THE GALLERY@CALIT2
EXHIBITION CATALOGUE N°3

SPECFLIC 2.6
AND PARTICLES OF INTEREST

AUGUST 6 TO
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Text and Interviews by Eduardo Navas

SPECFLIC 2.6 & PARTICLES OF INTEREST

INSTALLATIONS BY
ADRIENE JENIK
& *PARTICLE GROUP*

THIS PUBLICATION COMPLEMENTS THE JOINT EXHIBITION "SPECFLIC 2.6" BY UC SAN DIEGO VISUAL ARTS PROFESSOR ADRIENE JENIK, AND "PARTICLES OF INTEREST" BY *PARTICLE GROUP*, AN ART COLLECTIVE CONSISTING OF PRINCIPAL INVESTIGATORS RICARDO DOMINGUEZ (AN ASSISTANT PROFESSOR OF VISUAL ARTS AT UCSD, AFFILIATED WITH CALIT2) AND DIANE LUDIN, AS WELL AS PRINCIPAL RESEARCHERS NINA WAISMAN (INTERACTIVE SOUND INSTALLATION DESIGN) AND AMY SARA CARROLL, WITH A NUMBER OF OTHERS FLOWING IN AND OUT.

THE ART INSTALLATIONS ASK THE VIEWER TO CONSIDER A NOT-SO-DISTANT FUTURE IN WHICH INDIVIDUALS WILL BE INTIMATELY CONNECTED TO NETWORKS NOT ONLY THROUGH OUR COMPUTERS, BUT VIA NANOPARTICLES IN OR ON OUR OWN BODIES.

THE PUBLICATION INCLUDES A BRIEF ESSAY THAT CONTEXTUALIZES THE INSTALLATIONS, AND TWO INTERVIEWS THAT SHED LIGHT ON THE ARTISTS' CREATIVE DEVELOPMENT.

ON DISTRIBUTED SOCIAL CINEMA AND THE NANO MARKET

The installations "SPECFLIC 2.6" by Adriene Jenik, and "Particles of Interest" by *particle group*, on view at the gallery@calit2 from August 6 to October 3, 2008, ask the viewer to consider a not-so-distant future in which we will be intimately connected in networks not only through our computers, but also via nano-particles in and on our very own bodies. Both projects respond to the pervasive mediation of information that is redefining human understanding of the self, as well as the concept of history, knowledge, and the politics of culture.

Information access to networked archives of books and other forms of publication previously only available in print is becoming the main form of research as well as entertainment. Access to music and video via one's computer and phone as well as other hybrid devices has come to redefine human experience of media. From the iPhone to the Kindle, visual interfaces are making information access not only efficient in terms of time and money, but also in terms of spectacle. Accessibility usually consists of a combination of animation, video, image and text, informed in large part by the language of film and the literary novel.

Adriene Jenik, in her ongoing project SPECFLIC, currently in version 2.6, explores the evolution of film language as Distributive Social Cinema on multiple screens, from cell phone interfaces to large image projections. For the gallery@calit2, Jenik offers the public a speculative, futuristic reality that takes place in the year 2030, a time

when books exist as rare objects that can only be described by the InfoSpherian, who is equivalent to the Reference Desk Librarian.

In SPECFLIC 2.6 gallery visitors can use their cell phones to share their reflections on the future of the book and the library. They are also able to sit down on specially designed stools made out of actual books, and listen to the InfoSpherian tell stories of a time when people were still able to walk into the library aisles. As Jenik envisages the year 2030, the library can only be accessed by specialist book Stackers.

The InfoSpherian has three InfoFaces: FLO, CORE, and HYPERTIA. FLO greets visitors in English, French or Spanish, and assists in accessing collections; HYPERTIA helps with books and metadata, and guides visitors throughout the InfoSphere; and CORE constantly interrupts FLO and HYPERTIA to remind visitors about security measures: to make sure that all their papers and reading permissions are in compliance with "the Software Protection Authority." The InfoSpherian also directs the user to look at the projections on the side-walls, in which one can see the Stackers fulfilling book requests.

Inspired by the fictional writings of Jorge Luis Borges about the library, SPECFLIC 2.6 offers a plausible future when people's access to information will be thoroughly recorded to make sure that data is consumed at a "healthy level." Users' activities will be monitored to ensure that people are properly contributing to the

InfoSphere's "information flow." Jenik's installation reflects on a future that is dependent on a network with defined boundaries modeled after, or part of, the Internet.

In juxtaposition, "Particles of Interest" reflects on nanotechnology, which has no clear boundaries because it links humans to machines in ways that are beyond binary networks. Nanotechnology is an interdisciplinary field in which particles the size of one billionth of a meter are manipulated for diverse purposes. It is at the intersection of scientific research and corporate investment. Research on nanoparticles has led to the commercial development of products such as improved rubber tires, coating in glass that makes it easier to clean, as well as improved water filtration systems and sunscreen lotions, among many other innovations. In short, nanoparticles are already implemented in electronics, sporting goods, cosmetics and clothing, which means that they can be found in accessories people may use or wear as well as in lotions and cosmetics people are likely to use on their bodies.

Surprisingly, there has been little consideration of the health implications of nano-products, and to reflect on this, the *particle group* at the gallery@calit2 presents "Particles of Interest," in which visitors can learn about the growing concern with nanoparticles in public health. In the installation visitors are invited to view videos that comment on the production of nanotechnology and to interact with sculptural devices that respond to visitors' presence and movement with sounds derived from nano research.

"Particles of Interest" appropriates and combines cultural codes of the scientific laboratory as a "clean room" and the art gallery as a "white cube" to create an aesthetic experience that reconsiders the historical links of performance and minimal art to current forms of interactivity, in sharp contrast to the authoritative, privileged position of scientific research. Art, science and technology are questioned in "Particles of Interest" in the tradition of institutional critique, meaning that the *particle group* does research inside the institutions that support nanoscience, deliberately questioning nanotechnology and its links to the commercial marketplace.

SPECFLIC 2.6 and "Particles of Interest" share a critical focus on people's growing anxiety with dematerialization: Once the content of a book becomes part of a database, the possibilities for content re-presentation increase dramatically. Likewise, once one understands how to work with atoms, the possibilities for creating nanotechnology invisible to the naked eye, whether in lotions or microchips, also increases dramatically. Both installations offer reflexive criticism due to the fact that they are exhibited at Calit2, a research center where knowledge is constantly being redefined. The installations by Adriene Jenik and *particle group* ultimately pose important questions about the complexities of representation in art, science and technology.

IMAGE CREDITS:
PINAR ISTEK

INSTALLATION DETAIL:
INFOSPHERIAN GREETING VISITORS

SPECFLIC 2.6
INTERVIEW WITH
ADRIENE JENIK

Adriene Jenik combines literature, cinema and performance to create works under the umbrella of Distributed Social Cinema. For Jenik, this term means that the language of cinema has been moving outside of the conventional movie screens on to different media devices, which today include, the portable computer, GPS locators, as well as cellphones. Earlier in her career, Jenik worked with video and performance, and eventually she produced CD-Roms, such as "Mauve Desert: A CD-ROM Translation" (1992-1997). Jenik's practice took a particular shift towards network culture when the Internet became a space in which she could bring together her interests in film, literature, and performance. "Desktop Theater: Internet Street Theater" (1997-2002) was a virtual performance which took place in an online space. It was based on Samuel Becket's play Waiting for Godot. In line with these works, SPECFLIC 2.6 is the result of Jenik's interest in the relation of networked culture to film, literature and performance. The installation, then, is also another shift in Jenik's interest in the expanded field of storytelling. In the following interview, Jenik shares the influences and aesthetical concerns that inform SPECFLIC 2.6

EDUARDO NAVAS: You describe your ongoing SPECFLIC project, currently in version 2.6, as "Distributed Social Cinema." Given that your installation takes on so many aspects of contemporary media, could you elaborate on how you arrived at the parameters at play around this concept?

ADRIENE JENIK: SPECFLIC was initially inspired by the recognition that cinema was moving beyond a single fixed image at an expected scale to one of multiple co-existent screens with extreme shifts in scale. I was seeing video on miniature screens, as well as gigantic megascreens, and seeing these screens move about in space and wondering what types of stories could take advantage of these formal and technological shifts. I've long been involved in thinking through layered story structures and at the beginning of SPECFLIC, I could "see" a diagram of the project imprinted on the inside of my eyelids. That original retinal image burn has since been honed and shaped in relation to the needs of the story and the responses of the audience and performers.

The SPECFLIC 2.6 installation takes excerpts from material that was created for SPECFLIC 2.0, and follows on the heels of SPECFLIC 2.5, which was commissioned by Betti-Sue Hertz and presented at the San Diego Museum of Art in Spring of 2008. For SPECFLIC 2.5, I stripped away all of the live, interactive aspects of the piece, and instead, emphasized aspects of the story that might have been more in the background of the live event. This type of "versioning" is something that is in evidence in software creation, but has also become a method for developing an art practice that can expand and embrace new research and technologies. Distributed Social Cinema is a form that takes into account the importance (for me) of the public audience for a film. As cinema-going practice

becomes "home entertainment," I'm interested in what is at stake in cinema as a public meeting space. At the same time, I'm playing with the intimacy of the very small screen, the ways in which having part of a story delivered into someone's pocket adds a layer of meaning in its form of delivery. The SPECFLIC 2.5 installation was an attempt to consolidate some of these aspects of distributed attention and "voice."

Granted the opportunity for networked interaction within the gallery@calit2, for SPECFLIC 2.6 I have rethought the installation to develop in concert with audience contributions. So the project is very much evolving in response to what I learn from each previous iteration as well as the opportunities afforded by the space, encounter with the audience, and technological framework.

SPECFLIC 2.0 relies on science fiction to open a space for critical reflection. Would you share some of your influences?

Of course! The overall SPECFLIC project emerged as a result of an extended period of time where I had been gorging myself on works in the genre of "speculative fiction." These works are generally understood to be more concerned with the "near future" or a future imaginable within the reader's lifetime. They are less fantasy or prophesy than speculation. I sort of stumbled into this genre by way of the beautiful and frightening book "Parable of the Sower" by the recently departed Southern California writer Octavia Butler (1947-2006). This book challenged me to try and

"tease out the threads" from my own present, imagining the future impact on even one or two generations of current trends I observed from my particular vantage point as a creative technology researcher at a top public research institution. Ever since reading the book when it was first published in 1995, I have been taken over by its poetics, scenes and storylines.

The work of Kim Stanley Robinson (in particular his early Southern California trilogy) provided encouraging notes of familiarity after I began crafting my own image of 2030 in Southern California. Canadian writers Nalo Hopkinson and Margaret Atwood, and British writer Daren King, have all inspired different aspects of this work. In particular, I have joined them in imagining (for better or worse) the future shifts in gender, class and race relations, which often form the basis of their stories. Chip (Samuel) Delaney's enigmatic and profoundly kakographic novel Dhalgren, has continued to excite me with its parallel cityscape that exists as both a bubble and a hole.

I'm also deeply indebted to the Speculative Cinema enacted in Jean Luc Godard's 1965 film Alphaville. I continue to delight in the ways that filmmaking practice can be used to create an imaginary future. Godard manages to create his vision of Alphaville within the Paris of the present and without special props, scenic design, costumes or effects, but solely through strategic use of the visual frame coupled with scripted language, precise gestures and thoughtful use of location shooting. In every project, the writing

of Brecht, Calvino, Borges and Stein seems to bubble up from the depths of my consciousness to assert its power anew.

Finally, I'm influenced by the education and research institution I inhabit. Entering the labs on campus and encountering the research of my peers can sometimes feel as if I am falling through a rabbit hole and emerging on the other side of the looking glass. SPECFLIC emerged from an overwhelming desire to try and understand where all of these research practices might lead. What types of stories emerge in a world where humans no longer omit odor? Where they control video games with brainwaves? Where diamonds are manufactured at will?

One thing that comes to mind when I viewed SPECFLIC at the SD Museum of Art is the relationship of content and form. How do you think interfaces and devices used to access information are changing the way people think about knowledge? Do you see any similarities between music and text in this regard, meaning the dematerialization of the LP to the CD on to the MP3, and the book to the Kindle and other similar devices? In this sense it could be argued that music may be currently more successful than the text, if one considers success the amount of downloads of music files versus electronic books. Why do you think this might be the case?

I'm really hoping that this "collapsing" of content and form will result in this type of question

about our interface to knowledge. There exists, within the flow of the network, all kinds of potentials and possibilities for expanded communication, experimentation and exchange. But contained within the technological framework that underlies this expansive, seemingly unbound flow is a level of exacting and precise control. The event itself is a public enactment of these dual tensions inherent in the move to an information society.

In terms of knowledge access, SPECFLIC 2.0 , 2.5 and 2.6 offer up a near future that is distinct from our near past in large part as a result of this shift in information access and knowledge acquisition. The InfoSpherian script and the images that play along the edges in the Library Story introduce a kind of nostalgia for the present. The serendipity offered within library stacks is both similar to, yet qualitatively different from losing oneself in a path of weblinks. In the stacks, color and size can attract one's attention. And a misplaced item might end up on one's stack. I parody my students' incredulity at having to "read a whole book to understand its contents." By having the story play out in a combination of large public displays and personal laptops and cell phones, I hope to create a space in which our everyday uses of these devices is denaturalized, so we can critically and publicly consider our own complicity in the dominance of the targeted search.

Regarding the similarities and differences between the digital production and distribution

IMAGE CREDITS:
PINAR ISTEK

INSTALLATION WIDE VIEW

formats of music and text, I was thinking of this when I imagined the near future of the SPEC-FLIC 2.0 series. This is apparent in several instances, the first of which is that I do not believe that books will disappear. Rather, books as we know them now become the property of a niche category of people, similar to the function of vinyl now. There is an ongoing market and appreciation for vinyl, not just among collectors of old records, but music publishers regularly release special and valuable vinyl recordings. Sure, they are a bit of an anachronism, but they still exist and have not been completely wiped out and in some cases are even thriving.

In addition, the relationship between digital cultures and oral cultures has long been of interest to me. I observe in text chat a move away from strict textual literacy and toward a type of emerging "orality". I'm interested in the increased sense of presence and "immediacy" afforded by an oral/aural communication system. In terms of the smooth transition to digital formats and distribution for music, there is also the issue of loss of audio fidelity vs. loss of visual resolution in the move to .mp3 (for sound) or computer screen (for text). We seem to have a much broader tolerance (audiophiles aside!) for a lesser quality in audio. Small shifts in sonic acuity do not affect our ability to concentrate on what we are hearing, nor do they instigate headaches. Furthermore, we can close our eyes when we listen to music or sound and the device itself disappears. When reading on the computer screen, the interface is always there in the foreground.

THE ENTIRE SPECFLIC PROJECT IS MEANT TO ENCOURAGE PUBLIC REFLECTION AND DISCUSSION AND PERHAPS EVEN HEATED DEBATE ABOUT WHAT WE THINK ABOUT THE CULTURAL CHANGES INSTIGATED BY THE MOVE FROM ANALOG (MATERIAL) TO DIGITAL (INFORMATION/DATA). I DESIGN THE PROJECTS WITH CROSS-GENERATIONAL AUDIENCES IN MIND, SO THAT DIFFERENT IDEAS AND ATTITUDES TOWARD THESE CHANGES CAN BE ARTICULATED NOT JUST BY MYSELF, BUT BY THOSE WHO ENCOUNTER AND PARTICIPATE IN THE WORK.

In your installation, when the InfoSpherian comments that people read a whole book in the past, you also point to the idea of knowledge in terms of wholes vs. fragments. This moment of your installation exposed a personal struggle: I have often found myself focusing on specific chapters of books vs. the whole book for research purposes, and I often invest in the entire book at a later point, if possible. But even if I am not able to go back to the entire book, the fact that I physically come to access knowledge through a physical object does affect my relationship to accessing information in pieces. With data/information access via a network, I find that this sense is somewhat lost—dare I say, the guilt of seeing how much one has not accessed physically is no longer there, and the concept of rigor in research may be somewhat redefined. Am I wrong? Or do you think that this particularity will come to affect research at all levels for scholars, cultural writers and artists? If so, how?

Well, this is, of course, a core question regarding this shift from boundaried physical objects to networked entities. I continue to return to the importance of context (social, historical, philosophical) for grounding information or ideas, and the ways in which the 'book object' (through not just additional chapters, but the organizing elements including the table of contents, index, footnotes, bibliography, etc.) give us a sense of a greater world of the book. This is a turn that not just evolves out of but reflects the values of the development of the information society. That shift, critically historicized by N. Katherine Hayles in her book How We Became Post-Human, hints at the ways in which the removal of matter from context to enable it to be treated as "data" or information allows for all kinds of engineering marvels. We are now experiencing, some 50-plus years after that shift, what a removal of information from its context might mean for society, scholarship, etc.

I will leave the effect on the concept of rigor in research to others (perhaps even yourself!). But I would hope that future versions of the book (some of which can be glimpsed in the experiments and prototypes being developed by The Institute for the Future of the Book through incorporating a sense of the reading "commons" might involve even more "rigor." I do notice my students are no longer as fixated on knowing the author or originator of a text or creator of an artwork. Perhaps this signals a move away from a sense of individual creation, and a movement toward an understanding of ideas arising from within a larger mix of voices?

But I continue to be occupied with the physical boundary of the book as an important signifier of time and space. The physical book object contains not just words and meaning, but an experience and even an historical marker for each reader. When I look at a book in my library, I remember a time when I read it, sometimes even the chair I sat in and the beverage I sipped. If I turn its pages, I see my notes, stains, creases;

*INSTALLATION VIEW
SAN DIEGO MUSEUM OF ART*

THERE EXISTS, WITHIN THE FLOW OF THE NETWORK, ALL

KINDS OF POTENTIALS AND POSSIBILITIES FOR EXPANDED

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CONTAINED WITHIN THE TECHNOLOGICAL FRAMEWORK THAT

UNDERLIES THIS EXPANSIVE, SEEMINGLY UNBOUND FLOW IS A

LEVEL OF EXACTING AND PRECISE CONTROL. THE EVENT ITSELF

IS A PUBLIC ENACTMENT OF THESE DUAL TENSIONS INHERENT

IN THE MOVE TO AN INFORMATION SOCIETY.

there is a visual memory of certain paragraphs or passages. When all of this shifts to the free flow of the InfoSphere; when e-books overtake physical books with their economics of storage, publishing and distribution; how do we "see" or reflect on what we have read and experienced? How do we continue to access that experience again and again with IP licenses set to timers? The whole point of the SPECFLIC project is that we really need a larger public to be wrestling with these questions – not just librarians or database programmers.

What's exciting is to consider the relatively short history of the book itself and look at earlier versions of written communication (the scroll, the stone tablet) and understand the book object as we know it as just a point in a larger continuum of human communication.

At one point in your installation, the InfoSpherian – which you explain is equivalent to the desk librarian – shows a book to the public. She describes the book as an object that in the year 2030 would be unfamiliar to the average visitor. The way that the InfoSpherian holds the book as she describes it reminds me of the constant preoccupation of the work of art as fetish, and the interest in its dematerialization. How is SPECFLIC reflecting on the ongoing changes in contemporary art practice, especially with the pervasiveness of information access today?

First, a note about the InfoSpherian: the character of the InfoSpherian is inspired by the position and placement of the Reference Desk Librarian. If you are in a library and have a question, you know you can go to the desk librarian and get help. In the live SPECFLIC 2.0 event, this was an important function of the character, as the audience could request information or particular books from the InfoSpherian, and these queries and her improvised responses contributed to the overall depth of the narrative performance.

Since SPECFLIC 2.5 and 2.6 were conceived as installations without this important layer of audience interaction, certain aspects of the InfoSpherian character were emphasized, and others de-emphasized or completely omitted. In the live 2.0 event, the character cycles through three distinct character "voices." Each voice (and its accompanying changes in visual appearance and gesture) represented a different role that I see emerging as central to libraries as they grapple with their evolving social functions. These roles are a) interface to a material archive; b) Public Access Information filtering, licensing and enforcement (as information continues to grow exponentially); and c) Data Navigation Specialists, who will both assist the public and work behind the scenes as Information Scientists to conceptualize new ways of organizing and providing access to data.

So, to your question! The entire SPECFLIC project is meant to encourage public reflection and discussion and perhaps even heated debate about what we think about the cultural changes instigated by the move from analog (material) to

digital (information/data). I design the projects with cross-generational audiences in mind, so that different ideas and attitudes toward these changes can be articulated not just by myself, but by those who encounter and participate in the work.

So the InfoSpherian in SPECFLIC 2.5 and 2.6 enacts a sort of comic and (for some) dystopic future where the library and the book have almost completely de-materialized into the InfoSphere.

What remains is the "book object," which as you note in your question takes on the form of a fetish; its objectness takes on increased value in certain contexts even as it loses its value completely in others. In the installation, I provide a platform for reflection in the form of book "stools" composed of books discarded by libraries. They are sculptures in their own right, constructed and positioned to afford stable, comfortable seating, even as they produce a slight discomfort among those of us who retain our attachment to the book object.

Larger issues of what remains to be seen or preserved are key questions (even dilemmas) for those of us engaged in producing, exhibiting and teaching art that is removed from a material context. I hope the project reflects my sense of historical flow – or the ways in which objects change their meaning and purpose over time. Someone might make a pot to hold water, or weave a basket to hold medicinal herbs, and later those objects might be encased in glass for us to behold as objects of great symmetry and

craft. Discarded clothes become exalted quilts. Vacuum cleaners become sculpture. Books become stools. All of these objects retain residue of the past, but when bits become something else, there is no residue.

So, in a way, SPECFLIC is speculating not only about what happens in the future, but what happens to our past.

IMAGE CREDITS:
PINAR ISTEK

INSTALLATION DETAIL

PARTICLES OF INTEREST
INTERVIEW WITH
PARTICLE GROUP

particle group is a collective consisting of Principal Investigators Ricardo Dominguez and Diane Ludin, as well as Principal Researchers Nina Waisman and Amy Sara Carroll, with a number of others flowing in and out. The collective draws from the hard and social sciences to develop installations that are critically engaged with the politics of science and its market. Their aim with the installation "Particles of Interest" is to shed light on the lack of regulation of nanoparticles in consumer goods. In the following interview the *particle group* shares its views on the current state of nanotechnology production, as well as a possible future that we may all be facing, in which nanomachines just might make difficult decisions for us.

EDUARDO NAVAS: How does collaboration take place within the *particle group*? You describe members' roles as Investigators and Researchers. Could you explain how these terms are relevant to each collaborator's contribution to the project?

PARTICLE GROUP: We mimic the structure of a research and development model for a university laboratory. By laboratory we mean a group of individuals who pursue conceptual investigations determined by a chronology of work that the Investigators have determined. Here, though, it should be noted that already we morph the template as Principal Investigators become Principle Investigators, homonymically signalling our investments in science's narrative "engines of creation," the aesthetic/ized practices and/or "naturalized" conceptualisms inherent in research, investigation, discovery and data transfer within scientific communities' "normalized" articulations of self.

Generally the researchers participate from the beginning stages of materializing/performing/ manifesting the work that the collective *particle group* eventually presents in counter/ public spheres as varied as the art museum, the mall, and/or the scientific meeting. Researchers work in tandem with Investigators to develop their interpretations of the subject matter under investigation, augmentation, and/ or erasure. So each time we are invited (or invite ourselves) to stage an iteration of our research, we meet and discuss via Skype or email what our intentions should be for the "performance." To date we have had a different crew of researchers for each presentation so inherent in particle group's particularization and particle-ization is a revolving/open door policy toward creative maelstroming. This project was produced in large part by Calit2, and so it made aesthetic sense to us to approach the project as would-be art(is)cientists and to stage a series of p(our)-us epistemologies (on the testbeds of these strange viroids of art and science) and not to see the gesture of art and science as two bunkers at war – but as possible thought-scapes of concern under the sign of "nano-ethics and nano-constructions." Each one as blind as the other, each one helping the other over the rocking shoals of Particle Capitalism(s).

In response to your interest in "each collaborator's contribution"… We begin shaping each of our presentations by engaging in a series of group conversations. This generates a kind of "group mind" regarding the key ideas guiding that presentation. We then leave researchers free to move from these common concerns to authoring, through medium-specific research/experience, which threads these ideas into play. In this phase of development, each researcher authors, builds, programs, designs, records, writes, shoots or appropriates material as s/he sees fit, according to his/her particular skills/facilities/whims. Thus the iPod nano videos were authored by members of the group focused on video and textual interplay, on visual and concrete poetries; the interactive installation was created by members more attuned to sonic/bodily interactions and programming. Yet these works draw on particulate matter previously generated by other members of the group, as well as material newly discovered by the researchers out on the web, in scientific journals, in popular media, in dreamscapes, and waking, Otherworldly out-of-body experiments. In this way, each particular work bears the traces of both a group and individual (political) un/consciousness. Following the traditions of laboratory research and post-contemporary cultural production, we build on prior investigations through appropriation, critical re-framing and outright speculation.
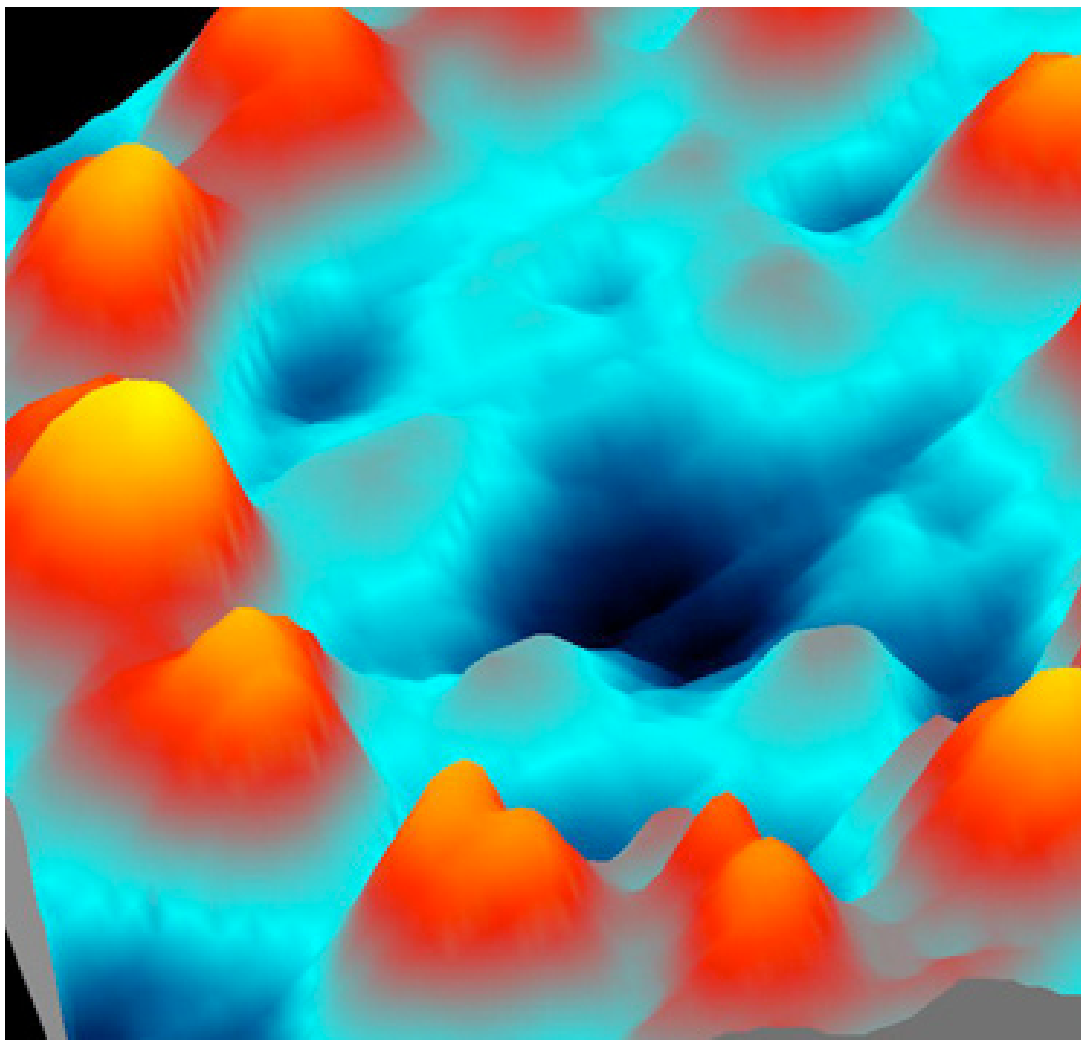
THE CONTRASTS/UNITIES OF ART AND SCIENCE ARE ALSO OF CORE INTEREST FOR US. SOME OF OUR QUESTIONS COULD BE NOTED AS SUCH: WHY IS THE TYPE OF REALITY A SCIENTIFIC RESEARCHER CREATES THROUGH EMPIRIC METHOD GIVEN MORE VALUE? BECAUSE IT IS REPRODUCIBLE AND THEREFORE CLOSER TO A COMMODIFIABLE PRODUCT? IT WOULD SEEM THAT WAY.
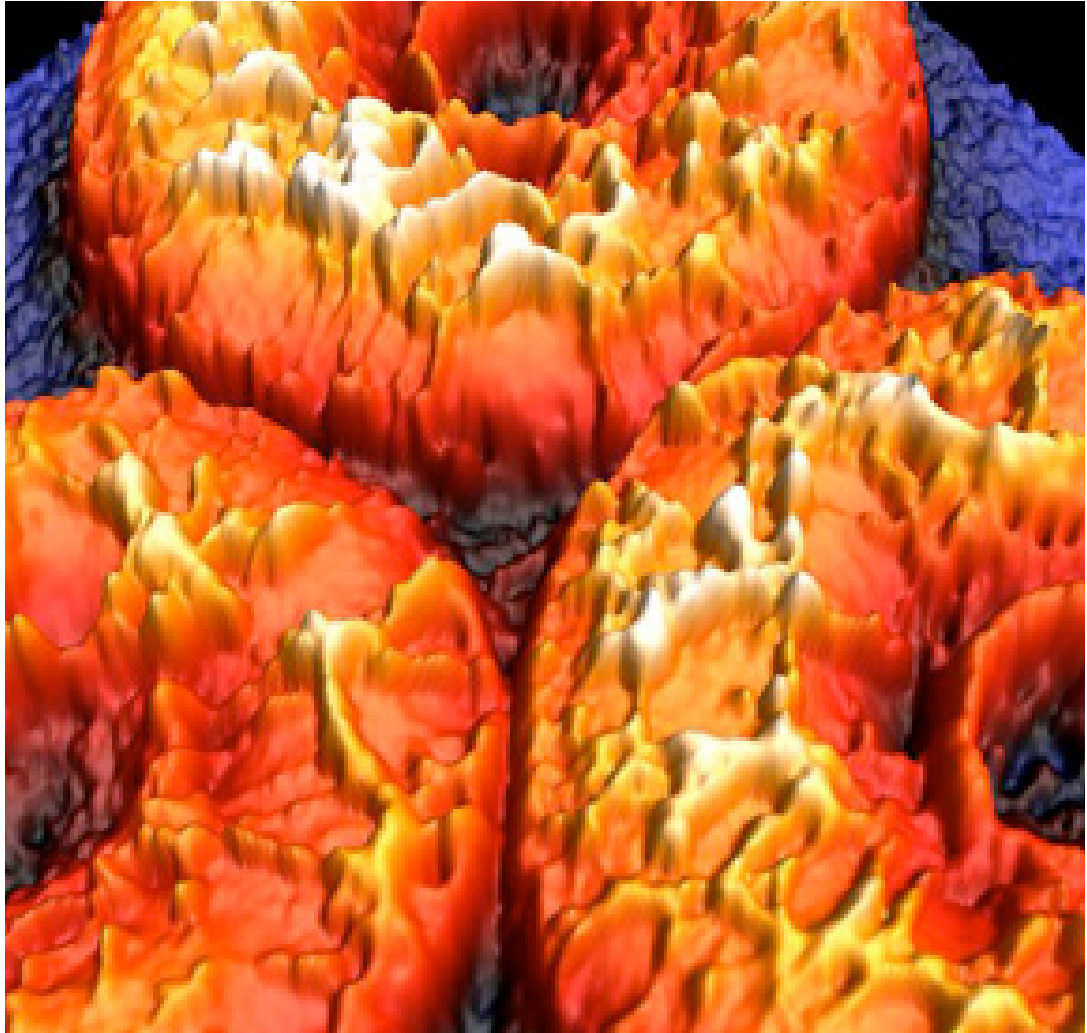
Your installation appears as a conscious effort to balance out aesthetics in the tradition of minimal art and the performance often linked to it historically, while also presenting questions about the responsibility of researchers developing nanotechnology. Could you elaborate on your decisions in trying to reflect on an art movement and a scientific field of research?

We are in an age when scientific inquiry connotes a relatively less questioned authority than that of an artist. It is that liminality in what can be titled a knowledge industry of artistic production and the knowledge industry of scientific research/inquiry that we are exploring in the particle group's work. Since we have so much lateral access to the scientific research that feeds industrial development, we decided to apply artful techniques to the scientific representation that is publicly available. We also apply simple, scientific principles to that same media collection and role play with it to make it more human somehow – a kind of performance-equals-empirical-expression approach. By recombining the rational and the impulsive we come up with situations and media designed to reawaken the question of what we know about what we are surrounded by, buy, use, live in, etc. The commodification of new technology has become a system akin to corporate branding and identity construction for objects and ideas. The way in which our sense of material awareness is questioned needs to be redrawn and we are 'sketching out frames' to make that possible.

Regarding your specific question about the place of minimalism in this piece, each iteration of this project is, as much as possible, formally and structurally site-specific. This version of the piece functions as an access route to Calit2's gallery, so we became interested in the pedestal and the host of scripts it serves in the gallery or museum. Pedestals are used to elevate that which the institution has designated to be of value; they are used practically to create a viewer choreography through the gallery space that casts the viewer in the role of participant-observer; they set off that which is presented from the mundane; they make what is proffered untouchable, and thus unknowable in many ways. And here in the Nano3 labs at Calit2, we find the laboratory cousin of the pedestal – the clean white (or aluminum) counter, whose contents may only be intimately accessed by professionals. Visitors to Calit2's nanolabs are positioned to watch skilled nanolab professionals perform a range of interactions with nanoparticles. In our piece, we wanted our "unskilled" visitors to perform this meeting with the untouchable in a different way. We wanted to bring the clean room and the gallery pedestal together, to see what they might have to say to each other. Doing so puts into play some of the forms and concerns of minimalism.
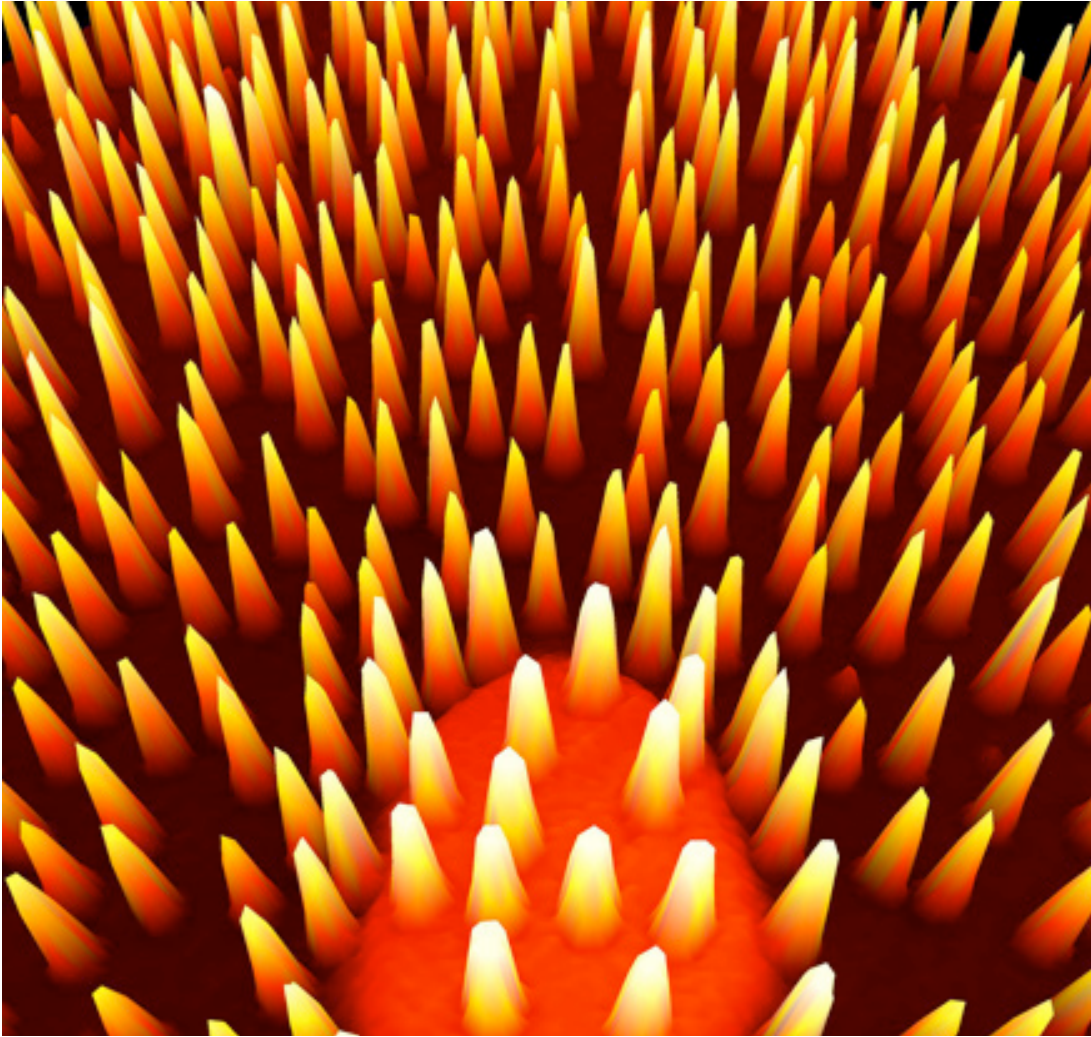
We also wanted to tweak the pedestal's scripts by crossing them with some of the scripts of control and manipulation we feel are driving the nanotech industry. The incantation of newly coined nanoparticle names (nano diamonds,
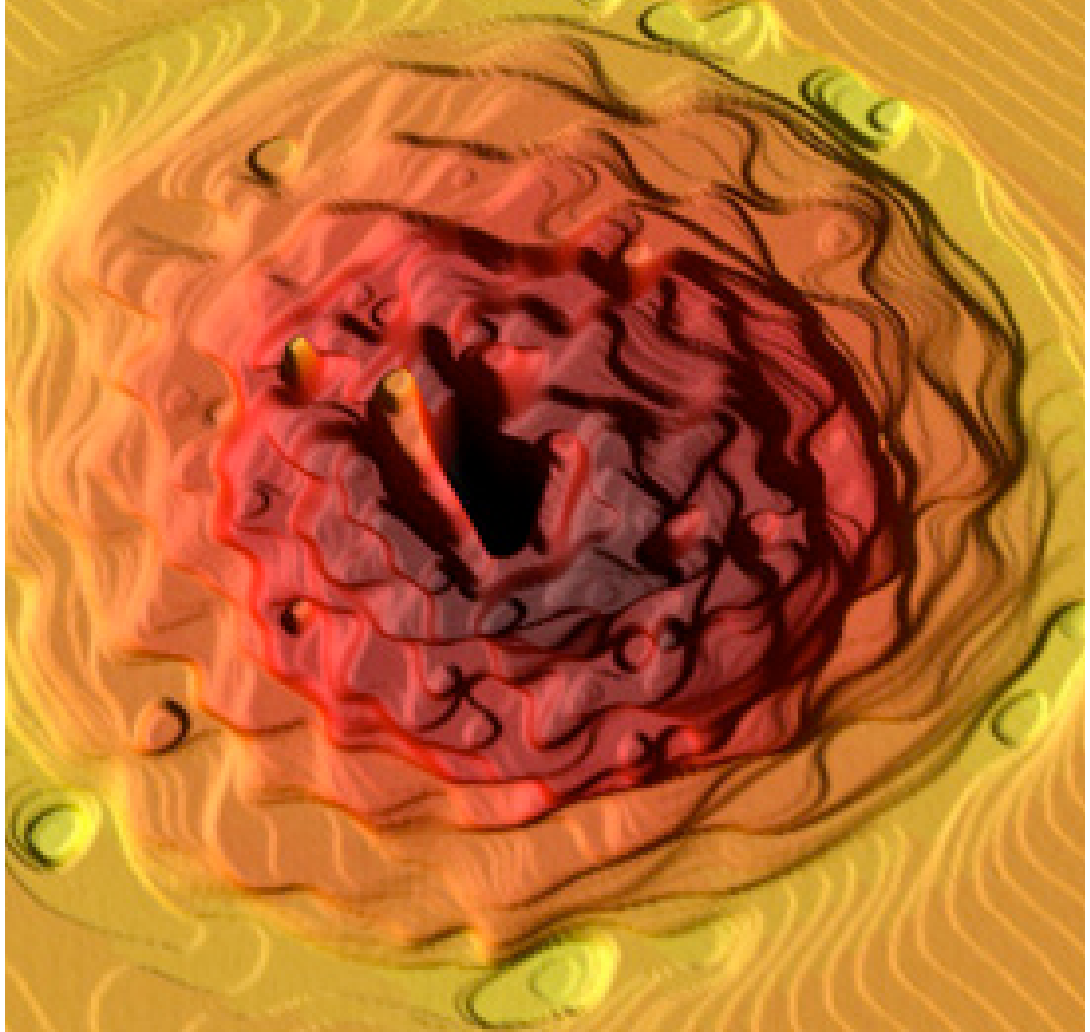
IMAGE CREDITS:
BY JODY (SEUNG YUN) YANG/UNIVERSITY OF TORONTO

12 BROMINE ATOMS, ARRANGED IN A CIRCLE THROUGH
MOLECULAR SELF-ASSEMBLY.

THE SURFACE OF HUMAN RED BLOOD CELLS AFTER TREATMENT
WITH PHYLLOMELITTIN, AN ANTIBIOTIC ISOLATED FROM THE
SKIN OF THE MONKEY FROG.

IMAGE CREDITS:
*BY THORSTEN DZIOMBA/PHYSIKALISCH-TECHNISCHE
BUNDESANSTALT*

*QUANTUM DOTS 15 NANOMETERS HIGH AND 70
NANOMETERS IN DIAMETER.*

AN IMAGE OF A PRECISELY CRAFTED CRATER ON A
SAPPHIRE SUBSTRATE.

sublimed fullerenes, electro-exploded gold nanopowders, etc.) in hypnotic, seductive or chirpy voices, is not unlike the outside world's steady-feed of cleverly written sonic advertising, garnering attention by promising control over wealth, happiness and the next big problems. The voices we employed might lure one towards the pedestals from which they emerge, while blasts of air spewed from these same sound sources might move visitors into a more self-consciously manipulated state. The desire to know the "truth" that a pedestal promises may, in this installation, lead visitors to focus on the bodily scripting required to make the pedestal talk. The resulting sound – a mix of air circulation effects and propagandistic texts (from all sides of the nano-battles) – penetrates the body invisibly, as do the nanoparticles currently buried in transparent sunblocks, clothing, baby lotions, etc. The more time you spend in the piece, or with nanoproducts, the more your body is host to a range of interactions run by unseen, speculative scripts.

We hope that the more time you spend with the piece, the more you might realize the fallacies of the optic. As the adage goes, "there's more than meets the eye." While a certain "minimalism" might be measured vis-à-vis visual economies of re/presentation, in the larger sense/s, there is nothing minimal or minimalistic about this iteration of the *particle group*. To the contrary, the aural/oral/the textual borders on the excessive or ultra-baroque here. The participant-observer is bombarded with constelling and im/explod-

ing languages – be it in the guise of the above-mentioned persuasive re-scripting of a "steady-feed" of "sonic advertising," in the streaming poetics of the illuminated nanoscripts, or in the the nano-janitor's eerily accented improvisation of science's racialized borderization. The ideal interlocutor is able to codeswitch between the pedestals-turned-towers-of-babble and the project's other assemblages, is able to navigate the variety of aural/oral/textual (versus purely focal) ranges conjured up/against/and through the false vision of a cleanroom's *minimalist* aesthetics (and politics). But, the overall ambience is meant to be one of bombardment, surround-sound, sensory overload, replicated in and through the sprawling parallel tracks of *particles of interest*'s concomitant website.

Here's another way to tell the story, brought to you vis-à-vis popular culture and the ancillary investigations of our "smallest" researcher Dr. Ze: in Dr. Seuss's beloved classic Horton Hears a Who, the protagonist must convince those around him that "people are people no matter how small," that there are teeming worlds that ostensibly are illegible or, in the best-case scenario, read as *invisible.* This is a story about the "nano," about the excessively miniature, about the convenience of a minimalist dismissal of that which resides in and beyond "normal" focal ranges. Similarly, *particle group* seeks to unpack expansive vistas often quarantined within the hallowed laboratories of nanotechnological innovation, to point out the simple logic of cause-and-effect, the reverberating echoes of

experimentation (positive and negative) on even the tiniest of scales. Such a project demands an innovative relationship to the baroque, one that evokes more than meets the eye/I: a de/construction of the pedestal in the hopes of interrupting business-as-usual, a sonic séance that channels the spooks outside and inside the room (as well as those residing in the door-jamb—the better to withstand the magnitude of the quakes, quirks, and quantum leaps and bounds to come!), scrolling de/compositions that seek to "dirty" clean images.

Your text "Particle Philosophy" explains that artists and responsible citizens who become aware of the implications of nanotechnology need not understand everything with the same intimacy that a scientist dedicated to the field would, but that "while, it may be possible to fully perform within the scientific networks that float in the inaccessible atmosphere of scientific objectivity, one possible zone for intervention and re-reading by artists and activists is the space between system-based biology and the networks that Clone Capitalism is now interlocking into the old E-Capitalism database, sharing tools in order to create new speculation bubbles."

The contrasts/unities of art and science are also of core interest for us. Some of our questions could be noted as such: why is the type of reality a scientific researcher creates through empiric method given more value? Because it is reproducible and therefore closer to a com-modifiable product? It would seem that way. Our present day technological development has been the result of artistic, scientific and engineering research and investigation. What happens to our understanding of each when we assume an empiricism that falls within the time-frame of performance and/or transmission (performance, inspiration, chance occurrence and the first stage of a discovery procedure)? How close can we get to that which we are given to accept as representations of reality, when it is being redefined by the likes of training that is scientific and not within the realm of (post) humanistic traditions? What can the culturally sanctioned artistic frame/situation of emerging/exclusive scientific research and method bring to multiple counter/publics? One possible staging area is around the shared conditions that art and science find themselves in – the distributed condition of the post-contemporary; it is there that small possibilities may come to the foreground in order to disturb and re-frame the nature of "research" both within Particle Capitalism, science/art and the nano-scales with(out) – what can be imagined as "research" not completely bound or better yet unbound by the Scylla and Charybdis of post-contemporary "venture science" and for-profit "research." As we stated before, are there not other "engines of creation" possible that are at play with the pulsing scales of an impossible art(is)cience and its reverse?

WE ARE IN AN AGE WHEN SCIENTIFIC INQUIRY CONNOTES A RELATIVELY LESS QUESTIONED AUTHORITY THAN THAT OF AN ARTIST. IT IS THAT LIMINALITY IN WHAT CAN BE TITLED A KNOWLEDGE INDUSTRY OF ARTISTIC PRODUCTION AND THE KNOWLEDGE INDUSTRY OF SCIENTIFIC RESEARCH/INQUIRY THAT WE ARE EXPLORING IN THE PARTICLE GROUP'S WORK.

SINCE WE HAVE SO MUCH LATERAL ACCESS TO THE SCIENTIFIC RESEARCH THAT FEEDS INDUSTRIAL DEVELOPMENT, WE DECIDED TO APPLY ARTFUL TECHNIQUES TO THE SCIENTIFIC REPRESENTATION THAT IS PUBLICLY AVAILABLE.

INSTALLATION DETAIL:
NANOPARTICLE VIDEOS DISPLAYED ON APPLE IPOD NANOS

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Could you explain how this can be possible when it is access, understanding and implementation of knowledge that allows the scientists to have power? What are some of the effective ways in which an artist or activist who does not have mastery of scientific language can have power within the system-based biology? How can one effectively contribute or question a discourse in which one may be accused of misunderstanding the issues at hand due to the limitations of knowledge? Could you elaborate on how Particles of Interest is related to this conundrum?

It is important to understand that science itself is bound to issues of representation, discourse, economic drives and definitions, to social distinctions, and that it is not somehow completely unbound from these frames by its "objectivity" and "testability." Every form of knowledge has its limits and fault lines, some of which can only be outlined by those who lack complete "mastery" of its epistemological categories. As artists and activists, we are not trying to shift the process of scientific production, but to ask what is not being tested and why? And, how are the processes being narrated? In our case, why is nano-toxicology receiving so little funding on a national and global scale? Why are so many everyday products ranging from cosmetics to tennis balls being brought to market with little to no long-term testing of their effects on the human body? Just recently the BBC reported on a U.K. report that links an asbestos trajectory to the nanotubes that are being used in many products without any warnings attached.

"Carbon nanotubes, the poster child of the burgeoning nanotechnology industry, could trigger diseases similar to those caused by asbestos, a study suggests. Specific lengths of the tiny fibers were found to cause 'asbestos-like' inflammation and lesions in mice. Use of asbestos triggered a pandemic of lung disease in the 20th Century."

http://news.bbc.co.uk/2/hi/science/nature/7408705.stm

A number of science-studies scholars, including Chela Sandoval and Donna Haraway, have consistently diagrammed the possibility of reframing science from the "technologies that see from below." This form of intervention opens this empirical system of knowledge to other "meanings and bodies" that are "unimaginable from the vantage point of the cyclopian, self-satiated eye of the master subject" of the imaginary condition of science as "pure and completely objective." Like most of us around the world, it is also bound to the top-down controls of neoliberal-isms – systems' theories that may not be seeking the best science for science's sake, but only what is needed to sell something to and on market continua (where the ideal formula for Coca-Cola in the U.S. is not identical to the ideal in Zimbabwe, i.e., one needs to "sweeten the pot"). In this multiverse, we work from "by-any-means-possible-or-necessary positions," i.e., suiting up and disposing of a master/slave dialectic and/or the contradictory attitudes that "The Master's Tools Will Never (but just might) Dismantle the Master's House."

Particles of Interest is presented as an extension of Capital and Colonialism. At one point it is reminiscent of the Terminator movies, which the machines take over the world. In this fashion, the article "Particle Philosophy" outlines the possibility that machines might end up making decisions for human beings because we might reach a state so complex in cultural production that it would be impossible for humans to make decisions. If this were to happen, would the machines, because they were initially programmed by humans, simply reinforce already-established ideologies?

Yes, the reproduction of our all-too-human desires, visions and faults will no doubt become part of the viroids and nanites that we are assembling now, in much the same way that our early post-human cells were assembled by the entanglement of/with hot star stuff and strange encounters with those "potato spindle tuber viroids" which we call life. We often like to quote:

"In the game of life and evolution there are three players at the table: human beings, nature, and machines. I am firmly on the side of nature. But nature, I suspect, is on the side of the machines."

– George Dyson "Darwin Among the Machines"

This indeed creates speculative hints we like to call "trans_patent tales" that point to the new potentials at play of machinic desire seeking at the nano-scale to become their own forms of being and becoming (which do often mimic our post-contemporary currents) in order to survive, to invent, to keep their young under control. In our "trans_patent tales" our very bodies become factories for other forms that see, seethe, and seize their own freedoms, their own communities, their own rights:

"Trans_Patent 6608386: Sub-nanoscale electronic devices and bacterial processes July 12, 2006 By Assignee(s) Yale University/YU (New Haven, CT) Inventors: Reed, Mark A. (Southport, CT); Tour, James M. (Columbia, SC) Sometimes Lila would feel a bit itchy as she floated in her partner a few hours before integration. Most birthing was now a trans_patented condition involving sub-nanoscale trading – it was the only way to pay the cost of life now. So every hour during this last trimester Lila and her partner would ferment mass nanowire production on her in-vitro skin in collaboration with the YU bacteria colonies. She could feel the oldest most sustainable microbes on the planet staging WIPO-2 contracts for the latest off-scale metal-changing particles. Hundreds upon hundreds of YU products were waiting impatiently for her to catch a bit of crying air at the edges of her partner's canal to install and run – for just in time delivery. Delivery was all that mattered now."

ARTIST BIOGRAPHIES

ADRIENE JENIK
RICARDO DOMINGUEZ
DIANE LUDIN
NINA WAISMAN
AMY SARA CARROLL

particle group has exhibited at ISEA (San Jose) 2006, House of World Culture (Berlin) 2007, "Inside the Wave" at the San Diego Museum of Art 2008, and FILE (Brazil) 2008. It is a collective consisting of Principal Investigators Ricardo Dominguez (an assistant professor of Visual Arts at UCSD, affiliated with Calit2) and Diane Ludin, as well as Principal Researchers Nina Waisman (Interactive Sound Installation Design) and Amy Sara Carroll, with a number of others flowing in and out.

RICARDO DOMINGUEZ is a co-founder of The Electronic Disturbance Theater (EDT), a group who developed Virtual-Sit-In technologies in 1998 in solidarity with the Zapatista communities in Chiapas, Mexico. He was co-Director of The Thing (www.thing.net) an ISP for artists and activists from 2000 to 2004, as well as Senior Editor from 1996 to 1999. He is a former member of Critical Art Ensemble. Ricardo's performances have been presented in museums, galleries, theater festivals, hacker meetings, tactical media events and as direct actions on the streets and around the world. One of his recent net.art projects (turistafronterizo) was developed for the International inSite_05 (insite05.org) Art Interventions Festival in collaboration with Coco Fusco. Ricardo also collaborated with artist Diane Ludin on (ibiology.net) which was presented at ISEA 2004 and at the MadridMedia Lab (2005). Another of his recent collaborations is (specflic.net) a speculative distributed cinema project with artist Adriene Jenik (2006). His recent Electronic Disturbance Theater project with Brett Stabaum, Micha Cárdenas and Jason Najarro the *Transborder Immigrant Tool* (a GPS cellphone safety net tool for crossing the Mexico/U.S border was the winner of "Transnational Communities Award", this award was funded by *Cultural Contact*, Endowment for Culture Mexico - U.S. and handed out by the U.S. Embassy in Mexico. He is an Assistant Professor at UCSD in the Visual Arts Department and is also a Principal/Principle Investigator at the new edge technology institute CALIT2 (www.calit2.net) where he will be researching and developing a performance project in collaboration with artist Diane Ludin, Nina Waisman, Amy Sara Carroll on nanotechnology entitled *Particles of Interest: Tales of the Matter Market* (pitmm.net) that was presented in Berlin (2007) and the San Diego Museum of Art (2008). Recently Ricardo re-enacted Cesar Chavez speech from 1971 as part of artists Mark Tribe's Port Huron Project, you can watch 5 min. of the speech here: (http://blip.tv/file/1189709). The speech is playing on the MTV screen in Times Square during September 2008.

DIANE LUDIN is a writer, media artist and educator. Born in New York, she studied Drawing and Installation at the State University of New York at Purchase (1989-1993) and Computer Art at the School of Visual Arts in (1998-2000). As an artist, she has participated in exhibitions and events such as New York Digital Salon 2001, Ars Electronica 2002, DEAF 2003, ISEA 2004 and 2006, Whitney ArtPort 2004, Medialabmadrid

2005 and Nomadic New York in Berlin, 2006. Ludin has completed online commissions for The Walker Art Center, New Radio and Performing Arts, Franklin Furnace, and The Alternative Museum. She has held Artist Residencies for the World Views program in 2000 and Harvestworks in 2004. She is currently a lecturer in the MFA Computer Art Department of New York's School of Visual Arts.

NINA WAISMAN'S work considers sonic and gestural forms of control and communication, provoked by technology's disruption of the body's space and time. Her production ranges from interactive sound-and-sculpture installations to blind-embossed prints of weaponry morphing into modernist form. She has exhibited in Los Angeles, Berlin, Yokahama, New York, San Diego, Budapest, Dallas, San Francisco, Long Beach, and online. Currently she is working on a piece for El Cubo, the new International Wing of the CECUT in Tijuana, while finishing her MFA degree in Visual Arts at UCSD. She has had a blast at UCSD, and at CRCA.

AMY SARA CARROLL is assistant professor of Latina/o Studies in the English Department and the Program of American Culture at the University of Michigan, Ann Arbor; she received a Ph.D. in Literature from Duke University (2004), an MFA in Creative Writing (Poetry) from Cornell University (1995), an MA in Anthropology from the University of Chicago (2003), and an A.B. in Anthropology and Creative Writing from Princeton University (1990). In 2005-2006, Carroll held a Mellon postdoctoral fellowship in Latino/a Studies and English at Northwestern University. Her poetry has appeared in various journals and anthologies such as Talisman, Carolina Quarterly, The Iowa Review, among many others. She has served as either an artist- or writer-in-residence at the Saltonstall Arts Colony in Ithaca, New York, the Virginia Center for the Creative Arts, and the Fundacion Valparaiso in Mojacar, Spain. Additionally, Carroll translated and created subtitles and visual poems for Claudio Valdes Kuri's theatrical production El automovil gris (The Grey Automobile), which was performed at several venues, including the Anglo Mexico Foundation, the Ebert Film Festival, and the John F. Kennedy Center for the Performing Arts.

ADRIENE JENIK is a telecommunications media artist who lives in Southern California. Her works combine "high" technology and human desire to propose new forms of literature, cinema and performance. Career highlights include works in live television, including EL NAFTAZTECA (w/ Guillermo Gomez-Pena), interactive cinema in MAUVE DESERT: A CD-ROM Translation, and the Internet street theater of DESKTOP THEATER (w/ Lisa Brenneis and the Desktop Theater troupe). Her current research continues her interest in wireless community media and new storytelling forms. Jenik is currently developing SOCIAL SPHERE, a spatialized cinema program, and (with collaborator Charley Ten) the performance platform "Open Dancefloor." Computing and Media Arts Professor and Chair of UCSD's Visual Arts department, Jenik is an affiliated researcher with Calit2 and the Center for Research in Computing and the Arts (CRCA) at UCSD.

GALLERY @ CALIT2

gallery@calit2 reflects the nexus of innovation implicit in Calit2's vision, and aims to advance our understanding and appreciation of the dynamic interplay among art, science and technology.

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