Instructions:
Please submit the narrative application as a single PDF file to Collaboratory@umich.edu by midnight on Monday, July 2, 2018 (we recommend writing the narrative in Word and saving the file as a PDF for submission). This form along with the budget form may be separate files from the application but need to be included in one single email submission to Collaboratory@umich.edu.

Narrative Application:
Please observe the word limits indicated and indicate details in the narrative as outlined on the website.
2. Describe your research project. (Tell us why you want to pursue the project.) (1000 words)
3. Describe the centrality of collaborative activity to your project and explain how you will pursue the project collaboratively. (1000 words)
4. Describe the members of the research team. (500 words)
5. Describe the outcomes of your project. (500 words)
6. Describe your project management plans. (500 words)
7. Describe documentation and assessment plans for your project. (500 words)
8. Please provide a timeline for your project.
9. Please complete the Project Grant Budget Worksheet (available on the website).

Project Title

Sensing Algorithms: A Collaboratory
Provide a 250 Word Abstract of the Project.

As human experience is increasingly digitally mediated, encounters with texts, media, space, form, and even reality itself are now produced by algorithms: step-by-step procedures, authored by a select few and then executed by computers. For the user, the reader, the citizen, and the audience, sense is computed—hidden calculations determine what rises to awareness. As a scholarly response, this proposal calls into being a new multidisciplinary group that will develop new forms of collaboration, combining traditional humanistic scholarship with other creative practices. This project asks: What can be done to reveal algorithms at work and unearth elements of their operation that are otherwise inaccessible? The computer algorithm will be our topic and our tool: In Suchman’s phrasing, algorithms can be “both a method through which things are made and a resource for their analysis and un/remaking.” We will write new algorithms to reveal what is hidden within existing ones, a matryoshka of the digital. Our group will take the organizational form of an art collective to join together art, design, music, architecture, cultural studies, computer programming, the digital humanities, and humanistic scholarly critique. We will combine the talents of undergraduates, graduate students, and both junior and senior faculty. Our collective will produce a series of pieces in different forms and modes, including material objects, essays, and computer programs. Our outputs will mix traditional and other forms: publication, exhibition, workshops, and creative practice. These will be documented via the Web, conversations with audiences and peers, and a new podcasting effort.

1. Identify the Research Team

Principal Investigator (PI) - include title, dept affiliation(s) & uniqname

Christian Sandvig, Professor, School of Information and LSA Communication Studies (csandvig) [PI year 1]

Faculty Team Members - include title, dept affiliation(s) & uniqname

Sophia Brueckner, Assistant Professor, Penny W. Stamps School of Art & Design (sbrueckn) [PI year 2]
William A. Calvo-Quirós, Assistant Professor, LSA American Culture and Latina/o Studies (wcalvo)
John Granzow, Assistant Professor, Department of Performing Arts Technology; School of Music, Theatre, and Dance (jgranzow)
Catie Newell, Associate Professor, Architecture Program, Taubman College of Architecture and Urban Planning (cnewell)

Grad Student Team Members - include dept affiliation(s) & uniqname

Guadalupe Madrigal, Ph.D. Student in Communication Studies (lupita)
Megh Marathe, Ph.D. Student in Information (marathem)

Undergraduate Team Members - if applicable

To be identified later using UROP process.
Application Narrative

2. Describe your research project. (Tell us why you want to pursue the project.) (1000 words)

The algorithm is now a central problem and topic of inquiry among scholars of culture. In computer science the word refers to a step-by-step procedure for accomplishing a given task: “lather, rinse, repeat” is an example found in textbooks. Yet as human experience is increasingly digitally mediated, encounters with texts, media, space, form, and even reality itself are now produced by step-by-step procedures, authored by a select few and then executed by computers, to significant effect. For the user, the reader, the citizen, and the audience, sense is computed—hidden procedures and calculations determine what rises to awareness. “That we are now turning to algorithms to identify what we need to know is as momentous,” Gillespie writes, as having relied on “the word of God.”

Algorithmic Culture Demands New Modes of Research and Creative Work

In an “algorithmic culture,” our everyday habits create an ever-expanding but inaccessible archive. Most of what we type, photograph, say, or do is now logged, sorted, analyzed, republished, and repurposed toward ends we cannot see. This argues for a new kind of collaborative scholarship. We must overcome the complication that, for the critic, only the products of these computations are accessible and not the operations or operands that produced them.

New media “objects” like the digital algorithm cannot be subjected to traditional critique because they cannot be fully observed. The botheration of the male gaze is joined by the “coded gaze,” yet there is no man behind the curtain (or at least he is very difficult to find). Algorithms are the contemporary recipes for reality, but even if the magic formula for Google were revealed, it would be so complex that it would be difficult to predict what it will compute in a particular case.

Algorithms operate on data in ways that are both personalized and stochastic. For example, algorithms might never output the same website—or jail sentence—twice. Computed experience, though built upon a bedrock of rationality, offers an incoherent, irrational plan for us. The many conflicting processes involved are fragmented, sometimes irritating, and frequently opaque, surprisingly even to their designers.

Paraphrasing a lesson from computer science, an artificial intelligence will beat you at chess without noticing the room is on fire. How will the humanities respond to a world that is constructed by these technologies?

We Propose a New Collective Spanning Five Colleges

As our answer, this humanities collaboratory proposal calls into being a new, radically-multidisciplinary collective of five professors and three doctoral students. Our task: To probe these omnipresent but otherwise invisible algorithms. Our tactic: To develop new forms of collaboration that will combine traditional humanistic scholarship with other creative practices.

Our project is ambitious. We will interrogate the politics of this new, dynamic, computed representation of the world. We will reveal algorithms at work and unearth elements of their inaccessible archives. The computer algorithm can also be our tool: We will entrain new critical cultural production to the new cultural production of computer algorithms. In Suchman’s phrasing, algorithms can be “both a method through which things are made and a resource for their analysis and un/remaking.” We will write new algorithms to reveal what is hidden within existing algorithms, a matryoshka of the digital.
Our intellectual grounding is as varied as the participants, but a cohering theme is “digital studies,” an area within the digital humanities. One strand of the digital humanities investigates computers as a resource for traditional humanistic work, while a second strand applies modes of humanistic inquiry to investigate computing itself. We are working firmly in the latter camp. We propose a series of collaborative artistic and scholarly projects that address the problem of knowing algorithms, divulging “algorithms and their others.”

**Toward FAT, Sensible Algorithms**

To make algorithms sensible, we will transform algorithms into sensory experiences and thus reflect on their sensing of us. As an ontologic inquiry, we ask, “How do algorithms leverage us to co-produce their outputs?” As an epistemic inquiry, we ask, “How do we know what we know about algorithms and vice versa?” The specific projects we propose will traverse terrains of algorithmic ignorance and the absence of information in order to pursue its opposite. We plan to focus each of several works on different algorithms of wide significance. An algorithm might be important because of its prevalence. For example, the Google RankBrain algorithm is used by over 70% of the US population whenever someone searches Google. Alternately, algorithms might be important because of their consequences: the NSA’s SKYNET algorithm identifies terrorists for the US military’s drone strike “kill list.” When Edward Snowden leaked the fact that unsound machine learning techniques were being used in SKYNET, this led experts to estimate that the algorithm may have already inadvertently killed thousands of innocent people.

These projects will instantiate and develop ideas from digital studies, including the subdomains of software studies, “critical making,” Web epistemology, and the “ethnomethods of the algorithm.” Bridging the humanistic and the technical, these projects will draw inspiration from the diverse backgrounds of the faculty participants. We are inspired by the pioneering work of artists like the F.A.T. Lab (Free Art and Technology Laboratory), as well as the pioneering machine learning work of the FAT* (pronounced “fat star,” for Fairness, Accountability, and Transparency, where the star means “all” or “any”). As explained in the next sections, each work will employ novel forms of collaboration combining subsets of making, programming, visualization, performance, interaction, exhibition, and scholarly reflection.

Our team used the proposal development grant to scope our inquiries and begin the process of matching the expertise in our team (section 4) to the potential “target” algorithms we will investigate. We also agreed upon a process by which our two-year investigation will proceed (section 8) and settled on audio podcasting as one of our preferred modes of documentation and dissemination, to include both processes and outcomes.
3. Describe the centrality of collaborative activity to your project and explain how you will pursue the project collaboratively. (1000 words)

Our model for collaboration will be an artist collective spanning five colleges. By combining experts whose normal work practices involve making, building, doing, programming, performing, and/or designing (henceforth “making”) we hypothesize that we will be able to make significant headway on the intellectual challenges facing the humanistic scholarly study of algorithmic culture. Collaboration is essential because we are grappling with a research domain where a wide variety of technical skills is required. By combining our diverse backgrounds, we are intentionally fostering what Lovink calls “uncanny networks”, linking us together as nodes of intellectually productive difference.

Our training is riotously different. We have conflicting habits and expectations. We work in studios, practice rooms, libraries, offices, and labs. We make books and we make things. We teach classes with wildly different formats, sizes, and pedagogies. Both our students and intellectual products would not normally intersect. We are intentionally pursuing a challenging collaborative form as a response to the Provost’s Office charge that the future of the humanities at Michigan be innovative, and in response to Sidonie Smith’s call that the future of humanities be organized around an “ensemble” ethos. It may very well be that what is at stake is the future of humanistic work.

Our ensemble begins with the disavowal of the techno-fantasy of convivial and subservient robots. Such reveries distract us from the bidirectional and distributed intelligence that is already operating when we interact with the cascade of algorithms operating behind the screen. To interrogate this we consider ourselves and our algorithmic co-performers as subjects. We investigate our relational identities as they proliferate and alter via computational layers. Looking at the advertisements that bubble up in our news feed, how do algorithms see us? What transpires in the cosplay of the self as we see our reflections in a monetized series of if-statements and calculations? Our making projects will address these questions.

Our Project’s Three Collaborative Modes of Work and their Synergies

We will continue our twice weekly co-working sessions. At every step we will also make the most of digital collaboration and telepresence tools (for instance, we already have a Slack channel). Our practice encompasses the following three modes of work:

1. **Interdisciplinary Confrontation:** In the pre-proposal phase we hurtled the vocabularies of our respective disciplines like particles in an accelerator. Lexical collisions shattered presuppositions and we had to reinvent our discourse to make our disciplinary ground temporarily common and auspiciously altered. We discussed the material and stratified underpinnings of our topic: integrated circuits, logic gates, and encapsulated scripts that have become substrata of the reified. In our upcoming collaborations, these material descriptions will be the basis for a practice of critical making where such circuits are recast as sensual experiences, moving beyond the graphical and textual modality.

2. **Critical making:** Machines are filters that determine feeds. They are intended to separate wheat from chaff, but they also produce a feed of information about the world tailored to the computed self and discarding the innumerable others. The design of any filter (and its value-ladenness) is detected when the process of its logic is sensed; a time-delay may be the space to wonder about the content of a silent automated negotiation; a periodic crepitation of hardware can be the basis for aurally inferred fragility in a disk drive. These sensory intimations produce the child-like inclination to know more. As a collective our making will introduce sensory channels within the ostensibly sealed patina of algorithmic results, not to merely posit the thickness of data, but to sense the presence of depth and provoke the desire for further unravelling.
(3.) Prototyping. Our material and software prototypes will home in on devices that draw out sensory symptoms of otherwise mute logic gates. The routine of offloading searches and memory to interfaces will be taxed with sensory reminders that things are happening, electrons are inconvenienced, and that Oz has a wizard (or at least the wizardry of a demiurge presently out of office). We want our version of booleans to be as navigable as an urban space, where predicted movements can be subtended by desire lines. With algorithmically generated tool paths, digital fabrication can give physical form to sorting, backtracking, and recursive processes. These forms will embody the completion of a loop. Our prototypes will explore this completion as it interfaces with human interaction. Materialized classifiers will become prompts for design exercises, with their imagined use fully transformed through human inquiry.

While the backgrounds of the project team are varied, we are brought together by a commitment to design, coding, and making.
4. Describe the members of the research team. (500 words)

Diversity is at the center of this work, as this project questions the ability of algorithms to handle the representation of minority views. As a project team, we represent the humanities, computing, architecture, design, music, and art -- five different colleges of the university. We include both senior and junior faculty, as well as graduate and undergraduate students.

**Sandvig** (Communication Studies and Information, PI year 1) is a computer programmer and social researcher specializing in studying the cultural implications of algorithmic filtering and curation. His methods have included political economy, policy analysis, and design probes of/about Facebook, Twitter and Google.

**Brueckner** (Art & Design, PI year 2) was a software engineer at Google and is now a designer, artist, and engineer whose practice is centered on the ethical and thoughtful design of new technologies. Her work examines the implications of popular algorithms and speculates on alternative futures.

**Newell** (Architecture) is a licensed architect whose work and research captures spaces and material effects, focusing on the development of atmospheres through the exploration of textures, volumes, and the effects of light or lack thereof. Her work and fabrication techniques utilize digital and material technologies.

**Calvo-Quirós** (American Culture, Latina/o Studies) is an industrial designer and cultural studies ethnographer who employs Chicana/o Latina/o feminist, queer de-colonial methodologies and spiritualities to engage racial, gender, and sensual discourse in America. His work has addressed cultural technologies, borderlands, economic exploitation, and racial segregation.

**Granzow** (Music) is a music researcher and digital instrument designer focusing on interfaces with embedded electronics. He leverages sound synthesis and digital fabrication to investigate musical acoustics and auditory perception.

**Madrigal** (Communication Studies) is a Ph.D. student studying race and digital media. Her research interests are focused on social media activism by undocumented youth, including hashtag anti-deportation campaigns.

**Marathe** (Information) is a Ph.D. student working in disability studies and science and technology studies. Her dissertation investigates the subjective experience of epileptic seizures and the mediation of this experience by medical technology and institutions.

**Students** will gain skills participating in a collaborative, very multidisciplinary research environment that encompasses both technical and humanistic processes, modeling a new kind of humanities graduate education. Non-technical students gain technical skills, while technical ones will be exposed to humanistic research.

**Graduate Students**, as full members of the collective, will be credited as members and co-creators in all products of this work where they contributed creative or research effort. As Ph.D. students within humanistic disciplines do not always come by opportunities for collective interdisciplinary research, this project provides a rare occasion for these students to engage in cooperative digital studies work. Additionally, these graduate students will benefit from the premium that is currently placed on technical skill and digital studies expertise in the humanities job market. In all, graduate students involved with this team will benefit from the mentorship, experience, intellectual development, skill development, and the final products of this project.

**Undergraduates** will be recruited and paid via the LSA Undergraduate Research Experience Program (UROP), which also provides mentoring scaffolding.
5. Describe the outcomes of your project. (500 words)

**Artwork.** Working as a collective, we will produce a series of standalone “pieces” with the intent that they will be disseminated both in arts and non-arts venues. A common thread tying together all the works will be the act of materializing, sonifying, transforming and/or enacting algorithms and their content to expose and reflect on a system that we do not control. This will involve the creation of new software, databases, models, or maps; physical fabrication; recordings and performances; or the construction of instruments and tools.

**Writing.** Each piece will be co-developed along with a work of short- or medium-length scholarly writing. Publications will target venues such as the *Journal of Digital Humanities; Computer-Human Interaction; Media-N; Computational Culture, Critical Inquiry and Representations,* and more. Simultaneously, we will also target prestigious arts venues for exhibitions and performances of the works. A primary goal of our collective is to meaningfully integrate scholarly publication with artistic exhibition and performance.

**One Example “piece.”** For example, in one piece we might apply Donath’s notion of “data portraiture” to Facebook’s News Feed algorithm. Facebook filters out 90% of status updates that it judges are not of interest to the user and hides them. A scholar might query Facebook to estimate what has been withheld for a given user and publish these results, but we can also present these findings in an exhibition prompting the questions, “Do you have a preferred filtering rule?” or your “dream filter?” We also might build upon Fuller’s concept of “flecks” of identity as the primary compositional element within new media. The Facebook news feed filters content based on the user’s behavior and inferred demographic. In our work, we will expose this filtering, which might be based on things like the user’s “detected” sexual orientation and current bank account balance. What is valued by users is often not valued by Facebook’s advertisers. Querying supply-side advertising exchanges will allow us to reveal the prices for advertising to people in the categories involved. This gives us a mechanism to value “dream” algorithms and compare them with Facebook’s typical operation.

**Other Outcomes.** In addition to producing a series of tangible “objects” (some virtual, some physical), artwork, writing, and/or deliverables, we will also strive to nurture each other’s intellectual and academic work; hold an interactive art exhibition to share the works with the U of M community; and plan for a concluding interdisciplinary conference on *Algorithms of Care* (see below). Note that this conference is not currently budgeted: If this proposal is successful, this conference may be possible via the dissemination funding mechanism of the Humanities Collaboratory or we will fundraise from other sources. Additional outcomes, such as our podcast program and workshop series, are explained below.

**Intellectual Outcomes.** The most important intended outcome of this project is intellectual: to provide both a new way to think about algorithms, and a model of collaborative cross-disciplinary digital humanistic scholarship that is useful to the researchers and practitioners in our respective fields.
6. Describe your project management plans. (500 words)

**Project Management.** The PIs of this project (Sandvig [year 1] and Brueckner [year 2]) will be responsible for overall management of the project, as well as other assigned outputs. In addition, other collaborators will share project management duties on the basis of expertise. The faculty on this project have a number of non-overlapping skills such as glass-forming, Web scraping, soldering, or acoustic design. If the output is centered on a faculty member’s expertise, that work will either be managed or performed by them. We thus anticipate that each “piece” (output) will have one designated primary faculty member responsible for that project chosen on the basis of expertise. PIs will also serve in this role for outputs where their expertise is central.

Project management will involve a serious ongoing discussion of how faculty and students manage experimental, collaborative projects and expectations, as well as thinking through tactics that faculty (especially untenured) and students might use to ensure that they receive credit for humanistic work that is not a traditional “output” in their field. The greatest risk is for traditional humanities scholars in book-centric fields. However, there are a small number of documented successes where e.g., Ph.D. students pioneer new formats in these fields. As our graduate students are from the humanities tradition, we will ensure that their work and outputs are documented and recognized, but the intellectual project here will never be free from risk as our goal is to pioneer new forms of collaboration and non-traditional humanistic products.

**Student Mentoring.** Our goal is to ensure that doctoral students are fully capable members of the collective—on par with the faculty—but also that they are well prepared to excel in a career of their choice. We hope that undergraduates see this employment as fundamentally educational developmental, supporting their future goals. Upon adding a student to our collective, we will conduct a mentoring inventory, asking them for:

- future career objectives
- skills they would like to learn
- literature they would like to engage (*)
- conferences they would like to attend (*)
- courses they would like to take
- individual research objectives relating to their own interests/work (*)
- tools necessary to complete their work

(*) – more applicable to doctoral students.

The timeline of the project was crafted with mentoring and the needs of students in mind. A primary mechanism for facilitating these mentoring goals will be to organize the collective around regular meetings that are similar to a scientific lab. These meetings should produce a co-learning environment where everyone jointly develops collaborative ideas and provides feedback on one another’s work. We will check in with students each term to ask if we are mentoring them in the most effective manner.

At the conclusion of the project we hope that all participants, including students, will be oriented as multidisciplinary scholars at the intersection their own chosen field and at least one other. We believe this will make students better positioned to seek jobs and will provide students additional portfolio items, work products, expertise, and visibility.
7. Describe documentation and assessment plans for your project. (500 words)

Success will involve creating something that we cannot yet know out of something that we cannot yet see. This collaboration will require us to produce outputs that are nontraditional to many of our specific disciplines yet will be informed by our combined strengths and interdisciplinary dialogue. Given the urgency in understanding the consequences of these pervasive algorithms, our collective will be successful if we provide new readings of how unseen algorithms work for multiple audiences.

**Podcasting as Process Documentation.** In addition to the traditional scholarly products, such as *humanistic scholarly writing*, and the traditional artistic products, such as *exhibitions*, we propose that the record of our work and conversations will be public. *Podcasts* will serve as both documentation and a forum to reach a wider audience. We aim to build our discourse not only within our collaborative but also through the invitation of key voices. The development of dynamic lexicon shared within our collaborative and with other engaged colleagues, critics, and students will demonstrate the evolution of our conversations and the reach of our audience. This will stand alongside traditional scholarly assessments of (e.g.,) the prestige of particular venues.

**Outcome Documentation for All Pieces.** We will start with small projects to develop methods of acquiring data and visualizing and sharing algorithms’ behaviors and consequences. All documentation will be brought together on a *Web site*. The investigation and uncovering of data sources and structures alone will itself necessitate a form of documentation involving both archive and active engagement. Part of the success of our inquiry lies in the pieces themselves being a novel form of documentation of our research process. At the same time, the pieces will, in an artistic manner, bring this information into a new form, that in their own lives will be documented and dispersed.

**Additional Criteria for Assessment.** Unlike some other targets for humanistic inquiry, the algorithms we are studying are constantly changing, and our works must aim to behave in the same manner, carrying forward and staying dynamic. The work must be evaluated for its ability to remain plastic and participatory, reflecting the current state of algorithmic existence. If successful, our works will foster an ability for the audience to better notice and understand the invisible algorithms that are inundating our everyday.

**Interactive and Reflexive Evaluation.** The creation of physical and experiential objects or settings will lead to an interactive exhibition, the success of which will based on its ability to permit a new read on algorithms, one that can be understood outside of datasets alone. We will conduct *observations* and *conversations* with the audience to assess what is understood, experienced, or even cognitively changed in response the works. To leverage our multidisciplinarity as a strength throughout the entire project, *reflexivity* is also key: We will constantly return to our interdisciplinary lexicon and evaluate our work through the lenses of varied disciplines and audiences. This will remain at the core of our discussions as we leap into this territory that demands new forms of knowledge.
8. Please provide a timeline for your project.

|----------------------|-----------------|--------------------------------------------------|
| Part B: Nodes/Neighborhoods of Knowledge Workshop Series | Nov. 2018 – Nov. 2020 | • How do we research the “invisible” algorithm?  
• Digital Matryoshkas: Mapping the [Un]thinkable  
• The Forgotten Trees of [Digital] Knowledge: Race, Gender, Citizenship…  
• Academic Terrains: The University as an Algorithm.  
• Digital Disobediences: Occupy Algorithms |
| Part C: Exhibiting and Displaying the Matrix | March. 2020 - May 2020 | • Exhibition |
| Part D: Prototyping: Envisioning an Algorithm(s) of Care | Jan. 2020 – May 2020 | • Delivery and Distribution |

**Part A. Familiarization: One and with Many. [Sept.– Oct. 2018]**

A central tribulation encountered by academics today is isolation, and the UM Humanities Collaboratory could be conceptualized as its antidote. Our team wants to move beyond the model of the traditional academic output or presentation and create a generative space for mutual collaboration and engagement--one based on mutual respect and valorization of differences in relation to our individual academic profiles. This novel space encourages deliverables that are not defined by a single form or product, but rather a plurality of modes of expression (e.g. writing, performance, social activism) and other forms of academic nurturing.

As part of familiarization, twice a month each member will present to the team, including main-concepts, intellectual tool boxes, intellectual genealogies, and anticipated trajectory. The organic, dynamic nature of this work urges us to recognize that the research is never “finished” but is still recognized as valuable. To construct novel processes in academia requires this knowledge of the benefits of collaboration in teamwork spaces.

**Part B. Nodes/Neighborhoods of Knowledge Series. [Nov. 2018 – Nov. 2020]**

(Continuous without interruption for the grant period)

Following the aforementioned ethos, our team’s plan for dissemination of knowledge will move beyond the traditional panel structure frequently used in university settings and embrace a hybrid model that recognizes the production of knowledge created within an interconnected network of interactions. In practice, these gatherings of scholars will combine generative workshops that include series of discussions around particular topics related to algorithms, processes of generating “products” and “artifacts,” conceptualizations of main components/ideas in articles, outlines of a performance pieces, and engagement with art objects. In addition, these open discussions will be combined with writing components such as free-writing, mind-mapping, and performance exercises. These generative workshops and gatherings, will be modelled as neighborhoods of knowledge, because they represent spaces where multiple realities co-exist and nurture those participating. They as city neighborhood are never static, but rather always transforming and adapting to the new inhabitants that live within their territories. They are foremost open spaces for faculty, students, staff, and other university inhabitants, and will recognize the diversity of objects that can potentially be generated in these spaces.
The following is a list of topics delimiting the terrains of each neighborhood. This set of deliverables is a plan for creating intentional spaces for collective knowledge. Because of the nature of this project, these workshops may be open to the public, they may be held at the university or as web-seminar video podcasts.

- How do we research the “invisible” algorithm?
  - Collaboration and interdisciplinarity
    Methodological challenges and possibilities of doing research on algorithms.
  - The Human in Digital “Humanities”
    What does “the Humanities” bring to the research of algorithms?
- Digital Matryoshkas: Mapping the [Un]thinkable
  - Divulging “algorithms” as multi-network terrains of existence and non-existence.
- The Forgotten Trees of [Digital] Knowledge: Race, Gender, Citizenship...
  - The Engineering and co-production of the terrains of social ignorance.
- Academic Terrains: The University as an Algorithm.
  - Critical Engagement with Universities algorithmic practices
- Digital Disobediences: Occupy Algorithms
  - Artists, activists, and scholars’ subversive engagement with the “invisible” matrix

**Part C. Exhibiting and Displaying the Matrix. [March. 2020]**

How do you display an algorithm? More specifically, how to you reveal a digital entity designed to be hidden and intangible, yet, has become so ubiquitous in our society? The idea behind this exhibition is to display the variety of virtual and physical algorithmic “objects” generated as part of the project. Because of the ‘virtual’ nature of this endeavor, the exhibition is envisioned as both a traditional gallery as well as a virtual, mobile and interactive space. The exhibition should have an interactive component so those attending can alter and share their own relationship with the “Matrix” of algorithms around their life.

**Part D. Prototyping: Envisioning an Algorithm(s) of Care. [January – May 2020]**

In this section of the project, our team will finalize the objects and choose a strategy of distribution beyond the exhibition. Possibilities are, but not limited to a collaborative anthology, a podcast, etc. The delivery also call for a National Conference, held at the University of Michigan, on Algorithms of Care, a international exploration on the development and implementation of care of a paradigm/model for algorithm development. The gathering will include academic, artists, community organizers, activist, the private sector and governmental agencies, as a collective effort.

**Note:** The additional outputs mentioned previously in the proposal will be developed continuously throughout the two years of the grant. For instance, the podcast series and Web site will be an evolving record of the project that grow continuously throughout the project.