportunity to work in realms where one may be simultaneously, a learner as well as expert, is what can ground us, keeping us energized in our practices. Our relationship with creativity is a dynamic space that requires investment as well as the ability to put it to use.

Rather than seeing creativity as a hammer in the toolbox that can be used to build separate entities; *creativity IS the toolbox* that we carry and add to over time. Continuing this thought, the more we invest in and maintain our creativity, the more we are able to engage with it. Creativity as a mainstream practice is often considered something that is to be enjoyed as it occurs in the personal as well as the professional realms of life. Here, regardless of the way in which we maintain our creativity, we can relate to the following piece of wisdom from an expert in creative process, “to keep enjoying something, you need to increase its complexity”. (Csikszentmihalyi, 1996) Through the deeper investigation of what drives our curiosity, we can gain experience with new tools and methods, adding them to the creativity toolbox we carry.

4.2. Synthesizing a Program of Study into a Methodology

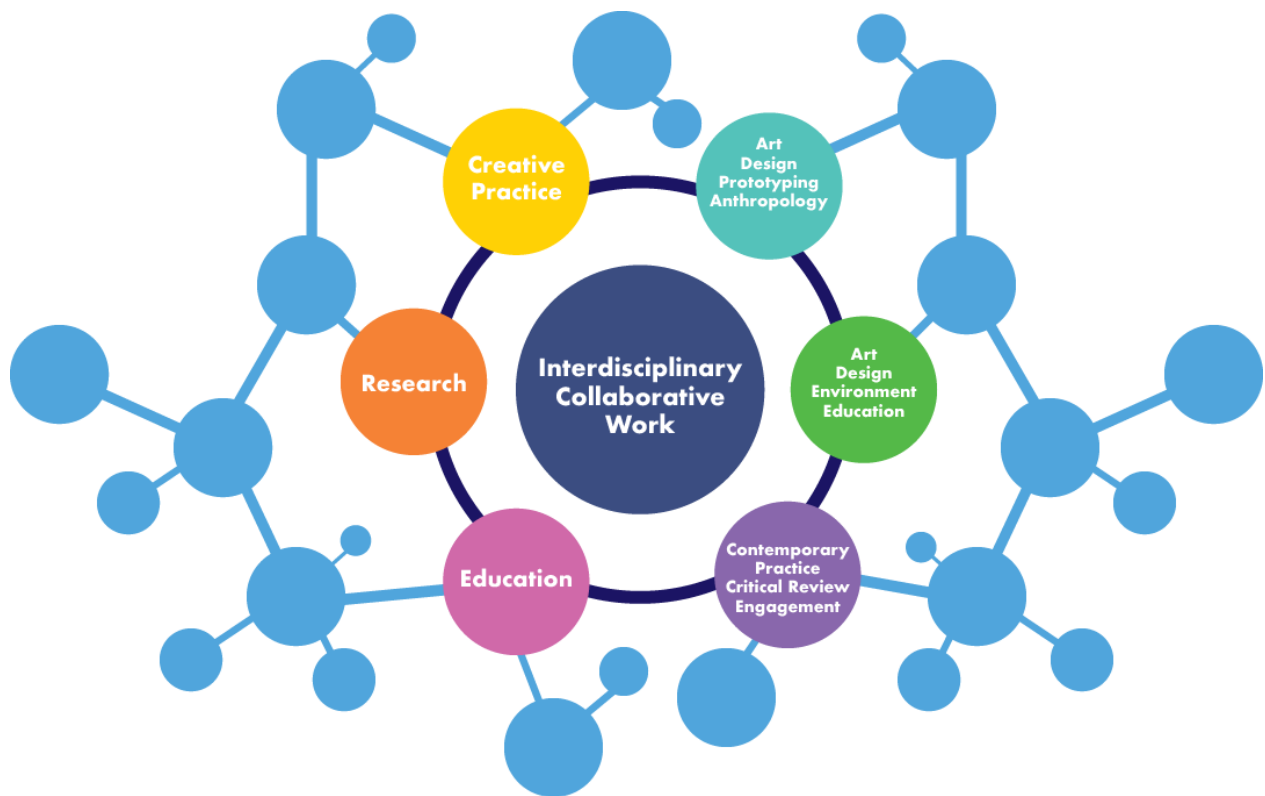


Figure 2. Elements of Practice.

The methodology is an iteration under the umbrella of a/r/tography. Each of these items was explored through the lens of being an expert in the field of art and my own practice, while simultaneously existing as a learner through the work listed above. Learning from the position of being an artist made me aware of how differently I am trained to ask questions and deliver answers, though, in learning the vocabulary and rules for engagement in these spaces, art afforded me the opportunity to ask different questions as well as learn to see different answers.

This process of completing my program of study became the foundation needed in order to genuinely engage in collaborative processes beyond my own field. An artist-researcher may one day appear as an artist in the studio, another day they may appear as an artist participating in a social work seminar or volunteering in community gardens. In learning to look at information in different ways, with different expectations and vocabularies, I have learned how to exist as both a learning and knowledgeable contributor to collaborative processes. Possibly the most important take away from this experience is remembering to actively listen to your team.

The resulting product of practicing this methodology is the creation of a mobile studio-lab funded by a collaborative and interdisciplinary research grant. Each component of the project is informed by a former element and the act of being these three identities at the same time (artist/researcher/teacher). This work questions what a studio-lab means as a site. What it may bring to research and creative spaces that a studio or laboratory would not be able to provide on their own. Speaking from the experience of an artist with a studio practice, there are important insights to this space and how it works that are worth sharing in response to these questions.

4.3. The Studio

For artists, the studio is a place that highlights the significance of the learner and expert within each practice as it is an environment for exploration, expression and connection. Eliasson offers a unique view into the workings of studio practice as “being exciting and magical and capable of doing things that otherwise would be hard to do”. (Eliasson, 2019) It is through this and similar processes that artists are able to learn not only by researching subject, material and context - but through trial and not so much error as a *willingness* to keep working until the process yields a result that completes the intention. The stakes of success are not yet set in place, as the studio is an environment where one can think, feel, play, express, create, undo, share and imagine. Once the work is open to review, set out into the world, the stakes of success often settle in. We see the work differently at this stage than we do in the initial exploration because the evaluation process more accurately reflects trial and error. The trial being critique, and error referring to the work moving on without reworking.

Maintaining a studio practice is often as complex as it is simple. We pursue what we want to know more about by diving into the subject matter, feeling our way through the environment, and cataloging our findings in whatever medium best suits our practice. Then, a deeper dive takes place which requires the artists to open their findings to critique, multiple ways of making sense of what we are assembling or unpacking. At times, this piece of the work (*critique*) is what provides perspective for an artist to better identify *how* they are engaging in their work. From end to end, learning is part of the studio process. With this understanding of the artist, studio practice and their relationship to learning, we can begin to approach terms such as

practice-based research or, arts-based research with less of an abstract notion in mind when we look for a definition. Defining an arts-based approach is to forge connections, linking the outcomes of “quantitative and qualitative traditions of research” (Sullivan, 2010) through methods that reflect our contemporary setting. In doing so, creativity and connection provide collaborative practice the kindling needed to sustain the spark of innovative ideas. Artists are able to utilize strategies as one may a recipe, to collaborate in ways that impact participation. This is important to emergent practices as the artist is exploring how to provide an invitation that will return interest and engagement. Recognizing through the work that the artist is not the exclusive keeper of knowledge. Art historian and professor, Claire Bishop keenly identifies that, “viewers are not students and students are not viewers” (Bishop, 2011), this is closely tied to work that activates engagement and collaboration as the two should not be used as interchangeable terms. What we hope for in works such as these, is space to provide the viewers agency to contribute to the overall knowledge within the work. This overall knowledge taking unique forms and sending returns to those who participate. Couros illustrates a frequently drawn upon strategy seen in this type of work, “simply to be the spark”. (Couros, 2015) In order to get deeper into the collaborative process over time, artists often extend out beyond their immediate realms to create connections, informed by experts in other fields. This is a process with potential to identify where works may begin to break through, creating unexpected outcomes that contribute to the overall practice of inquiry.

4.4. What Qualifies as Failure and Success?

Locating the line between a failed work and a work that doesn't meet the expectations of the audience and possibly the artist, is not so easy. What may be a total failure to convey a certain message, does not mean that the work is without meaning. The question then becomes, how are we defining failure and success? Through failed attempts, we build new ideas and a flexibility in our contextualization of the resulting work. This is a juncture at which it is important to recognize the many ways that lessons enter our lives, providing opportunities to grow and change. One of the most impactful times that this occurs is in our formative years, where we are expected to experience the magic and wonder of learning new things every day. From lessons in friendship, counting and cooperation, to learning what lives in the quiet spaces of contemplation and reflection, stories help us to realize bits and pieces of who we are and how the world works. One may argue that as we progress through our academic journeys, we distance ourselves from the intuitive nature of illustrated books, among many other creative approaches in learning that highlight the "the emotional as well as academic" (Needles, 2020) through what artist and educator Tim Needles describes as "social and emotional learning". (Needles, 2020) The arts in their vibrant array of methods, provide a medley of entry points to themes and concepts that we are in proximity to throughout our lives. Growing with us, these media from illustrated books to musicals have incredible valuable in the ways we make connections and communicate not only with one another but with our-selves and our work. As this research can only be impactful if it practices the work that it represents, art in many forms is intentionally woven into this experience as it conveys meaning that reaches into different aspects of our lives and at times quite literally, helps to paint the larger picture.

An important story about measures of failure and success comes from the celebrated book: *Rosie Revere, Engineer* by Andrea Beaty, illustrated by David Roberts. Rosie, a young

innovator learns the valuable lesson of perseverance and reflection through her adventures creating whimsical inventions. Displaying the courage to imagine as wild as one dares to, Rosie learns the impact of iterative process when supported by the encouragement of her great - great aunt to keep dreaming up ways until you find one that works! Through each result of putting ideas to the test, we can learn from these moments and incorporate the *how* and *why* into the next time we try. Resilience is often an expectation of learners however, if we continually shut down points of entry along this path, we risk losing that sense of belonging and agency critical to the success of this expectation. Welwood offers an important insight to consider when looking into the process of process, "Learning to accept and relate to our vulnerability...is a source of real inner power and strength". (Welwood, 2002) The root of these definitions can often be subjective and where appropriate; we may recontextualize a failed attempt in our work into a step that is informing the process of practice. Eliasson's insight to the creative process and practice looks at the expressions and explorations that come together to inform how we approach larger work. This addresses the impact of activating different ways to respond to happenings in life, curiosities and interests. Eliasson explains how often artwork need not, "be successful in order to be quality". (Eliasson, 2019) This critical insight is a key element in developing our creative voice, confidence and compass. Iteration, imagination and play are drivers in how we may forge relationships with the time and space that we inhabit.

Surveying the landscape of creativity and its ability to take root in certain conditions, Brand and Eagleman bring to light an important consideration that applies to physical, emotional and cerebral spaces: "creative output typically requires many failed attempts". (Brandt and Eagleman, 2017) This, is indeed connected to the stakes of the work: who it impacts, where it happens and how. These factors are precisely where the importance of creativity and engagement are best informed in interdisciplinary settings, where ideas can not only be generated, but also gather their appropriate bearings. Again, it is critical to examine the

criteria for the definitions that we hold for successful work in social and collaborative settings. When we look at the lifespan of a work and its impact, Thompson interjects critical review for “projects that intervene only temporarily in a given situation”. (Thompson, 2012) This is an instance, where the criteria of the work are critical to establish early in the process. If the intent of the work is to provide new ways of engaging, different ways of understanding, articulating a message or activating a space, then the ways we evaluate and criticize may differ from that of a work that establishes itself as a permanent or long-lived system. These are items that need to be talked about early in the process of planning collaborative work that extend out into the world. This is especially true for work that takes place between practices and in interdisciplinary contexts, as these definitions may differ greatly in different fields.

4.5. Practice is Playful

Play and imagination are elements of our being that over time, are nudged and reorganized to make way for what culturally we grow to understand as more practical skills. Yet, this changes how we see, how we plan, how we learn and grow. The arts are indeed a privileged arena where the elements of play and imagination are critical in the artists ability to engage in their work, at times, they even define the artists’ practice. The attitude that much of art is exclusive and absurd undoubtedly cast a real misconception upon artists. Exploration, humor and play may be idiosyncrasies of art that contribute to the challenges of acceptance that art often faces among academics. However, these elements exist in many other ways of working and can bridge the space between content and audience. Allowing fun to be part of the process encourages the practitioner to experience emotions as an important piece of context in the work that they are engaged with. The minute that joy enters the picture, few things are more motivating! Leavy offers a similar conclusion by sharing, “if you’re having fun, I don't think it means you’re not serious, I think it means you’re on to something.”

(Leavy, 2015) This fun ignites imagination to consider new and different options within the scope of the work.

There are times that the boundaries of our professional fields require us to distance ourselves from our emotions in order to perform the tasks at hand. In contrast, there are also times when we are afforded the space and time to recognize ourselves on a more integrated level. In this context, we can build in opportunities to explore the overarching connections that draw us to what we do. Circling back around to the idea of practice, there are things that drive us to continually engage and explore. Here we can see that in addition to the outcomes of whatever it is that we are trained to do, we also actively participate in the creation of our practices. Kate Kretz shares in a forthcoming publication addressing the depths of meaning in creative practice that, "The act of creating things with your whole being is a radical one". (Kretz, TBD) Could it be here, in the emergent spaces of interdisciplinary collaboration that we may be afforded opportunities to engage a version of ourselves that encompasses greater levels of detail? Another idea of what play can offer, that is especially relevant in light of the pace of change over the past several years, is its familiarity as a process. Considering how "play becomes a strategy for embracing change" (Thomas & Brown, 2011) expands the working vocabulary of research to allow contributions from disciplines at the edge of quantitative and qualitative discussion. What can it then mean, for learners and practitioners in all fields if we not only continually engage in ways of making sense of change, but also gather to discuss iterations how this happens?

4.6. Conclusion

The thrill of discovery that occurs in learning something new is part of the kindling of many practices. We as practitioners know that there are knots to untie and puzzles to solve that can drive our desire to re-engage with our work. However, at times we plateau and find ourselves in search of where to turn next.

When creative practitioners reach the location in their work that requires reaching beyond what is familiar, intermedial artist Dick Higgins offers a suggestion “to proceed further in any given work, one must look elsewhere”. (*Higgins* as edited by Hamilton, 2007). Here, creative practitioners can move between active and reflective engagement. When we have this knowledge and are able to apply it, meaningful and transformative practice can develop.

CHAPTER 5

ACTIVATING ART & SCIENCE

5.1. Introduction

The question is now, how can art and science collaboratively build a structure that affords us the opportunity to engage across the field of participation? More importantly, once we establish a way to move between disciplines, where does it allow us to go?

5.2. Mapping Ways to Participate and Collaborate

In order to fully consider this, a deeper exploration of the ways in which artists call for participation is needed, bringing to light the descriptions of several influential writers in the arts, the social, and the practice of practice: Bishop, Helguera, Novitz, Rodenbeck and Eco. Each of the noted authors describes a structure that artists may build participatory work from. As we traverse this space, the ways that artists consider their audience breaks into categories that impact the *who*, *how* and *why* of their work. Historically, we understand audience to participate in the artists' work at the level of observation or, as Novitz explains "appreciation". (Novitz as quoted by Rodenbeck, 2011) Through this lens, the audience activates the art as *art* by being there, witnessing it, and experiencing the formal techniques that comprise the work including location, context and environment.

Artists have the opportunity to move within the space of participation, designing works that take a variety of forms. Peeling away a layer of separation between the audience and a work may be a route that the artist considers. Here, we can see a way that the artist offers the audience a step into the art. Novitz describes that this may be presented in the form of "navigating through a limited range of options, each with a determinate outcome." (Novitz as quoted by Rodenbeck, 2011). An example of this would be incorporating an interactive element to the piece, one that gets the audience up-close or maybe even personal within

the world of the artists' work. Helguera contributes an important condition for artists in this process and reinforcing the need to "adhere to certain structures to attain a certain result". (Helguera, 2011) Casting out lines to engage in play, mechanical manipulation or exploration can be effective ways to bring the art and audience closer together.

Contemporary practice has evolved to include many different ways of getting from here (an artwork), to there (participation). As we iterate these ways of setting art into the context of life, artists have the opportunity to design works that give the audience agency to make their own decisions about the amount of involvement that they will take on in a work. These choices are tied to the complexities found in a piece and can range from a singular work in a defined environment to a site of engagement that promotes interaction and the identification of take-aways that can go on to impact any number of works in the future. When we experience the opportunity to make decisions about how we as the audience want to engage with a work, additional layers are peeled away from the idea that creativity and expression are to be explained only by the artist.

At the greatest level of complexity and involvement, artworks can be designed with the idea that the audience actively collaborates with the artist or artists in order to create a work larger than what the artist could create on their own. This is work that is at its essence, is dependent upon the contributions of the participants, which ultimately cause the work to take shape in unimagined ways, moving in unprescribed directions. Mary Jane Jacobs writes about how at times the product of social components in a work often produces "art-like moments" (Jacobs as edited by Purves & Seltzer, 2014) where the work changes from what we may expect to see from an art work to an "experience that embodies what art can do". (Jacobs as edited by Purves & Seltzer, 2014) In these moments, the presence of the artist remains critical in order to set the work in motion however, the participants of the work are staged to inform the process and indeed impact its trajectory over time. This pathway is an

on-ramp to the most collaborative and engaged form of participation and leads towards a potential to change from an artwork, to *art at work*. The significance of this transition from artwork to art-at-work is where we can test just how empowered we dare to be as creative practitioners. If we consider the spaces between art and research practice, what can this allow us to begin to see?

5.3. Creating a Plan

Expanding upon the idea of art-at-work, creative and social practice can be situated to provide time and space to engage in interdisciplinary collaborative research. The launch of the UMaine Arts Initiative Seed Grants have been developed in order to support this type of work that is currently forging new connections, generating dialogue and delivering outcomes. This support has transformed the visibility, enthusiasm and potential of what the arts are now doing in our academic community and as a result, this sets art in the position to invite not only participants, but whole disciplines to the table for discussion. This chapter outlines an interdisciplinary and collaborative UMaine Arts Initiative seed grant, developed between the School of Forest Resources and Intermedia. The results of this award have developed into a genus of works that reflect the structures described in the previous section and have been designed to directly address several of the goals of the UMaine Arts Initiative, including however not limited to:

- “Create collaborations across multiple departments and units to address the grand social and ecological challenges facing our world”. (UMaine Arts Initiative, 2023)
- “Provide students with hands-on experience in art making, a deeper understanding of arts research, and opportunities to learn from exhibitions, performances, programs and events”. (UMaine Arts Initiative, 2023)
- “Promote the many ways that the arts at the University of Maine can serve, enrich, and empower the people of the State of Maine”. (UMaine Arts Initiative, 2023)

This developing body of work is currently being undertaken in iterative stages and aims to continue expanding ways in which art and science may continue working in concert with one another. Beginning with a conversation between art and science, an initial exhibition took place comprised of individual collections from Maine artists as well as collaboratively generated works designed specifically for the exhibition site. Progressing through the timeline of this work, the content of this chapter primarily addresses the stages of developing a mobile “studio-laboratory” called SLAB. Presented as a stepped process, “activating art & science” leads to the invitation: “Let’s Collaborate”. The following are results of this phase of collaboration: a site of engagement that is intended to function as a location to build and share ideas. This, is one presentation of how art can be at-work among disciplines, delineating a space for charting steps to establish a bank of resources to test, build upon, share and ultimately, put into practice.

SLAB has the ability to offer multiple levels of engagement across a variety of content areas. It serves as a marker of the space in which the activity occurs, and is intended to carry complexities larger than a singular artwork. SLAB is an iteration of art-at-work as its intention is to continue adapting within the environments that it is activated. Through the thoughtful construction of a structure that invites participation and encourages exploration of materials research, creative production, systems of the natural world, play and connection; art and science create a conversation where learning takes on many shapes and forms. With research content and materials specific to the state of Maine, activity and conversation are given room to develop into new questions and ideas.

5.3.1. Concept Mapping

The project is actually several pieces of a larger whole, an ecosystem. Using this vocabulary to talk about connection and proximity, art and science are building a location to meet and present ideas for ways of working together to support the goals of each team. Embarking on

the reciprocal venture of pairing research and creativity to navigate communication and engagement can be filled with complexities. However, these complexities are context from which we are able to chart ways forward. Forward implying that we are passing landmarks that help us to identify this new terrain and in order to do this, collaborators need to know something about what they are on the lookout for. This is a critical point to mark in the early stages of development as it provides navigation tools that the team will be able to put to use in defining the boundaries of their playing field.

The following questions have functioned as navigational tools that this team of artists and scientists are using to render their new shared environment:

- What factors of learning, design, visualization, data and poetics are considered in the construction of this prototype?
- Why is it important that these elements are considered and integrated into this site?
- What are the navigation points needed in order to create a map for the research?
- How is the product informed by each iteration of the creative process?
- What will establish the criteria for evaluating the success of the whole work?

In the process of answering these questions, the direction of the larger work begins to take shape. The applications of knowledge that each discipline brings to the space are put into practice in their own ways in order to have the material that will begin to take a unique form. This process of accumulating methods begins to inform what the possibilities may be for outcomes of collaboration. In this instance, the conversation began with a prompt and was met with a series of responses that actively build the foundation for future collaborations.

Where we begin to truly engage in the collaborative process is determined after we set time to ask questions and identify answers about each of the contributing fields and their

practices. Within this research, these conversations were able to bring new information to the table after the fabrication of a structure that serves as a place to think about scale, definition, practicality, narrative and identity. Each possibility is reliant upon the space that is built for these ideas to unfold. As an exercise in prototyping, this work completes cycles of vision, experimentation, fabrication, critique and revision that are present among the collaborative team in the arts as well as the collaborative team of art and science.

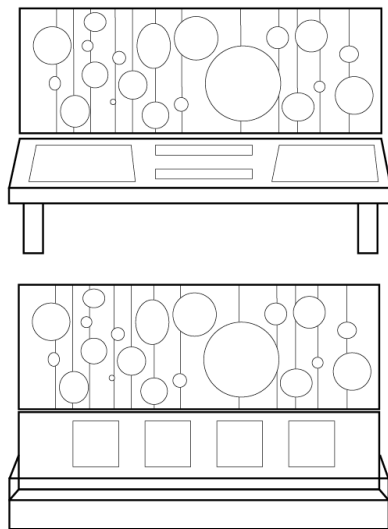


Figure 3. SLAB: Initial Plan

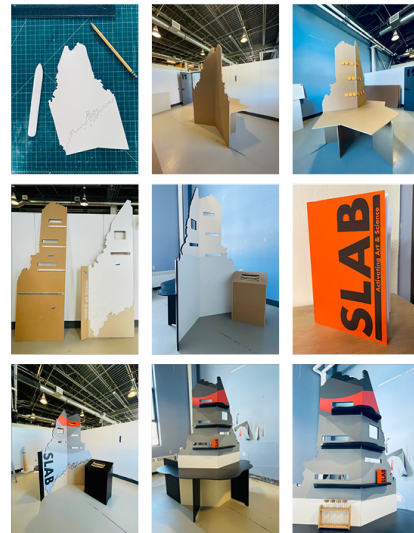


Figure 4. SLAB: In Progress

From the spring of 2022 through the spring of 2023, the SLAB design evolved to reflect conversations and goals as discussed by the interdisciplinary team of Forestry and Intermedia. SLAB was initially proposed as a drawing that rendered the studio-lab as a two-sided workstation housing a bench top on side A and a trough on side B. Presenting opportunities to talk about how an audience may interact with material from the forest as well as materials to create and interactive media displaying the types of research happening throughout the state of Maine, considerations of who, what, when, where, why and how began to inform how this structure changed to its current form. Identifying the need to create a structure that was able to be assembled and disassembled by a minimum of two people impacted the overall design of the structure. This sparked conversation about how

the SLAB could be designed to consider form and function in ways that enhanced one another, inviting participants to navigate the space and interact with the different elements available to them.

SLAB is designed with many elements that come together to create the space as a whole. From the text that shares where you are, what SLAB does and what we as participants can do as a result of joining in the activities to the iconic outline of the state of Maine combined with functional forms that reflect what one may see in Maine forests, the experience is intended to create a new space where artists can think like scientists and scientists can think like artists. Establishing a new form with the content of forest research, the intention of design and the capacity to engage creatively with the space gives participants opportunities to see, listen, touch, imagine, communicate and make decisions in this space. Each time this work is activated in a new setting the experience will be as different as the people who engage with the SLAB. The works that are produced fall into a variety of categories and do not inherently belong to the structure itself as the intention of this work is to generate various forms of agency throughout the entire process. With each run of this cycle, the work is able to progress forward. As this project operates as a prototype for future ways of activating art and science *out in the world*, we need to explore the spaces between our projected outcomes and the reality of what occurs when the work is happening in real space and time.

This jump from the familiar creates a need for additional dialogue between collaborators. From form and function to cause and effect, collaborators need to establish their knowns in order to recognize the unknowns when they occur. The impact of Leavy's question "*what is this piece of art good for?*" (Leavy, 2015) can be the icebreaker that gets to the driving force of what collaborators are trying to accomplish. While pointed, this question remains open to suggestion and adaptation which is crucial to the overall process in interdisciplinary

activity. Within the scope of this research, collaborators have thoughtfully constructed an environment where art, design, research content, place and engagement coexist. In answering Leavy’s question, when activated out in the world, this “piece of art is good for” (Leavy, 2015) bridging the distance between the artists, the researchers and the general public. By designing an environment that considers participants and how anyone may have important knowledge about Maine through a variety of experiences, including but not limited to “research”, a story can begin to develop. However, there are many steps to go through before collaborators are able to arrive at their conclusions. It is essential to dedicate the time and space for getting to know each other, each discipline, and what it is everyone actually wants to talk about through this new work. What may be even more critical is the recognition that this is not a one-time conversation, it occurs throughout the process.

Identifying Common Elements of Practice:

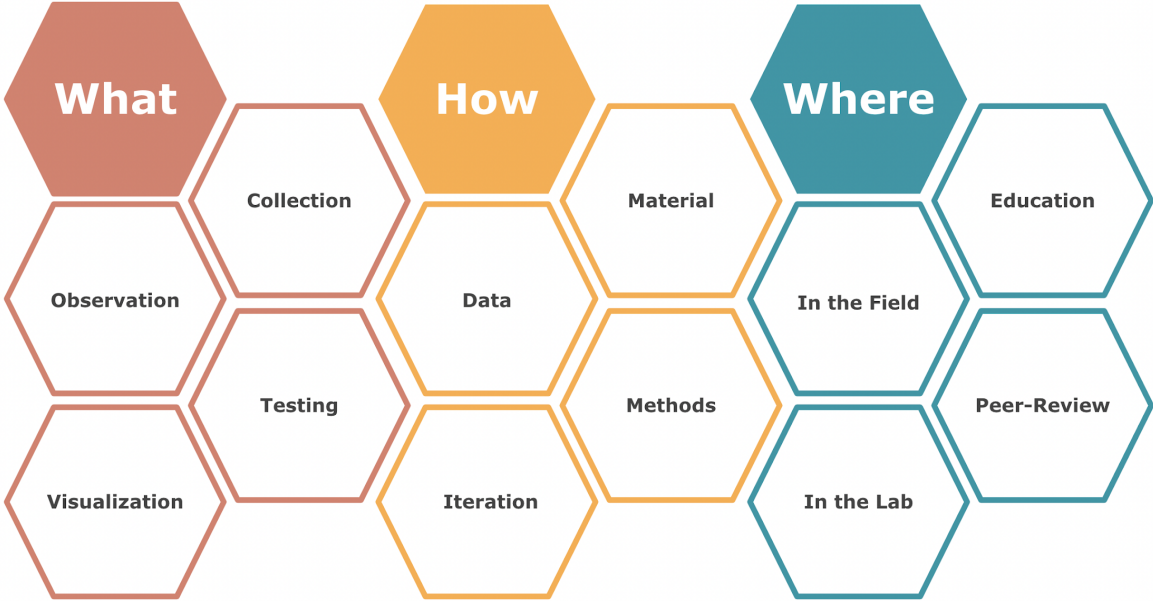


Figure 5. Common Elements of Practice.
Description: When we frame common elements of practice as modular forms, we are able to create unique and complex structures based upon these shared elements.

Collective discussion of these elements helps the cohort and its respective complexities locate opportunities to identify where the work is informed and begin to take shape.

What:

- Observation: Information recorded from external sources.
- Visualization: Alphanumeric, Time, Shape and Color, Form and Texture.
- Collection: Sources, Samples, Evidence of the surrounding environment.
- Testing: Reconfigurations of understanding and our proximity to it.

How:

- Data: Evidence of activity.
- Iteration: A practice.
- Methods: Technical Process.
- Material: Tools and production of works.

Where:

- In the field: Working with the unpredictable, improvisation and exploration.
- In the studio/lab: Controlled environments.
- Education: Institutions of higher education, workshops, professional development.
- Peer Review: Publication, Critique, presentation at festivals, museums and symposia.

Another critical space that collaborators must navigate within these cycles of discussion are questions that recognize the two types of agency that the work will address. These forms of agency will undoubtedly exist within their own timelines; acknowledging their presence provides the necessary room to explore each one independent of and within context of one another. Agency that is developed among the works deployment out in the world with different audiences has potential to yield results that are unpredictable and worth dedicating additional time to explore. What stands with equal importance and exists as the core of this writing however, is the agency that is developing between not only the artists and scientists of this individual work, but also the field of art and science as larger local entities. Because

it is here in these interactions, that the roots of connection and storytelling are beginning to establish a sense of place and time that may give potential for additional innovative practices to emerge in our academic setting.

Critical Questions for Collaborators:

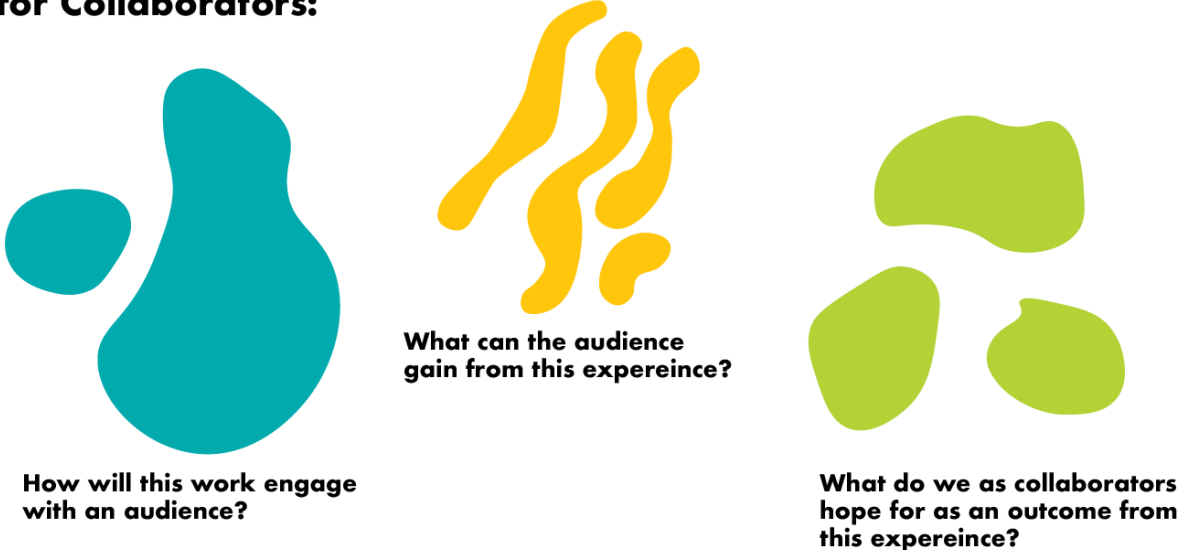


Figure 6. Critical Questions for Collaborators

Description: Questions for collaborators can shape the work and help to identify forms of agency.

5.3.2. Materials Research, Connection & Creative Engagement

Materials are a common ground for both fields. Artists utilize material to generate works and Forestry, as part of a multifaceted and networked practice, generates materials. How can we build an idea out from here? First, we need to get messy and make things in order to let our ideas take shape. Then, we can circle back to talk about what we want to exhibit from the findings. At this point, we need to identify material and process that both fields may have experience with. We need to ask what are we interested in, where are the existing connections, and what is this work actually doing when situated between fields.

Whether prompted to explore possibilities from the middle out, or diving off the edge into a new world, we can reboot systems of engagement from early in our careers as learners by incorporating movement back into the process, providing people with the opportunity to “learn by touching, manipulating, and making things with their hands” (OPW, et al. 2010) By considering this in the plans we make moving forward, we can begin to discuss what this environment looks like when we see it through the lens of our own practices as surely, it will be different in different contexts.

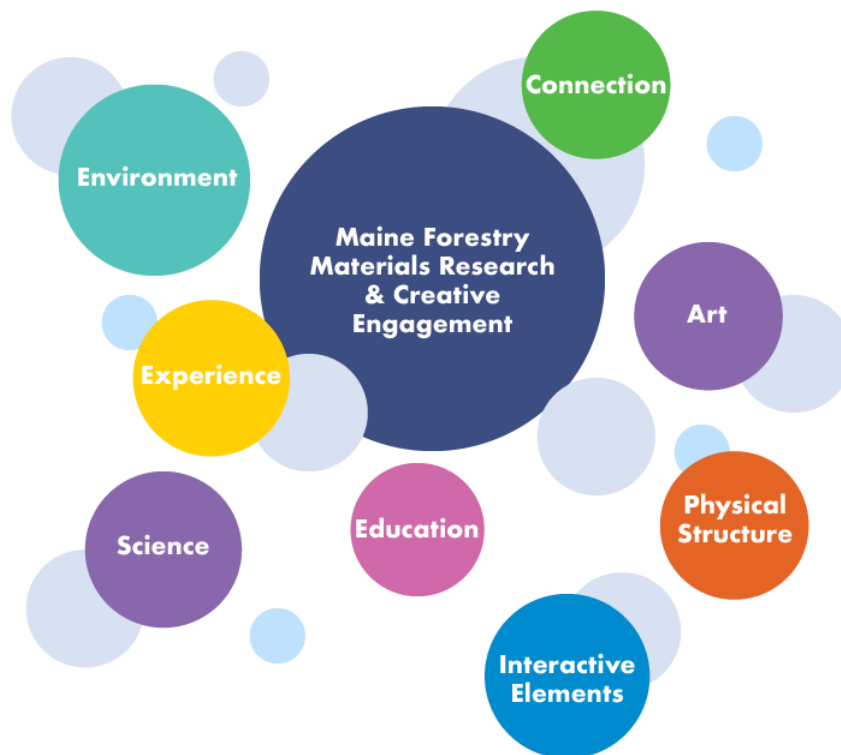


Figure 7. What we use *in connection* to what we talk about.

Mooring to something familiar in the process of exploring something new, can be a transformative tool in making connections. Creating art with materials that are accessible, that encourage play and mark-making for the pure joy of the experience, is a strategy that has been identified as an important way to inform this work.

The remarkably versatile crayon is a staple of the artists tool box. It may even be one of the first mark-making utensils that many of us interacted with in childhood. Celebrated as an essential item for learning and preparing for back-to-school, crayons are as sophisticated as they are playful. Ranging from material that can be purchased in professional art supply stores to the local grocer, or made by hand, this mark-making utensil is important and a connection between art and science. Another connection between these two fields takes the form of a pocket-sized book filled with blank pages. Whether we call it a sketchbook or field notes, this is a place familiar to each discipline for cataloging observation. Though we may often see the digital equivalent of this item today, there is something unique to the book itself. When retrieved from the box or shelf that it is stored, we can recognize that it has lived the experience along with the mark-maker. The salt air, coffee droplets, smudges, ticket stubs and pieces of nature kept within the pages of these little books, have all experienced the same time and space as the author, scientist, illustrator and enthusiast. These two items, small as they may be in form, connect processes for engaging in our fields of art and science as well as bring forward the experience of making for sake of making. This combination, is intentionally incorporated into the SLAB design as a way for participants to engage as a learner and expert of process and material.

While existing as a learner and expert, we are also able to find fresh perspective in unexpected places. In the award-winning book, *The Day The Crayons Came Home* by Drew Daywalt, illustrated by Oliver Jeffers, a collection of crayons artfully deliver life lessons in creativity, perseverance, cooperation, imagination and collaboration to their friend Duncan. Over the pages of the story, we learn about the adventures (*and misadventures*) of each crayon. In the end, Duncan builds a structure to house the crayons, designed with a little bit of everyone's story in mind. The subtleties of this book reflect the need to consider our context, ways of approaching work and relationships with spaces, detail and people in order

to inform how we move the conversation forward. There are so many resources that we have utilized to this point in our experience that have helped guide us in generosity, thoughtful observation, listening and reflection. Whatever our field, let's not forget to recognize that no matter how far we climb in our expertise, we can learn from something that connects us back to the joy of wonder and play, the importance kindness and cooperation or the potential of imagination, whether it be through the use of crayons or the power of a picture book.

5.4. Collaborate

Through these processes, we address the significance of establishing collaborative and interdisciplinary thinking as a norm and its role as an important contemporary practice. As our world and workplaces shift towards this way of working earlier and earlier in our learning systems, we are presented with an opportunity to jump into these spaces and create transdisciplinary environments that open doors for emergent creatives, researchers and problem solvers. Planning, testing and refining a practice of collaboration among multiple levels of engagement and proximity generates new material for our respective fields as well as the larger community our disciplines are nestled within. We can use this not only as an opportunity to showcase the outcomes of specific projects but also the larger outcome of creating a map for where this work can lead when we invest the time and resources into developing this field.

The knowns that we have to work with here and now include three types of teams that collaborators may encounter. In this research, the types of teams and levels to which each team collaborates in different ways is a dynamic and complex expansion.

Teams & Engagement:



Small Teams:
Consisting of collaborators from the same discipline can build their ideas and materials for discussion.



Interdisciplinary Teams:
Establish a shared vocabulary, goals and identify what everyone brings to the table. From here, they distill information into a curated set of topics that relate to one another.



Engaging Audiences & Participants:
The interdisciplinary team plans events in order to provide access to the concepts, materials and research. It is important for the team to identify the outcomes they would like to see from these events as well as reflect upon what happens in real time as a result of the event.

Figure 8. Teams & Engagement

Description: There are teams involved in collaborative, interdisciplinary work that expand to include larger numbers of collaborators, disciplines and the public. Each level of magnification reveals complexities and considerations specific to each context.

Like any ecosystem, the small teams continue to work together in conversation with their larger interdisciplinary teams. On occasion, the small and interdisciplinary teams may together engage with audiences and participants that extend beyond their rosters creating something entirely different. This is a crossroads where each member of the interdisciplinary collaborative, including individuals and cohorts are presented with a choice to stamp the work as complete or continue the cycle with the intention of refining their process.

5.5. Conclusion

Through time and reflection across this work, significant contributions have been made to the process of collaboration and interdisciplinary inquiry that, in conjunction with one another, have provided the ground from which these two worlds may forge stronger

connections and greater exploration of what is possible. The need for a physical form to gather around was imperative to the bridging of knowledge and interests between these two fields of study. As we seek to practice a sustained engagement with exploring potential work between disciplines, this prototype is quite literally a space between science and art where each set of contributors has a way to render content and avenues of collaborative study. In producing a prototype that is called a studio/lab we are able to use the language of our training and translate it into different contexts.

Again, when we step back from our need to produce an immediate outcome that caps the process and pushes work on the next brief, we can see that we are highlighting the work of building connections. The outcome of this work is illustrating a method by which we can bring art and science together in discussion with the intention of developing rich and sustainable methodologies for a continued practice of exploring this field between fields. In careful review, the SLAB is progressing towards a greater level of engagement and collaboration, though it has not yet reached the full volume of agency that we as artists strive for. The potential is limitless and there is more work to be done as the process of evolution in this work is just starting to be recognized. This work involves a continued timeline that will require in-depth engagement with many of the questions presented throughout this writing. By placing this prototype out into the world, the contributing artists and researchers will need to establish an understanding of what this work is doing now; what it could be doing after establishing the parameters of its potential; and what it will go on to do with active engagement and support from each contributor. Is this a space for teaching? A space of dialogue? A space of reflection? These are the questions that will need to be answered, together, as this work continues to unfold. As the work was embarked upon in a similar fashion to the building of this methodology, we will continue to learn what we know by engaging in the process. The results that this inquiry will yield may be most applicable to the process of building a field between fields or perhaps refine a specific way

to engage with the public from the team of art and science. We will need to continue to do the work in order to further know the work.

As art is engaged with science in many different ways, the adaptable nature of this prototype lends itself to sustained engagement and iteration. We are called to consider where the unexpected work is taking shape. If at the outset of this collaboration, we expected to have the most impactful work appear between the public and the researchers, we may have misplaced the significance of *what* the work is asking us to listen to. In this instance, at this point in the timeline, the agency that we seek to generate is finding a foothold between artists and scientists to create something new, something bigger than a singular project. This work contributes to a current that will carry interdisciplinary conversations to new junctures where this agency between artists and scientist can build, resulting in empowered and integrated inquiry that reaches further out into the world with each connection.

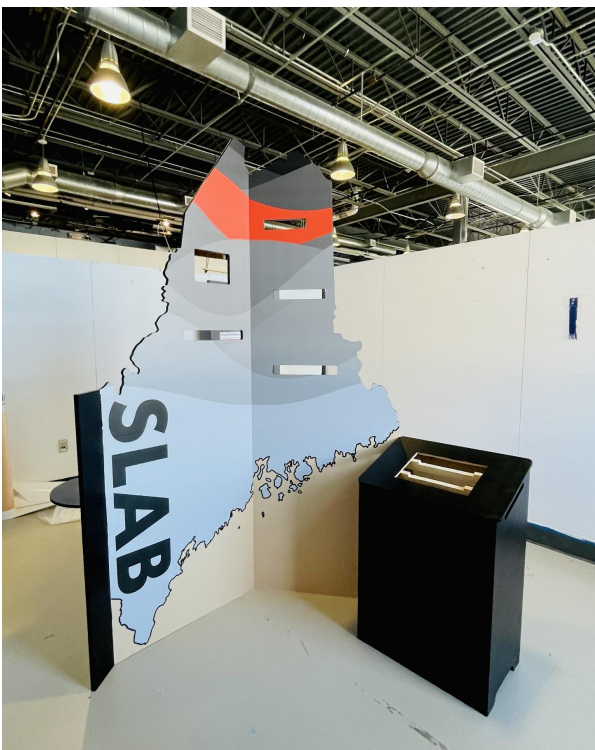


Figure 9. SLAB: Front



Figure 10. SLAB: Back

CHAPTER 6

FUTURE WORK

6.1. Future Work is Starting Now

The center of gravity for this creative research has been a synthesis of identifying methods of engagement and the spaces that activate them when presented as shared resources. Art, is the fluidity of ideas and actions that build upon each other among divergent practices, resulting in the ability to shift perspective in the questions we ask and how we may consider approaching answers.

The outcomes of this creative research practice are explorations of what inquiry can be when working in proximity to different methodologies and disciplines. Through the construction of projects that invite participation and exhibit creativity and research, this work places critical questions to the emergent spaces of interdisciplinary research as a practice. Asking what these spaces may produce as a result of engaging in parallel practice to ones' own field of study, builds a new archive of how to ask questions and what criteria we will use to shape our responses. This defines interdisciplinary, collaborative research as a generative space where the formulation of questions is the driver for growth as a practice.

6.2. Building Momentum

Ideas of forging ways to connect among divergent practices is where art is critical. It is with this understanding, that we may begin to shape the spaces where art can flourish with intention among the historically identified *MVP's* of research. If we as artists, ask that different systems engage with the rules of art, then what rules of other systems will art need to engage with in return? As researchers are invited to jump into the studio mindset with agency and courage, we need to ask where artists may experience that same agency to question, experiment and grow. So where are the places that this work is taking shape

in our current landscape? What is already in motion and how can we reference the challenges and success that we gather from the critical review of art at work in the world today?

STEAM curriculum “encompasses science, technology, engineering, art, and math”. (Needles, 2020) Interestingly however, (Needles 2020) makes a point to continue this definition by acknowledging “it doesn't need to be limited to those five subjects”. (Needles, 2020) Recognized for engaging in interdisciplinary modes of inquiry and problem solving, STEAM encourages students to utilize creativity as connection and hybrid systems for learning. Further expanding the definition of STEAM is highlighting the “the importance of creative arts in the learning process”. (Koester, 2017) The inclusion of “A” in the acronym brings an entire world of possibilities to the table when placed in proximity and equal validity to the surrounding letters and their disciplines. Arts ability to act as a comprehensive ground for engaging in different content areas early in ones’ learning can build connections to material that is often found to be exclusive and over time, can often be misunderstood as outpacing “art projects”. This is critical as Koester acknowledges the inherent interdisciplinarity of art practice and how “artists need to develop deep knowledge of their subjects before they can make powerful art about them”. (Koester, 2017) As the field of STEAM education emerges, we witness an arena that art is both asking for participation as well as being held to standards that may veer from our traditionally defined art world. Art can do this job and much more when given the opportunity and credibility to generate agency in learners and wider audiences.

The expectations for workplace readiness that are building in these spaces underline the critical practice of examining the definitions of what constitutes skill, knowledge and how it can be applied. Though academics will retain their channels of training and integrity, how we establish the conversations among these spaces is building another essential element of

professional readiness in understanding the nature of interdisciplinarity. This reaches beyond art and science because this is human interaction in the world and part of our nature. It is important to remember that this is part of our introduction to learning and we cannot afford to forget how empowered we are when we are encouraged to share what we know through a vibrant range of options.

Iteration and perseverance present a through line in this work and as a result, we are reminded of the need to keep trying until we find ways that make sense for what we aim to accomplish. This process takes time, energy and a good honest look at how we are in the early stages of figuring out how this works. With this in mind, we can establish a positive proximity to what psychologist Carol Dweck explains as a growth mindset (Dweck, 2016) and the abstract nature of multiplicity. Art may still surprise, engage, subvert, question, play, challenge, activate and visualize; but now, art must also be accountable and informed in different ways. It is our job as artists who are involved in these spaces, to bring artistic process to the table with the intention of using these tools to build towards new and different outcomes. This creates a multiplicity for art and its applications once more as we can step even further into the collaborative and interdisciplinary process when we are able to activate different spaces. The outcomes are important to consider in the work ahead however, we need to survey these distances before we can place the expectation of traditionally successful products and outcomes on this space. The pace at which we need to engage with our current time and space requires adaptability and a willingness to learn from the inclusion of multiple contexts. This is the practice. To continue expanding our vocabularies and ways to consider more, not only in our own disciplines, but the spaces in between. Here, we may create connections that transform and bring new and critical conversations to the table.

CHAPTER 7

ART-AT-WORK

7.1. Essential Practice

Having identified and described the potential within spaces that reside between fields of study and the connective capacity that art has to offer these environments; how will we put art to work at large? Understanding the ways that we can talk about creativity, how we use it, contextualize and maintain it, we can set this term as a cornerstone in our interdisciplinary vocabulary. The lessons that we learn from creativity act as a shared resource among varied professional practices and we can see the roots of Kaufman and Sternberg’s statement “It’s better to be creative”. (Kaufman & Sternberg, 2010) If we build our interdisciplinary practices from creativity and inquiry, we have established what connects us and this a foundation for the future.



Figure 11. Critical Compositions

Description: One of many possible Critical compositions from the questions in figure one.

As in all research, the work ahead will take many attempts to reach definitive outcomes. We as researchers and creatives may once again benefit from lessons learned early in life by channeling play and joy to shape a “growth mindset” (Dweck, 2016) when the going inevitably gets tough. In these emergent spaces we are presented with the opportunity to envision different processes, expectations and outcomes. This opportunity will contribute to a collaborative and innovative environment in our academic setting if we are able to continually invest and grow enthusiasm for learning more about the ways that our practices share ground and challenge each other. Moving forward, the effort to develop these connections will require increased visibility, structure, resources and support in order to sustain a vibrant setting for work that is taking root between the realms of art and science. In future iterations, we must also consider the many additional fields that can join the conversation and contribute to these spaces, the potential is profound.

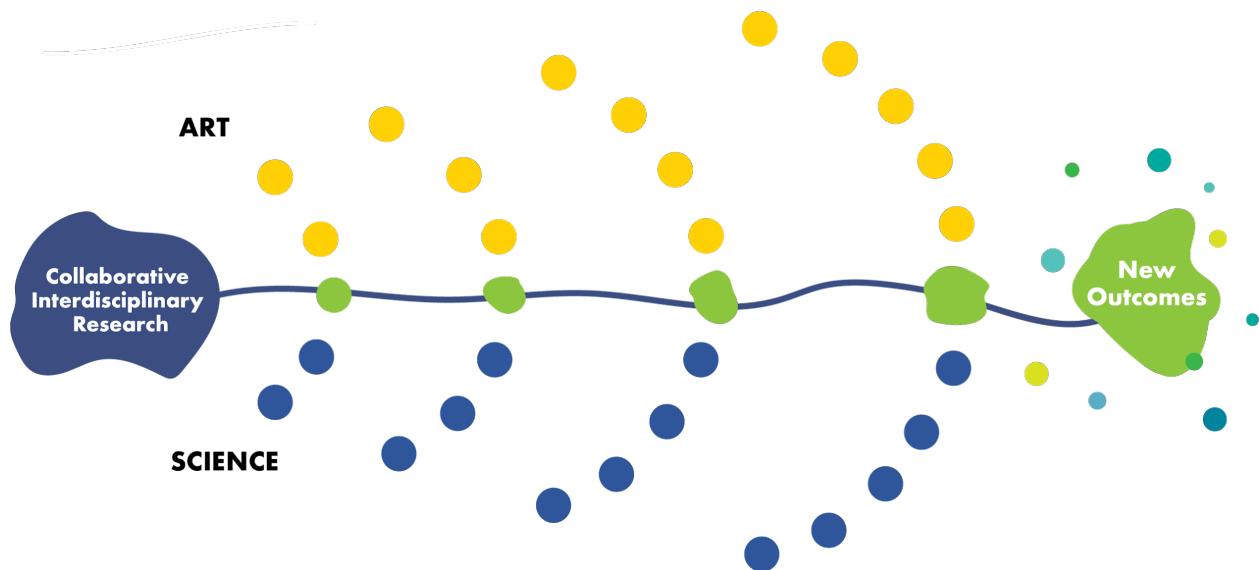


Figure 12. Art at Work in the Spaces of Collaborative Interdisciplinary Research.

This is a practice that calls for a significant array of methods and new ideas about the physical spaces that this work can activate. Though the dialogic spaces of creating connections may take place among the existing structures we have, how and where this

work comes to life is in the process of being prototyped. In its entirety, each element of this creative research leads to findings that highlight what is necessary in order for collaborators to develop understanding and trust in the work. This includes the need for:

- An adaptable physical space for in-person work that houses the appropriate tools for successful cross-disciplinary communication and idea sharing.
- A developed plan to facilitate introductions and onboarding that frame the work that informs new practices and develops connection among the people, places and ways of working that will be involved in the work ahead.
- A mapping of who will contribute to the work of each type of collaborative team with full acknowledgement of the evolving nature of collaborative and interdisciplinary work.
- A collectively defined set of goals and expectations for accountability and continued commitment to the task of maintaining a productive work environment.
- A consistent schedule for group meetings with an agenda that is accessible to each participant and structure for providing feedback and reflection.
- A communications plan that is shared with the entire team of collaborators when work takes a new direction.
- A project planning and task-tracking infrastructure.
- A collectively defined plan for how the work will be presented to collaborators and as applicable, to wider audiences.
- A designated facilitator to coordinate the time and resources required for productive discussion and reflection of the collaborative process and work produced at multiple stages throughout the timeline of the project.

As this work evolves within its respective academic environments, stakeholders will gain experience, skills and insight into the process of working among disciplines and in

collaborative teams. This new knowledge will continue to grow and shine light upon the ways in which this work can be refined and applied in new and different settings. An essential finding from this process is the necessity for not only the time and space to generate the conditions of working in these ways, but also the importance of an environment where interdisciplinary practitioners can discuss their work among their academic and greater communities that share this practice as well through professional development opportunities. At its core, this work is relational and the environment that we build for it to exist can evolve over time by highlighting this defining quality.

Though our practices may take vastly different forms requiring divergent skills and training, we share the ground of creativity, inquiry and the importance of communicating our findings. Creating opportunities to engage in this work that can occur among a scholarly community requires the ability to imagine what is possible with a greater volume than the many ways that challenges can multiply through the process. Singer, songwriter and actress Janelle Monae and the characters of Sesame Street remind us that no matter how challenging it may be to try... again and again, we can get there with support and by embracing "the power of yet". (Janelle Monae & Sesame Street, 2016)

Often times the greatest moments of this work will occur when we are not looking for them. This connects the back to several important elements that are included in this realm of practice: *the relational, the unexpected and the human*. When we are able to acknowledge these elements as a through line, the agency of building community and connection can take root. As this work emerges, it is often practiced in addition to the professional responsibilities that shape our practices. Though the work is demanding of our calendars, social skills, and ability to practice creative problem-solving, it is worth it. Some of the greatest outcomes that develop throughout this process are found in the exchanges we have with colleagues, the generosity that people often exhibit by adding time into their day

in order to help and seeing the forms that are emerging along the horizon as we continue to invest in this process. The collaborative ventures that will continue to proceed after this iteration of interdisciplinary research will shape the definitions of successful methodologies that seek to build connections among fields of practice and engagement with greater communities.

Creativity requires us to be curious, brave and imaginative. Engagement requires us to be bold, vulnerable and capable. Research requires us to think in ways that are complex, critical and undeterred. We are all of these things and more when we practice art at work.

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Figure 15. Stamps.



Figure 16. Two-Sided SLAB Passport Booklets.
SLAB: Activating Art & Science / Let's Collaborate

BIOGRAPHY OF THE AUTHOR

Anna Martin was born in Portland, Maine on October 14, 1987. Anna has lived throughout the great state of Maine for much of her life which has inspired a love for the outdoors and adventure. She attended the Rhode Island School of Design and graduated in 2011 with a Bachelor's of Fine Art in Illustration. After graduating, she returned to Maine and is having the adventure of a lifetime with her children and husband. Anna received her MFA in Intermedia from the University of Maine in 2020 and then continued expanding her practice throughout her program of study for the Interdisciplinary Ph.D. After receiving her degree, Anna is thrilled to continue contributing to Interdisciplinary Research and Collaborative Creative Practice and looks forward to the work ahead. Anna is a candidate for the Doctor of Philosophy degree in Interdisciplinary Studies from the University of Maine in May 2023.