

SLS 2002 Conference Program

Thursday, Oct. 10

3:00-8:00 pm: REGISTRATION (Pasadena)

6:00-7:30 pm: SESSION I

1A: Medical Technologies (Pacific B)

Sue Hagedorn (Virginia Tech), chair

Muriel Lederman (Virginia Tech), *The Genomic Revolution: Secrets of Life, Secrets of Death*

I will analyze, through its rhetoric, an exhibit at the American Museum of Natural History in New York, "The Genomic Revolution: Secrets of Life, Secrets of Death." The metaphor that frames the analysis is taken from the title of a volume by E.F. Keller. This exhibit describes the results obtained by the Human Genome Project, the application of sequence information in medicine and agriculture, and the social issues surrounding its use. The location of secrets of life in genes is one of the rhetorical devices; the availability and analysis of sequences may harbor the secret of death by transforming genes into drugs or therapies or forensic tools. Sequences may constitute a boundary condition that results in the demise of the human imagination about life and life's processes.

Kathleen Welch (University of Missouri, Kansas City), *Life, Death and Love in the Hum of Medical Technology: Using Poetry to Script 21st-Century Perceptions/Projections of "Abnormal/Normal," "Artificial, Yet Human" Bodies and Minds*

This presentation will discuss Steve Gehrke's book of poetry, *Resurrection Machine*. Gehrke's approach to the subject of transplantation and other current medical conditions is creative and frank. Gehrke describes what it is like to live in the age of technological invasion of human bodies. He humanizes it in fact, sharing how love and feelings transcend the boundaries of flesh. Participants in this session will begin to hone their perceptive abilities and view transplantation and disability through a purely 'non-medical gaze.'

1B: Technologies, Wonders, and Monsters: Vectors of the Human (Pacific C)

Benjamin Robertson (State University of New York at Buffalo), organizer/chair

Benjamin Robertson (State University of New York at Buffalo), *What We Have Never Been: The Modern, the Monster, and the Body*

The complex interactions of so many concepts and functions--the monster, the marvelous, modernity and postmodernity, Enlightenment rationality, the human, the posthuman, biological determinism, acculturation, the body, epistemology, and ontology--are scarcely containable. But that is precisely the point. The contentions that we have never been modern and that we have always been posthuman (by Latour and Hayles, respectively) open up a what a physicist might call a "phase space," but one with too many degrees of freedom to ever be adequately mapped. However, recognition cannot be the goal of this investigation. Recognition of the monster may be a first step, but ultimately it is not enough, as simple and banal recognition is a movement towards a premodern prevention of the monster. This paper will seek, in Deleuze's phrasing, to have stranger and more compromising adventures.

Leslie Graff (State University of New York at Buffalo), *The Wonder of Hermaphrodites and Evolution: Regress or Progress?*

Charles Darwin once remarked, "Our ancestor was an animal which breathed water, had a swim bladder, a great swimming tail, an imperfect skull, and undoubtedly was an hermaphrodite! Here is a pleasant genealogy for mankind!" The hermaphrodite has always been a 'monster' of sorts that brings out speculation, wonder, and horror. This paper is an attempt to contrast two moments of heightened interest in hermaphrodites and evolutionary theory, Darwin's Victorian Britain and the contemporary cyberworld. I will be exploring both the Victorian position of hermaphrodite as regression that threatened the "vigour and fertility" of the human species and the cyberpunk position of hermaphrodite as a breakthrough that could rid the human species of the problems of a two-sex world.

Gordon Hadfield (State University of New York at Buffalo), *From Primitive to Posthuman:*

Representing Wonder in the Poetry of Charles Olson

In "The Present is Prologue," poet Charles Olson ushers in a return to wonder by championing a post-humanist, post-modern real. Olson links this real, a dynamic space in which the demarcations between bodies become porous, to the continuous space of the mathematician Reinmann and the more beguiling phenomena of quantum mechanics. What I will investigate is Olson's conception of the post-humanist real and his means of "translating" this into written language. For "translation," Olson relied heavily upon the typewriter and a Fenollosa-esque understanding of the Mayan ideogram.

Ryan Burt (University of Washington), *The Environment of Memory: Locating the (Post)human in Neuromancer*

Current discourse exploring the relationship between the cyber-world and human identity often dichotomizes the subject. The (post)human is either an autonomous, material being with self-determined agency, or a disembodied, virtual figure that can be manipulated and potentially surrendered to computer technologies. The present paper moves beyond this duality, using *Neuromancer* (1984) as a model for exploring the posthuman. In William Gibson's novel, the markers of human identity are not located in a bodily presence/absence divide. Instead, what marks the human as distinctly human is memory. The paper draws out the close relationship between memory loss and the lived experience of both the virtual and material environments that define the lives of Gibson's characters.

1C: Calculating Life (San Marino)

Vicki Kirby (University of New South Wales), organizer; Elizabeth Wilson (University of Sydney), chair
All three papers take the relationship between language and life as the site of their inquiry. The "fitness", or efficacy of mathematical writing for example, whether the cryptographic ciphering of bacteria, the contagion of viral computation, or the transformational invention of evolution programs — all these examples provoke a reconsideration of the difference between image and substance, nature and culture, life and code. To different degrees, Derrida's notion of *écriture* informs all of the papers and focuses their attention on the generative force, or internal vitalism, of iteration. The implications are manifold, and they include a recuperation of empiricism within the intricate weave of a grammatological science, where a "general textuality" might be read as "mathesis naturalis." There is also a suggestion that if technologies such as scripts, codes and algorithms are "living," that is, self-organizing or self-scripting, then the difference between natural objects and technical objects deserves reconsideration. Such an intervention would radically displace the nature/culture distinction which underpins conventional interpretations of technology. And finally, the systemic implications and complexities of data exchange, the very word resonant in Derrida's work on the Gift, offers another opportunity to explore the transformative historicities of scripture, and the condensations which its virtual becomings articulate.

Douglas Thomas (University of Southern California), The Gift of Code: Computer Viruses and Writing as Digital Exchange

This essay explores how computer viruses have been coded in popular discourse and in the popular imagination as both discourses of "life" and as discourses of "evolution." In both cases, I examine the ways in which repetition and iterability are mirrored in the textuality of viral code. Within this dynamic, I argue, writing itself must always remain effaced and unrecognized within the process of infection and contamination, existing as a moment of "digital exchange," not unlike the Derridian notion of the Gift, which is only able to function as a condition of its very impossibility.

Thomas Lamarre (McGill University), Evolutionary Computation: Between Natural and Technical Individuals

Within semiotic classifications, numbers are somewhat scandalous. Their productivity blur the boundary between the domains held apart in semiotics — nature and culture — a problem addressed by Derrida's notion of *écriture* and by Deleuze's image-matter semiotics. At stake is the dynamism of matter or 'mattering.' Recent work on evolutionary computation or evolution programs intensifies the challenge to the nature/culture divide presented by numbers' dynamism. It thus provides a powerful impetus to think again about the boundary between natural objects and technical objects, by way Simondon's notion of evolution as ontogenesis.

Vicki Kirby (University of New South Wales), Mathesis Naturalis

The puzzle of mathematics, or its "unreasonable effectiveness," is commonly explained in terms of discovery or creation. According to a platonic theology, number pre-exists us and is therefore discovered; whereas constructionist accounts posit that number originates in situated knowledges that are culturally created. Despite their differences, both explanations agree that mathematical calculation is not an inherent capacity of substance. But can we be satisfied that the workable "fitness" of mathematical models can have no involvement with substantial reality? Could this conundrum offer us a way to re-figure the cryptogram of Derrida's "general textuality"?

1D: Risk, Terror and Technology (Santa Barbara)

Catherine Belling (State University of New York at Stony Brook), chair

David Flood (Drexel University), Loosing the Blood-Dimmed Tide: The Bioterrorist as Portrayed in Fiction

While the person who would intentionally create and release pathogens on a civilian population could, especially in our post-9/11 world, easily be stereotyped as a depraved monster, fictional portrayals of the bioterrorist suggest a more complex profile. In novels by Robert Ludlum, Tom Clancy, Steven J. Cannell, Robin Cook, and several others, we find a spectrum ranging from the evil scientist to the idealist who sees disease as a tool for directing the world along a better path.

Ursula Heise (Columbia University), Narrative in the Risk Society

This paper links ecocriticism, risk theory, and narrative analysis in a reading of two contemporary novels, Don DeLillo's *White Noise* and Richard Powers's *Gain*. It provides an introductory survey of risk analysis as it has evolved in the social sciences, and outlines those issues in the field that dovetail with literary and cultural study. The textual analysis shows that local technological risk is a crucial conceptual hinge around which *White Noise* revolves not only thematically, but also structurally through its deployment of satire. *Gain* approaches risk from a more systemic perspective, but its narrative structure does not deliver a persuasive formal correlative for the uncertainty and powerlessness that it portrays in the characters' confrontation with global risk.

Kevin LaGrandeur (New York Institute of Technology), Terrorism/Hypermedia/Text

The Web pages of well-known terrorist and hate groups provide examples of how such groups have learned to exploit the World Wide Web's potent combination of images and text. Using samples of such Websites, my presentation will explore how these hypermedia projects seek to manipulate their readers through an interactive combination of technology and rhetoric.

Greg Siegel (University of North Carolina at Chapel Hill), "What Remains of People": Truth, Death, and the Black Box

This paper interrogates the contemporary cultural mythology of the twin technologies that, in popular parlance, go by the name "black box": the cockpit voice recorder (CVR) and the flight data recorder (FDR). On the one hand, it is concerned to analyze the ways in which the black box is routinely constructed, in both technical and non-technical discourses, as a trustworthy witness to and meticulous chronicler of the events leading up to and culminating in an airplane crash. I contend that the discursive construction of the black box as a "technology of truth" participates in and perpetuates the culturally and historically dominant mode of thinking about recording media in modern Western societies. On the other hand, this paper endeavors to demonstrate that the black box is always

already haunted by cultural fears and forces—noise, absence, death—that threaten to disrupt and displace the technoscientific truth-claims made on its behalf. I argue that, despite its received association with reason, science, and truth, the black box, thanks to its uncanny ability to “give voice to” the recently silenced, retains something of the magic, mystery, and menace ascribed to it in and through the generic codes and conventions of horror, science fiction, and fantasy.

1E: Performing Science (Pacific A)

Dennis Summers (College for Creative Studies, Detroit), chair

Cassandra Armstrong (University of La Verne) & Ed Housman (Mitre Corp., retired), The Nature of Information

This seven stanza work humanely and scientifically describes the intrinsic role of information in life, art, organizations, our world and the universe. The poem is a reflection of the author, an experienced participant in the science of information. Ed sees the links that bind the forces at work in the universe. His years at Mitre, interfacing systems and solving complex problems have taught him some universals that he lovingly depicts in this work. He is in the process of writing, in collaboration with some of the other leading lights of the field, a definitive text on Information Science. It was, perhaps, this task that inspired him to write this “simplex”, accessible introduction to the field of information.

Robert Doud (Pasadena City College): The Darwin—Aquinas Dialogue

A wrinkle in the cosmic deployment of time has allowed two non-synchronous persons to meet. Thomas Aquinas and Charles Darwin discuss science and ethics, stem cell research, and Mary Shelley's Frankenstein. Then Mary Shelley appears to represent the importance of literature and the imagination in science and in ethics. Like life itself, this dialogue mixes incongruously considerations of the banal, the casual, and the profound. Relevant issues also include vegetarian ethics, finding cadavers for 19th century Scottish medical students, and good Mexican restaurants in Pasadena.

Dennis Summers (College for Creative Studies, Detroit), The Crying Post Project

I have begun work on a long-term global art project, where I am placing wood staffs in different locations throughout the world to mark sites of environmental and/or sociological damage. Each staff includes a solar powered, chip controlled “cry” generator. Additionally, I have created an interactive 3D web site, identifying the locations of the posts, along with related images, texts and internet links. The underlying metaphor of both the site and the project is that of “mapping relationships.” I will describe this project and the associated research behind it.

Paula Viterbo (George Washington University), I Got Rhythm: Gershwin And Birth Control In The 1930s

Presented as a short play, this work promotes discussion of alternative ways to write history of science. Gershwin's song is used here as a backdrop representing the social context of the 1930s. On center stage is a particular event – the redefinition of periodic abstinence as a scientific method of contraception. The discovery, in the early 30s, that ovulation recurred approximately fifteen days before menstruation was promptly applied to contraception. It led as natural, moral and innocuous, the new rhythm method enjoyed a significant popularity. Unfortunately, it has not lived to its promise, and indeed women continue to ask for much more.

1F: Lenin, Imperialism, and Cultural Theory Now (Del Mar)

Amrohini Sahay (State University of New York at Stony Brook), organizer/chair

Brian Ganter (University of Washington), The Empire of Gift (and its Relation to the Teaching of "Citizenship" in the Global Humanities)

In *Imperialism: the Highest Stage of Capitalism*, Lenin argues that capitalism is arriving at the threshold of socialization of production by putting an end to free competition. Defending the free market, Bataille contests Lenin's theory with his idea of “general economy” -- an economy free from the logic of exchange and liberated from labor. Brian Ganter's paper argues that “gift”, after Bataille and Mauss, becomes the organizing trope of a “general economy” driven by circuits of expenditure, a new social order in which citizenship (Derrida's cosmopolitan hospitality and forgiveness); a “nurturing” intellectual ethos (Cixous' notion of the “feminine”) and a new philosophy of care (North/South debt reduction) all become sites of resistance to imperialism. Far from being anti-imperialist, Ganter argues that gift-theory helps to legitimate capitalism under the new sign of “empire” (Negri-Hardt).

Julie Tarrant (State University of New York at Albany), Empire versus Imperialism and the Question of Reproductive Labor

Julie Tarrant's paper engages the claim that within “Empire” the family, along with civil society, is “withering away” as the distinction between productive and reproductive labor is becoming obsolete. The paper argues that Negri and Hardt's theory is ineffective for developing a cultural studies of the contemporary family because it resolves, in the imaginary, the contradictions of family and its reproductive labor under capitalism. Tarrant argues, in contrast, that Lenin's theory of imperialism as the highest stage of capitalism is productive for explaining the way in which “family” is situated on a crucial “faultline” of capitalism as a global mode of production wherein “production becomes social, but appropriation remains private.”

Stephen Tumino (University of Pittsburgh), Lenin and the New Global Intellectual

Stephen Tumino's paper looks at how with the rise of the new anti-capitalist struggles there has emerged a new populist intellectual put forth in the writings of Bourdieu, Negri and Zizek that exposes how Foucault's “specific intellectual” has become an alibi of commodification. The paper questions the political value of the new intellectual by showing how it does work for capital by containing the anti-capitalist struggles to the path of mere reforms by rejecting Marx's labor theory of capitalism for the old new left theory of cultural domination. It argues for a new revolutionary intellectual as found in Lenin's writings: a person in collectivity capable of providing “outside” knowledge of the global struggles on the terrain of wage-labor and capital.

Robert Wilkie (State University of New York at Albany), **How 'New' is the New Labor and (some notes) on its Relation with Cyberculture**

Rob Wilkie's paper examines the claim of the cutting-edge cultural analysis that the old economy of "labor" has been replaced by the weightless "new economy" of knowledge; that it is no longer "production" but the consumption of goods that shapes people's everyday and immediate identity. Reading Lenin's theory of technological advancement in profit production with Negri's cyber-theory of "immaterial" labor, his paper puts in question the popular conclusion that there is a radical structural break in capitalism. What has changed, Wilkie argues, is not the logic of accumulation of capital but its forms. He then outlines a new activist cultural critique and ends by posing the question on how such a critique will change the modes of teaching culture in classroom and in public debates.

8:00-9:30 pm: WELCOME and RECEPTION (California Ballroom)

Friday, Oct. 11

8:00 am-3:00 pm: Registration (Pasadena)

8:00-8:30 am: Morning Coffee (Pasadena)

9:00 am-3:00 pm: Book Exhibit (Pasadena)

8:30-10:00 am: SESSION II

2A: Medical Subjects in the Popular Media before 1850 (Santa Barbara)

Hillary Nunn (University of Akron), organizer/chair

Hillary Nunn (University of Akron), **Human Dissection and Professional Dissent: Publishing the Turf War between London's Barber-Surgeons and Physicians**

In seventeenth-century London, professional disputes between the College of Physicians and the Barber-Surgeons' Company became increasingly heated as the practice of human dissection took on a greater presence in medical education and in the minds of curious city dwellers. This paper examines accounts of the debates over dissection as they appeared in scientific and popular printed materials. In particular, this paper will examine Helkiah Crooke's largely unsuccessful attempts to figure anatomy as a medical middle ground that both physicians and barber-surgeons share in his influential treatise *Microcosmographia*.

April Haynes (University of California, Santa Barbara), **Obscenity vs. 'The Medical Claim': The Trials of Dr. Hollick**

In 1846, Frederick Hollick, a self-accredited "medical man," faced criminal charges of obscene libel based on his popular book and lectures. Prosecutors argued that Hollick's words were salacious rather than informative -- indeed, that "there was little that was scientific" in his work on anatomy and physiology. In response, Hollick's loyal readers and audience members used the daily papers to repudiate the "monopolization" of medical knowledge by elite physicians and to insist that women, as well as men, were entitled to learn about sex and contraception. Like many speakers on the lyceum circuit, Hollick's radical convictions led him to argue for the democratization of education and the reform of marriage. But unlike other Owenite lecturers, he claimed a special prerogative as a doctor -- a "red republican doctor" -- to speak about these topics. Hollick's trials opened a print debate over who should be allowed to speak with the authority of medicine at just the moment when "regular" physicians struggled to develop that authority and confine it to their ranks. The peculiar, contested power of "the medical claim" in antebellum America can only be understood by reading the words of the ordinary men and women who granted it.

Richard Wisneski (Kent State University), **Warring Words and Fighting Fevers: Popularizing Medical Writing in the War of 1812**

This paper explores medical reports published by physicians involved with the United States military during the War of 1812, along with published accounts of epidemics written by physicians and the popular press during and immediately after the War of 1812, with particular attention to the works of Drs. James Mann and David Hosack. I examine the rhetorical strategies such texts employed, their dissemination, and effects they had on their audiences. I argue that many learned physicians' accounts subtly make class and socio-cultural distinctions in regards to health and immunity to disease, such that high class standing and cultural privilege become reflective of one's adherence to republicanism and patriotism.

Liz Hutter (University of Minnesota, Twin Cities), **Reading Health in the Home and Administering Health for the Nation: A Narrative of Nineteenth-century Domestic Medicine**

In this presentation, I read Dr. John C. Gunn's popular domestic medical manual, *Gunn's Domestic Medicine* (1830), as an accessory to the enactment of a chronological, spatial, and racialized narrative of national growth and self-definition. By placing *Gunn's Domestic Medicine* in the history of imperial medicine, I align domestic medical practice with President Jackson's imperial policies of national growth and also with American public health campaigns abroad and within the United States at the end of the nineteenth century.

2B: Systems, Complexity, Chaos 1 (Pacific A)

Bruce Clarke (Texas Tech University), chair

Victoria Alexander (Dactyl Foundation for the Arts and Humanities), *Nonlinearity and Teleology*

In contemporary analyses, teleological narratives are often mistakenly opposed to "nonlinear" narratives. Many secular teleologists throughout history described telos as a product of feedback, not as a direct cause separate from the process it is said to guide. Moreover, in many teleological accounts of causation, a telic state is seen as the inevitable result of random interactions. The importance of chance to the concept of telos has been ignored by arguments that have confused nonlinear telic causality with reductive material causality. Today nonlinear dynamics theorists and structural evolutionary theorists use the terms "structural attractors," "emergent complexity," and "self-organization" to describe the same kinds of phenomena that interested Kant, Bergson, and many other teleologists and vitalists.

Luis Arata (Quinnipiac University), *Interaction as Engine of Creation*

Creation is at a most basic level a somewhat lasting combination of parts arranged in new ways. On the one hand there is creation by competitive selection from random mutations. On the other is the deliberate work of authors masterminding creations. What these two processes tend to have in common is that the parts that go into the creative process are treated as rather neutral objects. But what if the parts have a say in the process? Could the medium itself become a prime mover in acts of creation? If the parts that combine are not passive but can interact on their own, then we fall into a new area between deliberate authoring and adaptive randomness. In this zone of interacting components, reflexive looping becomes a mechanism of creation. In this presentation I discuss creation by looping interaction using examples from literature and science.

Sharon Lattig (City University of New York Graduate Center), *Acts of the Mind: Perception as Metaphor and Metaphor as Perception*

It has long been held that metaphors in some way reflect cognitive processes. This paper brings neurological evidence to bear on the widespread claim for the figure's centrality to thought. It argues that the dynamic at stake in metaphor, distilled from several prominent theories, is homologous to the neurodynamical understanding of the brain's transformation of raw sense data into percepts, that is, the mechanism by which mind relates itself to world.

Leyla Ercan (University of Erlangen), *Transversal Eco-Poetics in Gilles Deleuze and Félix Guattari's A Thousand Plateaus*

In *A Thousand Plateaus*, Gilles Deleuze and Félix Guattari embark on a project of establishing a critical category of complex spatiality by crossfertilizing postmodern conceptions of space with methods from mathematics and (natural and techno-) sciences, in particular topology, complexity theory and Actor-Network-Theory; disciplines whose conceptualisations of time and space have radically transformed the ontological and epistemological matrix of Western culture. Taking their concept of 'becoming' as Leitfigur and conceptual parameter of my paper I will elaborate a concurrent ethico-aesthetic episteme of transversality which I think will help to critically reconsider the complex interaction between human subjectivity and its social, technological and natural environment.

2C: Darwinian/Cognitive Epistemologies in Literary Criticism (Pacific B)

Lisa Zunshine (University of Kentucky, Lexington), organizer/chair

Nancy Easterlin (University of New Orleans), *Ecocriticism, Evolutionary Criticism, and the Nature of Environment*

Ecocriticism, a form of environmentally oriented literary scholarship, has become a recognizable approach within literary studies in the last fifteen years. As Joseph Carroll has pointed out, critics adopting this approach focus principally on writers who exhibit a love of nature (e.g., Edward Abbey, William Wordsworth, Henry David Thoreau). This is in keeping with their moral motivation to promote the value of the natural world. The paper here proposed will suggest that the ethical ends of ecocriticism might be best served if its adherents embraced a Darwinian concept of the environment. Presently, ecocritics equate "environment" with "natural world" (that is, the world of physical matter and its forms of life other than human); from a Darwinian perspective, the environment is not only in a state of flux, but one of its most significant elements is the presence of other human beings. Employing a Darwinian concept of the environment, this paper will suggest that how individuals feel about nature is interconnected with their relationships with the people who also help constitute their environments and that, therefore, studying the dynamic system of self-others-natural world in literature can reveal why human attitudes toward nature are sometimes disordered or destructive. Jean Rhys's *Wide Sargasso Sea*, a novel exploring madness in post-emancipation Jamaica, will provide examples of the impact of disordered human relations on the individual's perception of the natural world.

Lisa Zunshine (University of Kentucky, Lexington), *Cognitive Anthropology, Essentialism, and the Literary Motif of the (Comically) Transferred Self-Identity*

This paper addresses the concern regularly voiced by both proponents of "cognitive" approaches to literature and by their critics, namely, the lack of attention to the local historical detail as a presumed default mode of a "cognitive" analysis of the literary text. Taking as my starting point Andy Clark's observation that "the biological brain is, it seems, both constrained . . . by the nature of the evolutionary process . . . and empowered . . . by the availability of a real-world arena that allows us to exploit other agents, to actively seek useful inputs, to transform our computational tasks, and to offload acquired knowledge into the world," I discuss ways in which a cognitive—particularly, connectionist—perspective on a literary text would *necessarily* take into consideration the text's cultural-historical embeddedness.

Blakey Vermeule (Northwestern University), *The Computer Game is the New Novel*

This paper compares the history of fiction to the current generation of simulation computer games and argues that there are widespread, significant similarities. But whereas the novel has become, with a few exceptions, marked as the province of an elite class, the computer game has achieved the sort of widespread penetration into the mass market that novelists can only fantasize about.

In an ironic cultural twist, the novel is now seen as a culturally ameliorative antidote to the fact that teenagers today spend too much time with their faces in a screen.

2D: The Posthuman Embodiment Project: Shaping the Material, Emotive, and Phenomenological Manifestations of Twenty-First Century Bodies (Monterey)

Kathleen Woodward (University of Washington), organizer, Katherine Cummings (University of Washington), chair

One of the defining features of the “posthuman” body is its distributed and extended nature, a characteristic that is exemplified by phenomena such as the mixing of human body parts (e.g., DNA) with nonhuman body parts and the emergence of qualities traditionally associated only with humans (e.g., emotions) in non-human bodies. The papers in this panel explore the meaning of posthuman embodiment along three different axes (materiality, emotions, and phenomenological manifestation), all of which focus attention on modes of experience that extend human bodies and provide points of connections between human and non-human bodies.

Robert Mitchell (Duke University), ‘Leaving Good Enough For All’: Assessing the Rhetoric of the Biocommons

Since the 1960s, a number of critics of commerce in human body parts (as well as commerce in information gathered from human bodies) have suggested that we can protect the human body only by establishing a “commons” of body parts and information, within which individual ownership claims would be tightly regulated (if not excluded completely). Proponents of this idea, such as Vandana Shiva and James Boyle, also have suggested that the biocommons allows us to recognize forms of labor and value ignored by the dominant “Lockean” regime of bio-ownership claims, and supporters point to the success of such an approach in protecting international sea beds from individual ownership. I argue, however, that most of these proposals, rather than fundamentally questioning Lockean assumptions about labor, value, and “natural bodies,” are instead underwritten by the logic of Locke’s state of nature, in which property claims are non-exclusive (no property right *has* to come at the expense of another) and ruled by an ethic of abundance (one can, and should, leave good enough for all). In the final section of the paper, I consider several approaches to the biocommons that seem to gesture at more radical, and less Lockean, understandings of what a “biocommons” could mean.

Kathleen Woodward (University of Washington), A Feeling for the Cyborg

The tradition of technocriticism has been largely dominated by a rhetoric, often cast in emotional terms, of technophilia and technophobia. In this paper, technology is considered in terms of another discourse of the emotions—the attribution of the emotions to our technological lifeworld, specifically to replicants, cyborgs, and even disembodied “life.” This attribution of the emotions is explored in terms of representation and in terms of reader-response, or what I call a phenomenology of technology. This approach allows us to reread several seminal science fiction texts (both print and film), including Arthur C. Clarke’s *Space Odyssey*, Philip K. Dick’s *Do Androids Dream of Electric Sleep?*, *Silent Running*, *Solo*, Orson Scott Card’s trilogy, and Sarah Zettel’s *Fool’s War*. The talk does not seek to provide close readings of these texts but rather draws on them to suggest an evolution in the terms “artificial intelligence,” “emotional intelligence,” “artificial emotions,” and finally, “artificial life,” suggesting that the emotions serve a mediating function between different forms of life.

Phillip Thurtle (Carleton University), Animating Your Genome

Now that the raw data of the human genome has been sequenced, much of the future of understanding the relationship of genetics to embodiment will take place in the realm of animation technologies. This paper looks at two important programs used to understand the relation between coded DNA sequence and protein folding. It will argue that these developments support an emergent, more sophisticated understanding of information in the molecular biological sciences, where information is no longer thought of as simply “the genetic code” but as a field of possible existential pathways. It will also suggest two unlikely sources for gaining a more complete understanding of the dimensions of the programs that will animate post-genomic biology: existential phenomenology and comic books.

2E: Psyche, Soma, and the Production of Mental Illness (Pacific C)

Elizabeth Wilson (University of Sydney), organizer/chair

Lisa Cartwright (University of California, San Diego) & David Marcus (UCLA Neuropsychiatric Institute), Affect and the Obsessive Compulsive Spectrum

This is a critical dialog on professional responses to and classification of cultural and gendered affect, language, and behaviors in people with OC behaviors, including those who have Tourette disorder and other disorders now considered to be part of the obsessive compulsive spectrum. In addition to shifts in the definitions of OC as it moved into the spectrum model of classification, we consider the various distinct or overlapping methods and discourses of its treatment: psychoanalytic, neurological, and behavioral.

Jonathan Metzl (University of Michigan), Selling Sanity Through Gender: The Psychodynamics of Psychotropic Advertising

My paper provides a brief history of representations of women in psychopharmaceutical advertisements from U.S. professional journals between 1950 and 2000. I demonstrate how over time, drug ads posit pharmaceutical responses to concerns about issues such as motherhood, marriage, and women’s rights. This finding complicates current critiques of “medicalization” by implying that the seemingly “normal” states that these ads medicalize are not randomly constructed by drug marketers. Instead, the construction of these “diseases” depends on a host of pre-existing cultural assumptions about normative gender roles.

Elizabeth Wilson (University of Sydney), Depression, Serotonin and the Gut

This paper explores how depression comes to be distributed throughout the body. Special attention will be paid to the gut and the peripheral nervous system—there is a network of neurons in the gut (the so-called “second brain”) that is thought to act somewhat independently of the CNS. This paper uses clinical and neurophysiological data to suggest that depressions are not just ‘in the head’. Depressions are distributed events that are as dynamic neurologically as they are psychologically or culturally.

2F: Art and Theory (San Diego)

Mita Choudhury (Georgia Institute of Technology), chair

Koen DePryck (Institute of Knowledge Management, Brussels), *Art as Feynman Diagram. (Or is it the other way around?)*

This paper explores the power of Feynman diagrams as visual metaphors for the spatio-temporal causal models we typically find in works of art. Feynman diagrams and works of art appear to rely on very similar cognitive operations, apparently capable of spanning most of the universe, including the small and the large, the slow and the fast, the past and the future. This should not come as a surprise. After all, scientists and artists share one overriding trait: They are the result of a common human evolution.

Paul Harris (Loyola Marymount University), *Vehicles of the Virtual: The Urban Vernacular of Simon Rodia's Watts Towers*

The presentation will consist of a verbal and visual collage of impressions designed to express how Deleuzian spatial concepts may be found at work in Simon Rodia's Watts Towers. Rodia integrates unrelated elements within a continuous mixture, collecting debris into a patchwork that accumulated according to an internal time of production and that creates a distribution of fragments along smooth space surfaces that enclose a milieu while thrusting outwards and upwards.

Elliott King (University of Essex), *"Dalí Atomicus", or the Prodigious Adventure of the Lacemaker and the Rhinoceros*

Following the United States' decision to drop the atomic bomb in 1945, physics became Salvador Dalí's 'favourite food for thought'. His paintings dating approximately 1945 to 1960 – christened his 'Atomic Period' – reflected this interest, endeavouring to provide aspects of quantum theory with pictorial illustration. His rather unusual vehicle for this mission was the representation of quasi-Renaissance religious icons, which he sought to recast through the lens of contemporary scientific understanding. Acknowledging the discontinuity of matter, Dalí composed his figures from clouds of coruscating corpuscles, which he contended were imbued with religious spirituality in accordance with his developing tenet, 'nuclear mysticism'. These fragmentations soon adopted the semblance of rhinoceros horns – catalysed by Dalí's fascination with logarithmic spirals and additionally burdened with phallic references and suggestions of the Holy Virgin. The rhinoceros horn and its associated symbolic lexicon became ubiquitous in Dalí's production, leading in 1954-55 to a paranoid-critical 'rhinocerosation' of Vermeer's *Lacemaker* and to a staged confrontation between Vermeer's masterpiece and a living rhinoceros.

10:00-10:30 am: Refreshments (Pasadena)

10:30-12:00 noon: SESSION III

3A: The Medicalization of Manhood in 19th Century England (Santa Barbara)

Barbara Tilley (Hilbert College), organizer/chair

This panel examines several different perspectives of the image of the male doctor in relation to the way that he is positioned in both real-life and fiction in the nineteenth century. Although much critical work has focused on the influence of the male doctor on his treatment of men and women, little work has examined the doctor himself and his relationship to his own body, his sexuality and his behavior with his patients in the context of Victorian social culture and medical literature. This panel begins to examine the provocative relationship between constructions of nineteenth-century masculinity and the medical profession.

Tabitha Sparks (Emory University), *Self-Made Gentlemen: Victorian Medical Autobiography and the Professionalization of the Doctor*

"Self-Made Gentlemen" analyzes the way that historical Victorian doctors amalgamated distinct class identities to shape their burgeoning field. The autobiographies of two illustrious Victorian doctors, Sir Benjamin Brodie (1783-1865) and Sir James Paget (1814-1899), merge the disinterested and aristocratic service ideal that we associate with Matthew Arnold and his disdain for the "practical view of things," with the self-made man, whose success favors the opportunism and competition more reminiscent of Samuel Smiles. I argue that such rhetorical strategies contributed to the rise of the medical profession by helping to resolve its frequently disputed goals.

Barbara Tilley (Hilbert College), *New Masculinity and Medicine in Emma Frances Brooke's A Superfluous Woman (1894)*

This paper focuses on the role of the doctor as a feminist figure and voice in a political novel, the New Woman novel, that questioned and challenged the need for male authority in women's lives. The doctor is presented not so much as a force of male scientific authority, but more as a sympathetic figure who supports the feminist cause. However, in this new social position the doctor's manly masculinity and sexual desire are erased and he becomes merely a voice through which readers "hear" of the inequalities between the sexes.

Susan Zieger (Stanford University), *Addiction, Masculinity, and Medical Professionalism in Horace Saltoun and The Strange Case of Dr. Jekyll and Mr. Hyde*

As an idea of addiction began to emerge in the late nineteenth century, so arose the figure of the doctor who was himself addicted to the drugs he was supposed to dispense as medicine. This figure is overwhelmingly associated with the masculine homosociality of his profession; at the same time, he is also feminized for his out-of-control consumption. He thus offers an interesting perspective on the

medicalization of masculinity. We can see this in two stories about "addicted" physicians, Coke Richardson's *Horace Saltoun* (1861) and R. L. Stevenson's *The Strange Case of Dr. Jekyll and Mr. Hyde* (1886).

3B: Systems, Complexity, Chaos 2 (Pacific A)

Steve Weinger (Worcester Polytechnic Institute), chair

Maria Assad (State University College at Buffalo), Metaphor And Simulation: Parallel

Epistemologies?

I investigate similarities between metaphorical expressions and simulation in dynamics. Both processes pursue knowledge, whether in the form of meaning (poetry, literature) or solutions (science, mathematics). Do they share sufficient parallel methods which justify mutual borrowing in the quest for knowledge? I discuss Stéphane Mallarmé's sonnet "Une dentelle s'abolit" and Thomas Weisert's analysis of an "epistemology of simulation" (in *The Genesis of Simulation in Dynamics*, 1997). Between metaphor as a process without a "true solution" and simulation as "inferred knowledge," I propose a connecting passage that may demonstrate "what it means to know something" (M. Feigenbaum).

Jeff Lawshe (University of Washington), Hypernatural History: Yamashita and Emergence

Karen Tai Yamashita's first and third novels, *Through the Arc of the Rainforest* (1990) and *Tropic of Orange* (1997) integrate a series of social and natural systems — biological, cultural, and political — compatible with a disciplinarily diverse set of contemporary theorists, including Stephen J. Gould, Michael Hardt, Steven Johnson, Paula Moya, and Francisco Varela. In juxtaposing these texts and theorists, I intend to demonstrate the cultural intelligibility and currency of emergent systems. *Tropic of Orange* in particular exemplifies the operation of such systems, which relate the function of individual entities or organisms to collective order achieved absent a centralized operator.

Ellen Levy (Brooklyn College), Art and the Science of Complexity

Complexity science bridges across many disciplines and offers a new way of approaching representation. It suggests systematic, yet open-ended approaches to such topics as evolution and technological innovation. Artists use or refer to new computational models such as genetic algorithms, neural networks, and cellular automata. Some of us now explore interdependent systems and emergence. These methodologies can be seen in art works, produced with and without significant technology. Moreover, the theory of complexity helps re-route the presumed subjective vs. objective distinction for the arts and sciences.

Perla Sasson-Henry (United States Naval Academy), Chaos theory in Jorge Luis Borges' "The Library of Babel" and Stuart Moulthrop's hyperfiction "Reagan Library"

Jorge Luis Borges' work is intimately related to technology and science. In his short stories "The Garden of Forking Paths" and "The Library of Babel" Borges anticipate hypertext and Internet well before the advent of these technologies. Bifurcation and chaos theory have also been associated with Borges' short story "The Garden of Forking Paths." In his essay "Borges's Garden of Chaos Dynamics", Thomas Weisert claims that in "The Garden of Forking Paths" Borges discovered the essence of Bifurcation Theory thirty years before chaos scientists mathematically formalized it (Hayles, 1991). Even though Weisert's research provides the foundation for a new direction in the study of Borges' texts, no research has been done to study the intricate connections between "The Library of Babel", the hyperfiction "Reagan Library" by Stuart Moulthrop and chaos theory. This paper seeks to present a new perspective in the literary analysis of "The Library of Babel" and "Reagan Library" by analyzing the connections between these two works as well as the role of chaos theory in these two stories.

3C: Poetry (Pacific B)

Douglas Basford (Johns Hopkins University), chair

Douglas Basford (Johns Hopkins University), Visual Anthropologist as Hero: The Epistemology of Arthur Sze's 'Six Persimmons'

Arthur Sze's "Six Persimmons" is an elegy for Donald Rundstrom, creator of a film on Japanese tea ceremonies, and anchors its epistemological concerns in anthropological theory and practice. Sze's persona, variously diegetic and extra-diegetic (congruent with Pike's etic/emic distinction), threads together disjointed statements akin to Quine's "observation sentences" with references to "objective" Western sciences and Zen koan-like questions. Rundstrom and Sze work with "resonance," "the systematic relationships between images within and among different modalities" (Montreux), a mode Zhou Xiaojing terms "ecopoetic." The crucial gesture in visual anthropology, as for Sze, is a rigorous, introspective approach influenced by Lévi-Strauss and others.

Hillary Gravendyk (University of Washington), Incising Illness: Patients, Poetry, and Isolation

As we begin to conceive of our bodies as always in need of medical repair, despite embodied experiences that may belie illness, the deference to medical authority has become a default activity. Not only do we regularly relinquish the right to tell the "official story" of our illness to members of the medical community, we also accept the primacy of an expressive language (medical jargon) that is not our own and which does not sensually describe the experience of illness or suffering. Strikingly, this semiotic surrendering of the language of sickness has extended even to the realm of poetry, where the dialogue between body and its illness, and between medicine and life reveals itself as an essential failure of language to communicate the body in illness. This failure points to a fundamental isolation of the self from the body, illness, and the bodies of others.

Ray Mize (Southeastern Community College, Whiteville, NC), A.R. Ammons: Littoralist of the Imagination

In 1955, Albert Einstein died, as did the American poet Wallace Stevens. In that same year, the late A.R. Ammons published his first book of poems with a vanity press. Its title was *Ommateum*, a title that establishes the thrust of his poetics and future work. It suggests the need to see with a "compound eye," to avoid a too easily demarcated vision of the world. As in this first volume, in subsequent books Ammons's poetics demonstrate his scientific studies, which this presentation will examine, using various poems.

Deborah Ross (Hawaii Pacific University), **Charles Darwin, Poet: or, Teaching *The Origin of Species* Across the Curriculum**

This paper discusses as poetry, and recommends teaching as poetry, a work written after Darwin claimed to have "wholly lost, to my great regret, all pleasure from poetry of any kind." It makes this rash suggestion so that Darwin may be presented to our students more accurately than he can be in most science classes, and so that in light of Darwin's accomplishments we can re-examine the curricular structures of our schools. The paper draws support from the *Origin* itself, Darwin's autobiographical writings, literary criticism, science texts, and my own experience teaching Darwin across the curriculum.

3D: Science History and Literature (San Diego)

Victoria Alexander (Dactyl Foundation for the Arts and Humanities), chair

Holly Henry (California State University, San Bernardino), **Virginia Woolf and the Discourse of Science: The Aesthetics of Astronomy**

This interdisciplinary study explores how advances in astronomy in the early twentieth century had a powerful shaping effect on Woolf's literature and aesthetics. It wasn't until 1923 that Edwin Hubble determined that the Andromeda galaxy was located far beyond the limits of the Milky Way, then believed to comprise the entire universe. Hubble's findings contributed to a public concern in the modernist period regarding a human decentering and re-scaling in a vast and ancient universe. The talk will be illustrated with slide images that document the popular rage over astronomy this study identifies.

Stephen Kern (Ohio State University), **The Progress of Science and the Whatchamacallit of Literature**

The history of science is a story of progress, while the history of literature is not. How integrate these sources? Six considerations justify integrating them for my current book project based on science and murder novels since 1830: (1) modern science is more precise and valid than Victorian science based on the criteria that research must be as verifiable and precise as possible; (2) I compare not whole novels but parts of novels, which I draw on as if they were criminological or psychiatric case histories, and those parts can evince better scientific explanations; (3) modern novelists had the benefit of hindsight in that they were able to draw on as well as critically evaluate the novels of their predecessors; (4) in thinking and writing about causality modern novelists as well as scientists used rhetorical techniques and explanatory models that are closer to our own, and they addressed more current issues; (5) the history of the species and of human life offer compelling examples of a struggle to advance toward increasing specialization, complexity, adaptability, and consciousness; (6) human beings experience progress in many simple acts such as drinking to quench thirst, practicing a musical instrument to improve.

Laura Otis (Hofstra University), **All Is True: Writing Anatomy, Comédie, and History in the Nineteenth Century**

An analysis of physiologist Johannes Müller's relationship with his students suggests that studying comparative anatomy and writing the history of science involve processes similar to those used in constructing fictional narratives. Like Honoré de Balzac, Müller admired anatomist Georges Cuvier and was drawn to marine life as a model for life's richness. Müller's students Emil Du Bois-Reymond and Ernst Haeckel created contrasting histories of their teacher, depicting him as a character whose failures highlight their own scientific achievements.

3E: Cultural Studies of Medicine/Psychiatry (Pacific C)

Bradley Lewis (New York University), organizer/chair

Elizabeth Donaldson (New York Institute of Technology), **The Pharmaceutical Technologies of the Self**

In this paper I will juxtapose the medical discourses of illness, health and normalcy in pharmaceutical advertisements for anti-depressants with the legal controversies surrounding the use of anti-psychotic medications in criminal hearings and trials. In particular I will look at significant judicial precedents in which defendants with severe mental illnesses are forcibly medicated by the state, such as *Riggins v. Nevada* (1992), in which the defendant attempted to suspend his anti-psychotic medication in order to demonstrate his "true mental state" to jurors.

Bradley Lewis (New York University), **Mad Science, Mad Pride, and Mad Literature**

This paper explores the conflict between "mad scientist," Dr. Sally Satel, and members of the psychiatric survivors activist group known as "mad pride." Science studies theory provides the background for taking both sides of the conflict seriously, but theory alone is not enough. To more fully understand the particular political dynamics of psychiatric science, one must go to the details of specific "science-culture" conflicts. Recent mad scientist/mad pride tensions are ideal for this purpose.

Catherine Belling (State University of New York at Stony Brook), **Hypochondriac Narrative And Medical Suspense**

Medical thrillers often contain parallel narratives, tracking events both on the human scale of the individual patient and the microscopic scale of the pathological process. These "hypochondriac narratives" produce suspense by playing on our normal lack of access to subvisible corporeal events. I explore the use of this strategy in several works of medical suspense, and consider how such narratives may work in the clinic: our increasing ability to imagine hidden dramas is linked to patient anxiety and reliance on imaging technologies that promise to uncover the submerged stories that patients fear but are always, necessarily, unable to tell.

Sharon Stockton & Katherine Ginn (Dickinson College), **"A kind of splitting off of the phallus": Psychiatry, Literature, and the Evolution of Rape in the 20th Century**

Before the second world war the rhetoric of rape in the United States and Europe — whether in the discipline of psychology or the field of high-brow literature — worked through an elision of the female body that accomplished a relatively solid vision of subject and object, producer and produced. The power implicitly bestowed on masculinity in the figurative uses of "rape" during this period was

gradually deterritorialized in the 50's and 60's in response to the shifting forms of late capitalism; it was replaced by a growing sense of paranoia as an extreme concern with the defense of the unity, integrity, and productive status of the masculine subject.

3F: Technologies of Globalization: Identity and Location in the Postnational Context (Monterey)

Stephanie Turner (Cornell University), organizer/chair

Recognizing that the nation still affords an important locus for identity formation even within a globally interconnected capitalist system that undermines the integrity and authority of the territorial nation-state, this panel seeks to chart some of the specific ways that conceptions of national identity function in this postnational context. Examining a variety of texts from a variety of different media, from film to photography to literature, we all seek to elucidate the new conditions of power and exploitation enabled by the on-going processes of globalization. By making these conditions visible, we hope also to make them vulnerable. By foregrounding processes of mediation, each of these essays elaborates the importance of symbolic economies (identity) to the maintenance of material economies. As new technologies of mediation continue to destabilize identity and community, freeing them from the constraints of temporal and spatial location, it becomes more important to attend to the possibilities and limitations of these developments in specific ways.

Stacy Takacs (Oklahoma State University, Tulsa), *The Paradox of Global Americanism in Independence Day*

Stacy Takacs' essay offers an analysis of the blockbuster film, *Independence Day*. She argues that the film documents one of the new functions of nationalism within this global context: it provides an alibi for the expansion of the system of global capitalism. The film encourages the audience to identify with the system of global capitalism by displacing their belief in the nation onto it. The film's paradoxical treatment of electronic technologies, however, testifies to the radically contingent nature of such a project, and so reminds us that the new order is not a *fait accompli* but a social production subject to renegotiation.

Stephanie Turner (Cornell University), *Jesus Redux and the New World Order in James BeauSeigneur's Christ Clone Trilogy*

Stephanie S. Turner's essay examines American technological ambivalence in the New World Order as a proliferation of Christian apocalypticism in a close reading of BeauSeigneur's novel of the cloning of Jesus from cells found on the Shroud of Turin. Linking the xenophobia of this tale of the Antichrist's prophesied world takeover to the eugenic cloning espoused by the UFO cult the Raelian Religion, Ms. Turner argues that biotechnologically mediated subjects both proliferate postnationalism as well as shore up national boundaries.

Susan McHugh (University of New England), *Agribusiness and Farmeggeddon in Sue Coe's and Ruth Ozeki's Meats*

Susan McHugh's essay examines the concrete connections between US national identity and beef consumption in the global marketplace. She argues that beef consumption is a mechanism for the performance and global dissemination of a particular brand of "American" identity, which masks the exploitative practices of multinational corporate actors in the new economy. Ms. McHugh argues that Sue Coe's *Dead Meat* and Ruth Ozeki's *My Year of Meats* provide models for resisting these exploitative practices by re-embodiment them, rendering the connections between American identity and multinational corporate actors concrete, visible, and contestable.

12:00-1:30 pm: LUNCH (on your own)

1:30-3:00 pm: SESSION IV

4A: Neuroscience (Cajal Sesquicentennial) (Santa Barbara)

Cecelia Cavanaugh (Chestnut Hill College), organizer/chair

Cecelia Cavanaugh (Chestnut Hill College), *Ramón y Cajal, "Maestro de Muchos": Widening the Circle of Influence*

As we observe the one hundred fiftieth anniversary of the birth of Santiago Ramón y Cajal, recognized as the father of neurological science, and the "architect of the human brain," this paper considers the figure of Cajal and his influence beyond the scientific circles of his day. The Nobel Laureate enjoyed social status in the Madrid of his time, and exerted an important influence on his compatriots outside of the scientific realm. This paper will study Santiago Ramón y Cajal as a "maestro de muchos," including other scientists, writers, and artists. Clearly Cajal represented Science to his contemporaries, and this study of the reception of Cajal and his work by his contemporaries provides an analysis of their relationship with Science and greater insight into their work.

Dale Pratt (Brigham Young University), *Ramón y Cajal, Pardo Bazán, and the Hermeneutics of Discovery*

Spanish Baroque playwright Pedro Calderón de la Barca created a set of tragedies known as "wife-murder plays," including *El médico de su honra* [The Doctor of His Honor] and *A secreto agravio, secreta venganza* [For a Secret Offense, Secret Revenge]. In the 1880s, immediately following the 200th anniversary of Calderón's death, Spanish novelist Emilia Pardo Bazán and future Nobel-laureate Santiago Ramón y Cajal each wrote a short story titled "A secreto agravio, secreta venganza." Pardo Bazán's story loosely follows the Calderonian plot, ending with a cataclysm when the jealous protagonist burns to the ground a building containing his wife and her supposed lover. Cajal's hero, Max Forschung, emulates his Calderonian predecessor in his jealousy and creativity in vengeance, but instead of killing his wife, he uses her to uncover the truth about her infidelities. Both stories critique positivistic claims about evidence and truth, with Cajal's going so far as to parody the scientific method and the motives behind scientific research. Readings of

Cajal's aphoristic *Charlas de café* [Cafe Chats] and his manual for young investigators help show how Max's insane yet calm and methodical jealousy and vengeance are but dark reflections of what Cajal considered to be important tools aiding scientists in their discoveries.

Steven Meyer (Washington University), **Altered States of Consciousness: Gertrude Stein, J. Allan Hobson, and Amplified Mechanisms of Neuromodulation**

This paper extends my earlier discussion of Stein's radical compositional practices in the context of William James's 1896 Lowell Lectures on "exceptional mental states" to encompass Hobson's work over the past several decades on altered states of consciousness. The conclusion: that Stein's introspective or autopoietic investigations of dissociative practices in writing are entirely consistent with Hobson's more clinically-oriented investigations of "amplified" dissociative or hybridized tendencies resulting in "exceptional states" that range from sleep walking and hypnopompic hallucinations to out-of-body experiences and alien abduction. (Question for the astute reader: what's Cajal's role in all this?)

4B: Thinking Through Metaphor (Monterey)

Barbara Reeves (Virginia Tech), organizer/chair, James Bono (State University of New York at Buffalo), commentator

Barbara Reeves (Virginia Tech), **The Scientific Revolution through the Lens of Metaphor**

Metaphor framed traditional understandings of the Scientific Revolution, as in the well-known "mechanization of the world picture" of half a century ago, independent of contemporary recognition of the power of metaphor to affect our ways of knowing. More recently, studies of particular metaphors have appeared, scattered through the specialist literature and making use of a variety of theoretical approaches. In this paper I sketch a synthetic view of how these studies taken together suggest not only that the metaphors interact, but how they are reshaping our understanding of the contested period known as the "Scientific Revolution."

Diana Palmer Hoyt (NASA and Virginia Tech Northern Virginia Center), **The Myth of the Frontier and the American Space Program: The Ethical Challenges of Metaphorical Inducement**

In 1893, Frederick Jackson Turner proposed that American customs and character, indeed, our *success* as a people, were largely the product of our frontier experiences. Turner's innovative work offered an explanation of the American character to generations of historians, science fiction writers, and the architects of the American space program. In this paper, I will examine: how the frontier metaphor was embedded in Wernher von Braun's vision of space exploration; the philosophical and ethical entailments of the metaphor for the nascent U.S. space program; and, lastly, the ethical challenges raised by the embodiment of metaphor in programs of space exploration.

Laurie Robertson (Science Applications International Corporation and Virginia Tech Northern Virginia Center), **Conceptualizing Software: The Effects of Metaphor on Software Development**

For over forty years the computer industry has conceptualized software using two metaphors -- software as an engineered product and software as a manufactured product. These metaphors have had significant impact on the tools and techniques used to develop software; however, after forty years of using these metaphors, software and its development are still poorly understood. This paper discusses the effects of these two metaphors on software development and an emerging phenomenon within the industry to find new metaphors.

Alan Beyarchen (Ohio State University), **Metaphor and the Military Mindset in an Age of Infowar and Biowar**

This paper considers the fundamentally engineering training and outlook of uniformed military personnel, particularly among US forces and the Department of Defense, and the extent to which this mindset is well prepared to deal with the shift from an era of hardware to an era of software and bioware. Traditional and new metaphor usage may offer insight into the cognitive transition currently taking place in strategy, planning and operations.

4C: Constructing knowledge (Pacific A)

Alan Rauch (Georgia Institute of Technology), chair

Dennis Desroches (McMaster University), **The Facts of Nature and the Question of Law in Bacon's *Novum Organum*.**

This paper reads Francis Bacon's conception of fact alongside two recent studies of fact: Shapiro's *A Culture of Fact* and Poovey's *A History of the Modern Fact*. Dwelling particularly on the transformation of the use of the term fact as it migrates from legal to "scientific" domains, I suggest that Bacon's thought is in urgent need of closer scrutiny by the field of science studies, insofar as Bacon's discursive (rather than empirical) conception of fact is precisely what allows concepts like experiment and observation to behave as "juridical" authorities in the production of scientific knowledge.

Duncan Kennedy (University of Bristol), **Empire and Knowledge**

This paper seeks to open up a discussion of empire and knowledge at the theoretical level, and will do so by focussing on one issue in particular: the imagery that associates totalizing views of knowledge ('theories of everything' or 'final theories') with, specifically, imperializing conquest. I shall draw attention briefly to a range of intertexts (including Bacon, Laplace, Darwin, Hawking and Weinberg), but frame them within a discussion of Lucretius' claim for Epicurean atomism as a *final* physical theory in his poem *De rerum natura* in the context of the emergence of the Roman aspiration to *universal* empire.

Alan Rauch (Georgia Institute of Technology), **Knowledge and Ignorance: A Study in Complementarity**

The paper will explore the ways in which knowledge has been constructed to "fill in" those intellectual space where ignorance might have to be admitted. This, more theoretical exploration, emerges from my work on the encyclopedias in the nineteenth century. I will

draw primarily on 19th century (and contemporary) sources, to address the "growth" of knowledge as a consistent historical theme. The growth of knowledge is always unprecedented and always beyond the control of a single individual, but it is also an important "screen" in a scientifically driven culture to resist the perils that come with the admission of ignorance. Such "perils" include the incursion of faith-based initiatives, including religion and supernaturalism. To some extent, we have witnessed a decade of supernaturalist responses to science, including cultural "products" such as the X-Files, Touched by an Angel, and the Harry Potter series. We are comfortable discussing constructions of knowledge, but much work needs to be done to articulate and understand constructions and deconstructions of ignorance. This paper will be a preliminary effort to move in that direction.

Chris Ganchoff (University of California, San Francisco), **Locating, Negotiating, Transforming: At Work in a Neurobiology Lab**

How is a new neuroscientist made? In the lab, of course. There are many meanings to this somewhat humorous answer, and I attempt to tease out a few of them by examining the dynamics of action that simultaneously engage and produce junior scientists over the course of a research project, as well as initiate the tempo of a career in neurobiology. This paper is based on ethnographic fieldwork conducted in a lab working on two large projects, one being the elucidation of the molecular and genetic properties of Huntington's disease, the other being an attempt to broaden and deepen extant understandings of the cellular and biochemical processes of memory. In addition, I use interviews with lab personnel to analyze modes of action and the logics of practice that help to reproduce the field of neuroscience. The emphasis here is on location: how does the neuroscience lab, as a social and physical space, shape the process of becoming a neuroscientist? This project thus crosses several domains of sociology, including the sociologies of education, professions, organizations, identities such as race, class and gender, as well as social geography and the sociology of knowledge, science, technology and medicine.

4D: Art, Science, and Science Fiction in the 1960s (San Diego)

Linda Dalrymple Henderson (University of Texas, Austin), organizer/chair

Bruce Clarke (Texas Tech University), **Robert Smithson's Sites/Nonsites and Damon Knight's *Beyond the Barrier***

The boundary conditions in play in Smithson's Sites/Nonsites can be graphed dialectically, but also cybernetically. Here I try to rethink Smithson's art and thought through a neocybernetic conceptual frame that exploits the double positivity of two-sided forms and their social and communicative operations rather than the double negativity of dialectical interplays between thesis and antithesis. In this regard, Smithson's science-fiction references in "Entropy and the New Monuments" are suggestive. Placing Smithson's excerpt from Damon Knight's *Beyond the Barrier* back into its context in Knight's novel recovers some interesting resonances among narrative and sculptural framing, cognitive paradox, and the dramatization of cybernetic forms.

Linda Dalrymple Henderson (University of Texas, Austin), **Robert Smithson, Science Fiction, and the Fourth Dimension in the Mid-1960s**

Little has been written about sculptor and earthwork artist Robert Smithson's interest in four-dimensional space in the 1960s, a concern he shared with a group of artists around the Park Place Gallery in New York. If Smithson rejected modernism's idealism and belief in transcendence, which had often been linked to higher dimensions, he found a different spatial fourth dimension in the realm of fantasy/science fiction (e.g., Lewis Carroll, Norman Spinrad) and the writings of Buckminster Fuller and Martin Gardner. These sources lie behind Smithson's 1965 *Enantiomorphic Chambers*, which, along with works by the Park Place Group, are the visual focus of this paper.

Anne Collins Goodyear (National Portrait Gallery), **Science Fiction, Space Exploration, and the Art of Panamarenko**

This paper explores how fantasies of space travel popularized during the 1950s entered the realm of the fine arts in the 1960s. I focus on the early career of Panamarenko, a Belgian artist who immersed himself in the culture of space during the 1960s, adapting the name of the popular airline, Pan American, to identify himself.

4E: Stories from a Science and Literature Partnership: Engaging Interdisciplinarity in Theory and Practice (roundtable) (Pacific B)

Jeffrey Bonadio (University of Washington) & **Kari Tupper** (University of Washington), organizers/chairs, **Phillip Thurtle** (Carleton University), **Elizabeth Rutledge** (University of Washington)

During the last year, faculty members at the University of Washington have been working actively to forge curricular and research alliances between the sciences, the social sciences, and the humanities. This roundtable discussion panel will focus on some of these interdisciplinary teaching and research partnerships. Four faculty members will present results of their collaborative work and discuss how the process of forming alliances across disciplines can work: the difficulties it entails and the possibilities it presents. Jeffrey Bonadio, M. D. (Bioengineering, University of Washington) and Kari Tupper, Ph. D. (Comparative History of Ideas and Women Studies, UW) team teach a course entitled "Genomics, Human Life and the Future of Society;" they are also currently designing a proposal for an Interdisciplinary Center for Science, Technology and Society Studies at the University of Washington. Phillip Thurtle, Ph. D. (Sociology and History of Science, Carleton University) and Elizabeth Rutledge, M.D. (School of Medicine, UW) team taught a course last year entitled "In Vivo: Traversing Scientific and Artistic Observations of Life."

The starting point for these courses, and of our collaboration, is our belief that recent developments in science, including the acquisition of genomics technology, have raised crucial questions about what it means to be a human being, and that those questions must be thoroughly addressed by scholars from many disciplinary backgrounds. We believe that interdisciplinary team teaching facilitates an important new way for both faculty and students to think, learn, and communicate about the meaning of human life in the genomics age. More generally, we also are convinced that faculty collaboration in both teaching and research is key to bridging the widening gap between the sciences and other fields of study in research institutions.

4F: "Eating Well": Cultural Studies, Food, Hunger, and Globalization (Pacific C)

Rob Wilkie (State University of New York at Albany), organizer/chair

Food has become a controversial issue in globalization debates, and a boundary question in cultural studies. Beginning with Derrida's notion of "eating well", the panel will engage contemporary debates over "food"--whether, in the global marketing of food, we are witnessing the development of a world cuisine or the commodification of diet--as a means of exploring the possibilities and limits of a new activist cultural studies of food. The main concerns of the panel are food, world hunger, class, and nationality and whether an activist materialist cultural studies could be an ally in the struggles for freedom from necessity.

Jennifer Cotter (University of Pittsburgh), Delectable Feminism or Subsistence Feminism?: For a Labor Theory of Gender and Food

Jennifer Cotter's essay examines feminist theories that explain the materiality of gender and food through either the sensations of the "eating body" or "self-subsistence". Both approaches translate the materiality of gender and food into an ineffective "ethical consumption" as a means for addressing unequal economic access in capitalism. What shapes women's relationship to their bodies, needs, and food, Cotter argues, is not consumption but class and the dialectical praxis of labor in which, by acting on external nature and transforming it, humankind also transforms its own nature.

Kimberly DeFazio (State University of New York at Stony Brook), 'Infinite Hospitality': Hunger and the Western Cultural Imaginary

Kimberly DeFazio's paper inquires into contemporary theoretical and activist approaches to hunger, which treat hunger as either a "symbolic" act of ethical care for the other (what Derrida calls "infinite hospitality"), or as a matter of objective re-distribution of food surpluses (i.e., "humanitarian aid"). She argues that hunger is the effect not simply of ill-distribution of resources but inequality at the point of production, and her paper offers a new materialist understanding of hunger, agribusiness, class and some of the effects of such a view of hunger for cultural theory and pedagogy.

Robert Faivre (Adirondack Community College), Alcohol is Sublime

Robert Faivre's paper addresses representations of alcohol. The paper is an analysis both of contemporary cultural theory which draws on semiotics and poststructuralism and regards alcohol to be significant in terms of consumption, excess, and desire, and of historical materialist theory which finds the meaning of alcohol in production, surplus labor, and need. The paper stages a debate to the effect that one does not drink alcohol, rather one drinks representation, which is not a matter of textualities-in-play, but of class. To put it differently but more emphatically, one always drinks one's class.

Amrohini Sahay (State University of New York at Stony Brook), Global Culture and Material Food: "Fusion Cuisine" and its Class Other

Amrohini Sahay's paper critiques the concept of "fusion cuisine" as it circulates in the new transnational cultural studies. Fusion cuisine is a metaphor for cosmopolitan cultural hybridity (what Simon During calls the "global popular") and its purportedly liberatory "imagining" of global space without borders. Her paper debates the question: is fusion cuisine a sign of a resistance "from below" to a hegemonic national culture? Or does it function as part of the class languages of imperialism to smooth the way for transnational business which has no need for the "national"?

3:00-3:45 pm: BUSES TO HUNTINGTON LIBRARY

3:15-4:30 pm: VISIT HUNTINGTON LIBRARY

4:30-5:45 pm: PLENARY LECTURE

Charles Falco (University of Arizona), The Science of Optics; The History of Art

Following an extensive visual investigation of western art of the past 1000 years, recently renowned artist David Hockney made the revolutionary claim that artists even of the prominence of van Eyck and Bellini must have used optical aids. In this talk I show a wealth of optical evidence for his claim that Hockney and I subsequently discovered during an unusual, and remarkably productive, collaboration between an artist and a scientist. These discoveries convincingly demonstrate optical instruments were in use -- by artists, not scientists -- nearly 200 years earlier than previously even thought possible, and account for the remarkable transformation in the reality of portraits that occurred early in the 15th century.

5:45-7:00 pm: RECEPTION AT HUNTINGTON LIBRARY

6:30-7:15 PM: BUSES TO HILTON

Saturday, Oct. 12

8:00 am-5:00 pm: Registration (Pasadena)

8:00-8:30 am: Morning Coffee (Pasadena)

9:00 am-5:00 pm: Book Exhibit by The Scholar's Choice (Pasadena)

8:30-10:00 am: SESSION V

5A: Health, Bodies, Biology 1 (Pacific B)

William Etter (University of California, Irvine), chair

Suzanne Black (Southwest State University), *Becoming Imperfections: The Overlapping Epistemologies of Pattiann Rogers and Rita Levi-Montalcini*

The last fifteen years have produced an exciting body of scholarship on gender, culture, and science. To what extent, though, does this research affect practicing scientists or creative writers with an interest in science? In my paper, I look at several poems by Pattiann Rogers and several passages from the autobiography of embryologist Rita Levi-Montalcini. Both women's writing seeks to bridge the two cultures gap, and they both draw on the concepts of a developmental biology. I argue, however, that although their ideas show an awareness of the knower's gender, neither writer takes an explicitly feminist view of science itself.

Jennifer Kuczynski (University of Washington), *Objective Bodies: Identificatory Conflict between Autopathography and Medical Narratives*

In *Recovering Bodies: Illness, Disability, and Life-Writing*, Thomas Couser defines *autopathographies* as autobiographical accounts of illness. These serve to recover variously dysfunctional bodies from domination by others' authority and discourse, to convert the passive object into an active subject (291). Through an examination of the contradictory discursive methods of Audre Lorde's *Cancer Journals* and Couser's own autopathography, I propose that rather than de-objectifying the body, these narratives serve as an alternate objectifying narration of the body. Although it resists and rewrites medical narratives of the body, autopathography does not escape the objectification begun by the medical narrative.

Sean Scheiderer (Ohio State University), *Authority Through Alliance in the Fact-(Un)Making of Popular Diet Literature*

A comparative analysis of two popular books on dieting, low-carbohydrate *Dr. Atkins' New Diet Revolution* and low-calorie *Dieting for Dummies*, trying to determine whether one nutritional paradigm is more *scientific*. Sociologist of science Bruno Latour explains that literature becomes 'technical' "when the local resources of those involved are not enough [and] it is necessary to fetch further resources coming from other places and times," a rhetorical maneuver he calls 'ally-making' while insisting that the making of scientific facts is thus always a 'social' endeavor. Both these books utilize such a strategy throughout, but this presentation focuses on just their covers.

5B: Minority Interventions in Science and Literature (San Diego)

De Witt Kilgore (Indiana University), organizer/chair

De Witt Kilgore (Indiana University), *Who Can Open the Doors?: The Racial Ground of Political Hope in Star Trek*

For almost four decades the Star Trek franchise has made a particular view of the social consequences we expect from science and technology popular. What then do we make of the always apparent presence of racial minorities in its vision of technological utopia? African- and Asian-American characters have been pivotal in articulating an astrofuturism that both reinforces and seeks to transcend the political significance of race. We will examine the roles they have played within Starfleet narrative and how the actors who create them seek to make its space futurist vision accountable to the historical experiences of African- and Asian-Americans.

Doris Witt (University of Iowa), *"One Small Step for 'The Man'": The Dark Side of the Moon Race*

This paper uses a focus on "Afro-futurism" to advocate for a reorientation in dominant models of space exploration away from Cold War contestation between the US and USSR and toward the global history of race, capitalism, and colonialism. In the process of considering the ways in which musicians such as Duke Ellington, Sun Ra, and George Clinton used space-themed music and commentary to negotiate between domestic and international resistance struggles over race from the mid-1950s to the early 1970s, I argue that the contemporary discursive formation of Afro-futurism should itself be interrogated as a site of ideological ambiguity.

Jeffrey Tucker (University of Rochester), *Roots in the Stars: Attitudes Toward Space Exploration in African-American Science Fiction*

The temporal proximity of Sputnik and the Little Rock Crisis suggests the contiguity of space exploration and black liberation. A more substantial connection would seem unlikely given black leaders' criticism of the billions spent on NASA. However, the fiction of Samuel R. Delany and Octavia E. Butler, science fiction's most prominent black voices, offer other perspectives. Moreover, these writers interrogate assumptions that technological culture and black culture are mutually exclusive categories.

5C: Rereading the Writing of the Book of Nature (Pacific C)

Arkady Plotnitsky (Purdue University), organizer/chair

Arkady Plotnitsky (Purdue University), *"In Principle Observable": Algebras and Geometries of Writing and Reading Nature and Art in Kant, Proust, and Heisenberg*

Werner Heisenberg's discovery of quantum mechanics was in part enabled by basing his new theory on "relationships between quantities which in principle are observable." As a result, quantum mechanics was no longer a theory dealing with its principal

objects, quantum objects (say, electrons in the atoms), in the way classical, such as Newtonian, mechanics deals with classical objects (say, planets moving around the sun). For, Heisenberg argued, one could not, in principle, observe quantum objects or their conventional physical properties, such as the position or momentum of an electron in an atom. Indeed, ultimately such properties were argued to be not only, in principle, unobservable but, in principle, unassignable. The new theory related to the observable effects of the interactions between unobservable entities and measuring instruments upon those instruments. In the process, Heisenberg revolutionized not only physics itself, but also the relationships between mathematics and physics. The paper will discuss the epistemological nature and limits of this revolution, in part by relating Heisenberg's quantum epistemology to Kant's epistemology of the sublime in *The Critique of Judgment* and to Marcel Proust's epistemology of artistic perception. In all these cases one encounters epistemology based on radically separating what is observed or perceived from the system (historical, theoretical, aesthetic or other) into which it is supposed to be included. Thus, in dealing with the observable data in question in quantum mechanics, Heisenberg, in Bohr's words, "succeeded in emancipating himself completely from the classical concept of motion." The paper will also examine the relationships between this epistemology and Edmund Husserl's "principle of all principles," which defines the primordial Intuition as a source of authority [Rechtsquelle] for knowledge. Ultimately, there emerges a new way of reading and writing nature (it may not longer be possible to speak of "the book of nature" under these conditions) in science, philosophy, and art.

David Reed (Duke University), *Designs on the Book of Nature: Written and Visual Presentation in Science and Art in the Jewish, Christian and Islamic Traditions*

The topos of "The Book of Nature" is enriched by recognition of the many ways to place or locate "Books." Some of the most powerful of these placings arise from "the religions of the book," namely Judaism, Christianity and Islam. More properly perhaps, these should be entitled "the religions of the books" since each bears not only a different scripture but also a different placing of the written. Within each of these religious traditions the written word is juxtaposed with and often opposed to other modes of visual presentation. When these topographies of the written and the designed are displaced to the realm of the "Book of Nature," new perspectives on the variety of ways in which diagrams, graphs, pictures, and notations can and do operate in scientific arguments are opened up. In the process we reenact philosophical encounters (ancient and modern) between presence and distance, spoken and written, rhetoric, grammar and logic.

Jonathan Goodwin (University of Florida), *The Rhetoric of Stephen Wolfram's A New Kind of Science*

Published to much acclaim just this May, Stephen Wolfram's magnum opus purports to revolutionize science with cellular automata modeling. Many people claim to revolutionize science, however, and Wolfram's book shares the self-publication and consequent lack of peer-review that characterize most of their efforts. Commentators have often compared Wolfram to Galileo and Newton (either to the *Principia* or the alchemical work for the latter, depending on mood), and there are many rhetorical convergences between them.

5D: Early Stirrings: The Interdisciplinary, Then and Now (Monterey)

Amy King (California Institute of Technology), organizer/chair

The purpose of this panel is to theorize the issue of the interdisciplinary in literature and science studies through specific historical intersections. Each of the three papers concentrates on the shared historical period of the late eighteenth to mid nineteenth century, and in so doing offers a collective vision for the way in which the turn of that century naturalized distinctions that we draw more readily between the aesthetic and the scientific.

Amy King (California Institute of Technology), *Gilbert White and the Practice of Literary Detail*

A painstaking and beautifully written account of the flora and fauna of the parish in which Gilbert White lived, *The Natural History of Selbourne* (1789) borrows from the epistolary style common to the early novel; it is a text of particularities — a narrative that established for many generations of readers in the nineteenth century the power of detail and thick, local description. The purpose of this paper is to explore the dense interconnections between narrative natural history — the primary observational science of the eighteenth and early nineteenth century — and realist representation as exemplified by White's neighbor and near-contemporary Jane Austen. Through this juxtaposition a cultural poetics of observation will emerge: a style of vision that depended for its force on the power of the detail, a power that was not merely an *effet du réel* but a claim to heal the gap between subjective responses to nature and scientific empiricism.

Nicholas Dames (Columbia University), *Physiology and the Rise of Novel Theory*

An account of the origins of Anglo-American and French novel theory in mid-Victorian experimental physiology, which provided literary critics of the time (G.H. Lewes, E.S. Dallas, Hyppolite Taine) with a theory of the novel genre based on the autonomic responses of its readers; and an account of the gradual dissociation of novel theory from scientific psychology, which entailed the disappearance of the reader from later canonical theories of the novel.

Noah Heringman (University of Missouri), *Natural History Before and After the Disciplines*

In an era in which loosely organized "sciences" such as botany and chemistry were beginning to reveal their vast economic potential, shrewd observers — such as "Peter Pindar" in his 1788 satires on Sir Joseph Banks, the architect of imperial science — focused, much like theorists today, on the connections between knowledge and the market and on related conflicts between disciplines. This paper juxtaposes eighteenth-century anti-disciplinary satire against present-day phenomena such as the "nanoscience" Ph.D. and the "interdisciplinary war machine" to consider how the history of natural history might help to produce a post-disciplinary climate.

5E: Art and Optics: The Hockney/Falco Thesis (Pacific A)

Amy Ione (The Diatropé Institute), organizer/chair

David Hockney's claim that he has rediscovered a lost trade secret of art's grand painters has been buttressed by Charles Falco's assertion that he has proved the Hockney thesis scientifically. Both the claim and the 'proof' have incited much controversy and the responses touch upon a broad range of topics. Indeed, the ensuing debates are particularly striking in the way they have encouraged those of diverse disciplines to look closely at areas normally outside their parameters. Scientists are considering the way paintings are constructed and art historians are re-examining the research done to date on the discovery of a number of optical devices. Additionally, interested parties have been looking at mirror images with a new fascination, even asking how concave and convex

mirror are crafted. As we re-evaluate the veracity of paintings the challenges multiply. Can we determine whether the structure of complex three-dimensional forms were traced and whether 'secret methods' lurk behind the illusionistic shadows and reflections that we see? From the excitement of the debates, these questions do not appear to be trivial questions. This panel will discuss some topics at the core of the debates. In closely evaluating the Hockney/Falco thesis each of the four scholars will focus on one of the vantage points now being explored and place their work in the context of the larger debates. All have been at the forefront of these discussions and thus have been involved in formulating some of the responses to key ideas contained within the thesis. The session is intended to resolve some issues and stimulate further debate. As such, after each panelist presents work related to the Hockney/Falco thesis, we will allow time for audience reactions and for their participation in the discussion.

Amy Ione (The Diatropo Institute), **The Hockney/Falco Thesis: Rewriting History with a Bold Idea?**

Since the emergence of the Hockney/Falco thesis there have been a number of responses from within the art community. Some have asked "Did they Cheat?" and others have answered that artists have always used devices. Within this context a greater awareness of how artists work has surfaced. Looking at the evidence presented by scientists, the contributions of artists, and research by historian of both art and science this paper will consider whether a bold idea can rewrite history.

Christopher Tyler (Smith-Kettlewell Eye Research Institute), **Sources of "Opticality" in Renaissance Painting: An Analytic Reappraisal**

Hockney and Falco claim that the 'optical look' appeared in paintings after about 1430 because artists began using optical projection in restricted regions, offering evidence of multiple local vanishing points in many Renaissance paintings. Careful evaluation reveals that even the local perspective is incoherent in the cited paintings, implying composition purely through artistic intuition rather than optical aids (or accurate geometric methods). Moreover, the narrow depth of field of available optical devices should imply a wealth of out-of-focus regions. No Renaissance paintings exhibit this literal optical look.

Michael John Gorman (Stanford University), **Art, Optics and History: New Light on the Hockney Thesis**

Based on an analysis of sixteenth century optical writings, especially the works of the Neapolitan magician Giambattista della Porta, this paper will consider the Hockney thesis from the point of view of the history of science and technology. Did the projective system described by David Hockney and Charles Falco exist? If so, when was it created? What optical devices were really available to artists in the fifteenth and sixteenth centuries? Rather than suggesting that artists never used optical instruments of any kind, my goal is merely to understand what optical experiments artists may plausibly have made at a particular historical moment.

David Stork (Ricoh Innovations and Stanford University), **Optical Rebuttals to Hockney's Explanations of "Opticality" in Early Renaissance Painting**

We explore the technical optical grounds for the Hockney/Falco projection hypothesis in their favored Renaissance paintings, including works by van Eyck, Lotto, Campin, and de la Tour. We also consider Giambattista della Porta, who gives us the first textual record of such image projection, and whether his contemporary Caravaggio might have used such a method. Our analysis of constraints in illumination, studio setup, focal lengths, color, brushstrokes and alternate explanations leads us to agree with the vast majority of published reviews of *Secret Knowledge* that proponents' claims for "proof" of the projection hypothesis in the early Renaissance are unjustified.

5F: Canceled

Because several speakers were forced to withdraw, the Science and Religion sessions have been combined as session **6F**.

10:00-10:30 am: Refreshments (Pasadena)

10:30-12:00 noon: SESSION VI

6A: Health, Bodies, Biology 2 (Pacific A)

William Etter (University of California, Irvine), chair

Maura Brady (LeMoyne College), **Representing Stephen Hawking: Science, Technology and Disability**

In most popular narratives about Stephen Hawking, the physicist's scientific achievement represents the transcendence of mind over (disabled) body, the escape of a powerful intellect from the wheelchair's confines to search out the truths of the universe. Recently, however, this dichotomy has been called into question by more complex and powerful models of agency in which Hawking's prostheses (the motorized wheelchair, the voice synthesizer) function rhetorically as a powerful emblem for his intellectual achievement. Hawking's image has become that of a cyborgian superhero of science, the sign of whose disability, paradoxically, is also a sign of his power.

William Etter (University of California, Irvine), **"Physical Affrightments": Edgar Allan Poe's Fictional Resolutions of Bodily Crises in Antebellum Medical Science**

During the period in which Edgar Allan Poe composed some of his most notable comic tales (the late 1830s to the mid 1840s), medicine in antebellum America was perched precariously on problematic divides — learnedly "respectable" science versus popular science and rationalism versus sensationalism — that left visions of American bodies chaotic. Discussing three of Poe's greatest

comedic works, this paper argues Poe struggled to provide some stability to this chaos by demonstrating the superiority of professional medicine over "quackery" and physical normality over disease, disability, and death.

Martha Stoddard Holmes (California State University, San Marcos), **Pain and Professionalism: Victorian Physicians and the Literature of Pain Relief**

This paper discusses the medical, rhetorical, and literary tools Victorian doctors used to treat patients dying in pain. Drawing on primary texts by four doctors, I discuss the way that literary allusion and a generalized "literariness" functioned both to mark the writers' status in an era of professional hierarchization and to narrate for themselves and their patients the otherwise inarticulate aspects of pain and suffering. I will comment on the tension between these two functions and connect it to related debates in the twenty-first century.

6B: Roundtable On Race And STS (Pacific B)

Carol Colatrella (Georgia Institute of Technology), organizer/chair

The five participants propose to discuss issues of race in science and technology studies teaching and research. Each participant will present a short (five-minute) paper (summaries below; written papers will be made available at the conference). Following the formal presentations, participants will invite attendees to participate in a discussion of strategies in teaching and researching race in STS contexts.

Mita Choudhury (Georgia Institute of Technology), **Race and Technology: the Unformulated Equation**

Due to the predominance of 'gender and technology' as subject and now a trendy area of research and discussion, the issues of technology and race and technology and other racial, national and cultural divides have been grossly marginalized. Indeed, racism hardly enters into the sophisticated epistemic frameworks that seek to explain variously the postmodern, posthuman condition. Paul Gilroy's recent book, *Against Race*, further complicates the issue since his argument invites us to go beyond the obvious divides to seek "ethical" solutions to current problems in American society. How, then, can "race" be taught at a technological institute where the social sciences and cultural theories and philosophies are, for the most part, absent in the curriculum? And even if there were consensus about the importance of race-related issues in a high-tech society, how can theoretical interventions such as this one here penetrate the airtight formulas of means, methods and techniques for improving the human condition (which is technology's main thrust)?

Carol Colatrella (Georgia Institute of Technology), **Teaching Tuskegee and David Feldshuh's *Miss Evers' Boys***

I have often used texts relating to the Tuskegee syphilis study in cultural studies of science and technology courses. Such texts include historical accounts of the study, the script of David Feldshuh's play *Miss Evers' Boys*, the movie version of that play, and a documentary about the history of the syphilis study and the making of Feldshuh's play. Students at two different technical institutions have responded enthusiastically to the assignment with the greatest interest in the topic emerging when I've asked selected individuals to read aloud from the play's script and the least enthusiasm for the documentary, which nicely puts historical source material and dramatic rendering in context. My hypothesis: the more work a student has to do to perform a text about race, the more likely will the student, regardless of racial background, embrace the validity of discussing race in the university classroom.

Cheryl Leggon (Georgia Institute of Technology), **Race, Gender, and Reproductive Technologies**

In much of the literature on science, technology and gender, race is marginal at best and absent at worst. I argue that race is a critical variable that mediates how gender, science and technology are experienced. The area of reproductive technology provides an excellent illustration of how race mediates the ways in which gender, science and technology are experienced. In the public mind, the concept "reproductive technology" refers to those procedures that facilitate pregnancy (e.g., in vitro fertilization). Research indicates that in the United States, technologies facilitating reproduction tend to be used by white (upper- and upper middle class) women. However, "reproductive technologies" include not only those that facilitate reproduction but also those that impede it temporarily, e.g., the diaphragm, or prevent it permanently, such as sterilization. These technologies tend to be used predominantly on women of color. Moreover, experience with technology and science being used as a tool for their oppression, continues to make women of color wary of embracing technological and scientific "advances". Thus, race plays a significant role in the differences in meaning and use of reproductive technologies. These differences send different messages to different groups. The message for white (upper and middle class) women is to focus on increasing reproduction; the message to working class and poor white women and to women of color is to focus on limiting reproduction. Taken together or separately, these messages have significant policy implications.

Patrick Sharp (California State University, Los Angeles), **Darwinist Visions of Race Supremacy**

I will discuss how I approach teaching Darwin's *The Descent of Man* as well as Darwinist narratives that emphasize white superiority. In particular, I will focus on how science and technology (tool use) is seen as a primarily European talent, and how this still manifests itself in popular culture.

Althea Sumpter (Georgia Institute of Technology), **Multimedia Ethnography: A Dual Discipline Approach for Disclosing Ethnicity and Culture**

Multimedia ethnography allows students to learn traditional ethnographic techniques and then develop multimedia presentations of research outcomes. Students thus learn greater appreciation for encounters with ethnic groups and cultures different from their primary environments. Ethnographic techniques are investigated through existing research on the Gullah culture off the coast of South Carolina and Georgia. Multimedia Ethnography final class productions help students understand human relationships not just in terms of race, but also in terms of ethnicity and/or culture--from a consciousness more specific than national identity.

6C: Computing and information (Pacific C)

Stephen Kern (Northern Illinois University), chair

Mark Hansen (Princeton University), **The Digital Topography of *House of Leaves***

In my talk, I shall take seriously the bold claim underlying Mark Danielewski's novel *House of Leaves*: namely, the equation of the materiality of the novel with the workings of the digital computer. *House of Leaves* is, as Kate Hayles has observed, a novel about mediation. It insistently foregrounds the circulation of simulacra in the absence of any original referent (in this sense, the novel's materiality is inconsistent and impossible, since it is the recovered and enhanced narrative by a blind narrator of the events recorded in a film about a house whose inside is larger than its outside). By centering the narrative on the making of this impossible film, Danielewski asserts the identity of novel with digital space. For what could the topological (or topographic) figure of the house's interior (here both the house as the impossible 'referent' of the film and the 'house' as the novel itself) denote if not the digital architecture of the computer itself? And by concentrating the novel's various levels of mediation on its effects on readers (Zampano's narrative of the film; Johnny Truant's annotations to this narrative; the supposed editors' manipulation of the Zampano-Truant text; and finally, the reader's synthesis of all of these), Danielewski correlates this identity of novel and digital space with a new problematic of readership in the age of media ecology.

Ziv Neeman (Columbia University), "The Machine Can Be Redirected": On the Notion of Programming in William S. Burroughs' *Cut-Up Trilogy*

Burroughs elaborates in *The Soft Machine* (1961), *The Ticket that Exploded* (1962), and *Nova Express* (1964), a fascinating, iconoclastic conceptualization of programming. These volumes were created largely from textual collages generated via the 'cut-up method.' The technique forms the basis of Burroughs' notion of attacking and counter-programming computers—in a manner anticipating cyber-war; and as a means for deprogramming minds from repressive thoughts. Ultimately, the text of the *Trilogy* itself constitutes a deconditioning program. I conclude by noting the historical limits, and aesthetic and political ambivalence these texts display towards computers and the possibility of counter-programming.

Martin Rosenberg (PSU McKeesport and Duquesne University), Parallel Processing: As History; and as a Trope for History

My past work on tropical drift across disciplines focused on the term chess, and I sought to map that drift through a hypermedia project called *Chess RHIZOME*. At that point, I began using the term "field of interpretive immanence" to describe the trans-disciplinary site where such drift might take place. *Chess RHIZOME* attempted to visualize such a field where one could witness the actancy of tropes as they performed work in disciplines distinct from their origins. Since then I've come to my senses and have applied Peter Galison's simpler term "trading zone" to describe how tropes can be thought of as tools capable of performing work just as particle accelerators do. I would like to use this SLS paper to report my progress on a similar project mapping the trans-disciplinary "trading" zone of the term "Parallel Processing," as a site for observing the drift of this concept into other disciplines to and from computer science, and as a governing metaphor for a repeatable tactic for researching intellectual history (in progress) generally speaking.

Ronald Schleifer (University of Oklahoma), Information and Materialism

In *Cybernetics* (1948) Norbert Wiener cryptically comments that "information is information, not matter or energy. No materialism which does not admit this can survive at the present day." This talk focuses on the place of Charles Sanders Peirce's "indexess" in relation to Wiener's comment generally and specifically in relation to both post-Newtonian physics — what John Wheeler calls the "irreversible act" of quantum "registration" — and information theory. That is, "Information and Materialism" examines the re-definition of "matter" in light of quantum theory, and examines the ways in which information complements traditional — Enlightenment — notions of matter and energy. In the course of its discussion, it offers a framework in which the category of "force" in physics can fruitfully be understood as "information." An important focus of this introductory chapter examines Peirce's tripartite icon-index-symbol typology of semiotics in relation to physics, biological, and semiotic sciences. Particularly, it examines the central controversy of quantum physics — the scandalous wave-particle complementarity — in terms of the opposition of icon and index in Peircean semiotics and examines, as well, the various "interpretations" of quantum physics in terms of Peircean symbols.

6D: Guest Scholar Session: Edging the Work of Hillel Schwartz into Cultural Studies of Science (Monterey)

Stefan Helmreich (Pitzer College), organizer/chair

Hillel Schwartz (University of California, San Diego), respondent

The wide-ranging, unconventional work of historian Hillel Schwartz orients this panel on the cultures of science. Schwartz charts the rise of configurations axial to but also at the edges of our consciousness — from modes of bearing weight, to styles of keeping sacred and profane time, to cultures of copying. Instead of a genealogical or archaeological model, Schwartz's heterodox method of analysis by similitude suggests a fluid dynamics that follows flows of history into eddies swirling backward and forward in time. We propose that Schwartz's work, setting up discursive diffraction patterns rather than unified forcefields of theory, can provide tactics for cultural studies of science.

Heather Paxson (Pitzer College), Slow Food: Satisfying Ethical Appetites

Heather Paxson draws on *Never Satisfied* to examine the international eco-gastronomical Slow Food movement and its commitments to conjoining pleasure, ethics, and science in advocating convivial meals, artisanal foods, and biodiversity.

Stefan Helmreich (Pitzer College), Life's Signature: Designing the Astrobiological Imagination

Stefan Helmreich investigates the semiotics of the most recent incarnation of the scientific search for life on other planets by looking at the first issue of the journal *Astrobiology*, published in January 2001. The analysis is filtered through Schwartz's work on the turns of centuries, design, and noise.

Richard Doyle (Pennsylvania State University), Open Source Simulacra and the Cannabis Genome Project

Richard Doyle works out of a Petri dish of *The Culture of the Copy* to discuss relations among hoax, PCR, and drug design.

Michael Witmore (Carnegie Mellon University), "Simple" Revelations: A Case of the French Prophets

Michael Witmore examines how Schwartz's and others' writing about the French prophets positions vatic speech as a mode of revelation and discovery. The paper follows the consequences of such analyses for our attempt to engage "the contingent" in the study of science and its immanent culture.

6E: Picturing Space: Methods, Implications And Meaning (San Diego)

James McManus (California State University, Chico), organizer/chair/respondent

Andreas Teuber (Brandeis University), Mathematical vs. Optical Perspective: The Implications for Art and Art History

In *Art and Illusion* Ernest Gombrich locates the origin of perspective in the early fifteenth century and then traces its development until the end of the nineteenth century when paintings start to go "flat." With recent discoveries that Western painters also relied upon optical devices as an aid to their painting, it has become evident that there is indeed more than one perspective for a painting to be in. Gombrich failed to notice this difference and his failure has serious consequences for his "theory" of the development of painting through the early modern period. What is the difference between these two perspectives? What is the difference between mathematical perspective (described by Alberti in *De Pictura* and depicted by Durer in his famous woodcut) and optical perspective evident in, say, Vermeer's "The Music Lesson"? And what implications might such differences have both for the art itself and art historical practice?

Susana Halpine (Candle Light Productions) & Melissa Katz (Brown University), Smoke and Mirrors: Artists, Optics, and the Search for the Truth

Recent discussions regarding the Old Masters and their use (or not) of optical devices in the creation of their paintings have tended to deal in generalities, searching for theories to answer larger questions, rather than be confined by the factual record. All sides of the argument are guilty of the sin of projection, moving too confidently from "what the artist might have done" into "how the artist did it." This paper will attempt to maintain neutrality within a thorny subject, while separating the known facts from the wishful thinking, to assess which of the current arguments are on shaky ground, and which have firm foundations.

6F: Science and Religion (Santa Barbara)

Murdo William McRae (Tennessee Technological University), chair

Lisa Long (North Central College), Beyond the Gates: Elizabeth Stuart Phelps's Fiction, Post-Bellum Physics, and the Ends of Science

This paper examines how Elizabeth Stuart Phelps constructs notions of the afterlife through the hermeneutics of physics in her novel, *Beyond the Gates* (1883). Though heaven is thought to be most ethereal of places, Phelps's protagonist finds upon her arrival there that only scientific tropes convey its reality. Phelps's work resonates with the contemporaneous claims of prominent physicist Albert A. Michelson. Michelson's work gauging the irreducible nature of light waves and his claims that physical discovery was nearing its end reveal that he and Phelps participated in what I view as a culture of scientific ends.

Kristina Lucenko (University of Southern Mississippi), God, Science, and the Notion of Experiment in Mark Twain and Emily Dickinson

Mark Twain and Emily Dickinson lived during a time of radically shifting paradigms, when scientific developments challenged traditional religious belief systems. The promise extended by both science and religion is one of certainty and truth, and to natural skeptics of orthodox religion and literary convention such as Twain and Dickinson, questions of knowledge and craft are central. Voracious readers, they kept on top of scientific advances, and through their writing, as through the scientific process itself, they explored the boundaries of human understanding and experience. While they differed stylistically — Twain's prose is garrulous, vernacular, and overtly funny, and Dickinson's verse is oblique, elliptical, and subtly ironic — they both wrestled with modes of knowing, both empirical and divine. My paper will analyze how Twain's use of the vernacular, especially in *Huckleberry Finn*, and Dickinson's idiosyncratic poetic technique, were "experiments" that tested formalized types of discourse. In these two writers, whose work explores brutality, corruption, and destruction in an enigmatic universe, their faith and skepticism leads each to resist conclusion, which in turn complicates our own impulse to "solve" them.

Deborah Scott (St. Joseph's University), Science as Messiah in Isaac Asimov's Early Fiction

This paper explores Jewish cultural influences on Isaac Asimov's early science fiction, by situating it in the context of early and mid-twentieth-century Jewish discourse about Science as a cultural institution. Troubled by widespread anti-Semitism and other prejudices besetting Western society, Jewish scientists, including Asimov, regarded Science as an enterprise potentially capable of overcoming bigotry and parochialism. Focusing on Asimov's science fiction of the 1940s and 1950s, this paper examines the tensions and contradictions in these cosmopolitan Jewish intellectuals' attempts to construct Science as Messiah, the source of a more just and harmonious way of life for all humanity.

Murdo William McRae (Tennessee Technological University), Omniscient and Evolutionary Knowledge

For Stephen Jay Gould, religion and science must respect the principle of NOMA, or "non-overlapping magisteria." Inherently apodictic and hegemonic, claims of omniscience in one magisterium, or "domain of authority in teaching," nonetheless impose on the other, as John Milton's *Paradise Lost* and Stephen W. Hawking's *A Brief History of Time* illustrate. Because he views Darwin in similarly apodictic and hegemonic terms, Gould fails to engage the issue of omniscience, thereby ignoring certain theological and historical perspectives on the evolution of knowledge which would better serve his argument.

12:15-1:45: SLS CONFERENCE BUSINESS LUNCH (San Gabriel)

2:00-3:30 PM: SESSION VII

7A: Language and Semiotics (Santa Barbara)

Alan Beyerchen (Ohio State University), chair

James Glogowski (Psychotherapist, Private Practice), Aspects of Language in the Human Sciences

This will be a discussion of what an anthropologist might call “field notes.” The field, or reference space is the clinical space of psychotherapy. This is a space of particular relevance for the question of the intersection of language and the human sciences. The center of gravity locates itself in the context of evolution, with special attention to the phenomenon of speech. The central question (which of necessity will remain open) will concern what to do with language, given what we have come to know about the human as animal.

Robert Markley (West Virginia University) & Michelle Kendrick (Washington State University), Visual Knowledge and the New Literocracy: Multimedia, Systems Theory, and Incompetence

Because literacy is always differential, it can be judged only against value-laden assessments of illiteracy and incompetence, assessments that paradoxically enforce normative standards which are themselves fraught by tensions and inconsistencies. In this paper we examine the dialogic relation among technologies of inscription, “literacies,” and embodiment. Taking as our point of comparison email as a hybrid of conflicting literacies with the semiotic demands made by Samuel Richardson’s epistolary novel *Clarissa* (1747-49), we argue that any normative conception of literacy defers “mastery” of technologies of inscription with ensuing consequences for embodied subjectivity.

Mirko Petric (University of Split), Semiotics As Techno-Science: From Society To Technology And Back?

This paper discusses the possible field of operation for semiotics conceived of as a traditional humanistic discipline in the framework of research programs of computational semiotics and Sociotics. The topics discussed include the usefulness of semiotic methodology in explaining the impact of so-called artificial societies on human communication and society, as well as the potential importance of reflexive, interpretive semiotics in what is now seen as a purely technological field.

7B: “In the Company of Men”: Queering Science and Fiction in the Twentieth Century (San Diego)

Lisa Yaszek (Georgia Institute of Technology), organizer/chair

As feminist scholars have long noted, scientific activity is often equated with masculinity. Our panel aims to extend this observation by examining the complex ways masculinity manifested itself in the decades surrounding World War II, showing how scientific and literary authors of this period mobilized various notions of masculinity to make sense of emergent scientific ideas, methods, and practices. While Patrick Sharp examines the tension between heterosexual identity and homosocial behavior in pulp science fiction, Doug Davis and Lisa Yaszek show how scientists themselves used subaltern gender identities and relations to articulate new scientific paradigms. Taken together, our papers show both the centrality and complexity of masculinity in midcentury representations of science. In doing so, they contribute to the cultural studies of gender and science by questioning—and then queering—conventional understandings of what it means to practice science “in the company of men.”

Doug Davis (Georgia Institute of Technology) & Lisa Yaszek (Georgia Institute of Technology), Queer as AI

Doug Davis and Lisa Yaszek seek to contribute to the progressive idea of a successor science by doing some “successor history,” specifically by showing the social and cultural situatedness of the scientific concept of Artificial Intelligence in action, from its initial formulation in mathematician Alan Turing’s own subject position to its cultural and scientific practice in the present day. Focusing especially on Turing’s use of gendered imagery to frame what later became known as the Turing Test, Davis and Yaszek suggest that the mathematician’s own experience of sexual identity as performance enabled much of his thinking about successful artificial intelligence as the simulation-rather than creation-of an authentic state of human identity. Representations of AI in television and film after World War II continued to evoke the concept’s queer subject position, and as the computational paradigm failed to produce anything like coherent human intelligence, more recent work in AI has returned to Turing’s performative model as well, making science once again out of the cultural practice of drag.

Patrick Sharp (California State University, Los Angeles), Science Between Men: Model Masculinity in Early Science Fiction

Patrick Sharp argues that American science fiction from the 1930s displays a profound ambivalence towards the scientist as a model for masculinity. The scientist, while often a heroic figure in science fiction, became secondary to the action hero in texts like *Flash Gordon* and *The Adventures of Buck Rogers in the 25th Century*. These texts were the first science fiction narratives to receive mass distribution, making science fiction tropes and heroes familiar to millions of Americans. While retaining the notion of the cerebral, ascetic scientist inherited from Descartes and Boyle, these science fiction representations of the scientist display an element of hostility and distrust that is only mitigated by the power, authority, and centrality of hyper-masculine action hero. The physical helplessness of the scientist mirrors the helplessness of the “damsels-in-distress”; the heterosexual romance also becomes mirrored in the homosocial romance of the cerebral scientist and the physical hero. More than simply representing a mind/body split, Sharp argues that this coupling displays the contemporary valorization of Darwinist masculinity as it tames and embraces the “womanly-man” scientist. While ostensibly championing heterosexual romance, these science fiction stories create romantic structural relationships between the scientist and the action hero, further queering the image of the scientist in the American popular imagination.

7C: Mathematics, Writing and Poiesis (Pacific B)

Sha Xin Wei, (Georgia Institute of Technology), organizer/chair

What role do the technologies of writing play in the performance of mathematics? How does the evolution of notation and concept mix the narrative and material agencies of algebraic, differential, geometrical, topological, kinetic practices in the construction, accounting and recounting of mathematical knowledge? This panel offers four perspectives on the inscriptional practices of mathematics not only as technologies of recording or illustration, but as material and generative process. These studies view the construction of mathematical knowledge as socio-technical phenomena and as mathematical poiesis. By presenting such investigations, we intend to engage scholars concerned with technologies of writing, drawing and simulation, with pedagogy, and with the socio-ontological status of mathematical objects and processes.

Sha Xin Wei (Georgia Institute of Technology), Differential Geometrical Writing as Poietic Technology

X.W. Sha examines technologies of visualization and simulation as differential geometric writing, and as material creation of mathematical entities.

Helga Wild (WestEd), On the Passion of Reading a Mathematical Proof

H. Wild suggests that reading a proof is an enactment of the written structure by the reader. Wild argues the claim with the help of the semiotic analysis initiated by Vladimir Propp and extended and systematized by Algirdas Greimas.

Amir Alexander (The Planetary Society), The Story in the Signs: Narrative Structure in Mathematical Systems

Mathematical systems share many of the structural attributes of a well defined story. They begin with the introduction of the basic elements, then develop them in internally consistent ways to achieve certain results. This can be done in many different ways, and differing mathematical systems are consequently structured by different types of narrative. Identifying the particular narrative structure of a mathematical system, and comparing it to other narratives flourishing in the historical environment in which it was developed, serves to anchor mathematical systems in their particular historical setting. Examples are given from the history of the calculus and analytic geometry.

Kenneth Knoespel (Georgia Institute of Technology), Diagrammatic Writing and the Practice of Shape-Logics

K. Knoespel considers how the technologies of visualization and diagrammatic writing influence the development of shape-logics.

7D: Guest Scholar Session: Fiona Giles (Pacific A)

Bernice Hausman (Virginia Tech), organizer/chair

Fiona Giles (University of Sydney), Reimagining Breastfeeding: Return to the Lactating Subject

This paper attempts to reimagine lactation outside dominant breastfeeding discourses which have tended to the scientific, legal and socio-economic. It focuses instead on the experience of the lactating subject -- as a psycho-physiological process, a socio-sexual behaviour, and the manifestation of an affect. Like tears, breast milk is a fluid resulting from a commonplace bodily function. Also like tears, it has a lot to say about us. This paper begins to explore what some of these utterances might be. The paper will draw on personal narrative accounts of breastfeeding, literary and visual arts examples, and corporeal feminist theory.

7E: Varieties of Vitalism: Organism, Form, and System (Monterey)

James Bono (State University of New York at Buffalo), organizer/chair

James Bono (State University of New York at Buffalo), From Form to Information: William Harvey, "Vital Materialism," and the Problem of Mechanistic Models of Life since the Seventeenth Century

In the seventeenth century, Harvey transformed Neoplatonic and traditional Aristotelian and Galenic views of life and living organisms into an alternative materialism—one more suited to the complexity and interdependence of living things than the relatively crude mechanistic materialisms of Descartes and others. Beyond historical genealogy, I argue that Harvey's tradition of vital materialism insists upon "form" not as abstract "pattern" or vital principle, but as fundamentally immanent to living systems. This early modern vitalist tradition harbors incipient notions of the complexity, activity, patterned behavior, organization, and autopoietic properties of living things that have been productively, and provocatively, rethought in the late twentieth century. My paper will end by exploring the question of what precisely the move from "form" to "in-form-ation" in recent biological theory and practice means.

Bruce Clarke (Texas Tech University), Narrative Vitalism: Embedding and Two-Sided Form

The trope of narrative vitality animates some well-known and theoretically rigorous texts of structuralist narratology. The figurative vitality of these tropes of "narrative vitalism," I will argue, is directly connected to an interesting link between narrative embedding and systems-theoretical descriptions of operational framing. I will review some reasons for the resilience of narrative vitalism, then offer some suggestions for moving to a less metaphorical formulation by invoking the notion of narrative's role in subsystems of social autopoiesis.

John Johnston (Emory University), Machinic Merkwelten and Artificial Evolution: Robotic Agents Want a Future

In the 1990s "the new AI" made great strides in robotics by further applying the lessons of Artificial Life research, beginning with Rodney Brooks' "bottom up" approach to the construction of autonomous mobile robots. Colleagues and followers, specifically Pattie Maes, Maja Mataric and Randal Beer, developed and applied notions like emergent functionality, autonomous agent theory, multi-agent systems and collective intelligence, and a dynamical systems approach. At the same time, continuing its rejection of symbolic

computation as part of the baggage of the old AI, the new robotics explicitly allied itself with Francisco Varela's version of cognitive science based on embodiment and enaction. It has become evident, however, that further progress demands the application of evolutionary programming techniques, not only to evolve neural net controllers but new morphologies as well. This also means a greater reliance upon computer simulations, with which the new robotics has always been uneasy. This double exigency, moreover, will also bring computation back into the mix—a new kind of “emergent” computation, to be sure, but computation nonetheless. It also suggests a return to and fulfillment of the original promise of cybernetics to construct a complete theory of the machine and to understand cognition itself as an evolutionary machinic process.

7F: The Fit Seems Natural: A Roundtable Exploration of Science, Literature, and Ecocriticism (Pacific C)

Michael Bryson (Roosevelt University), organizer/chair, **Janine DeBaise** (State University of New York College of Environmental Science and Forestry, Syracuse), **Sue Hagedorn** (Virginia Tech), **Christopher Kuipers** (University of California, Irvine), **Jeffrey Thomson** (Chatham College)

This roundtable discussion unites two exciting scholarly conversations that have developed in parallel fashion but have intersected infrequently: science and literature studies (or, as the field is sometimes called, “SciLit studies”) and the investigations of literature's relationship with the environment (or “ecocriticism,” the current term in vogue). Drawing upon our own research programs and teaching experiences, we tackle a diverse but coherent set of questions that illustrate the challenges and rich possibilities of integrating literary, environmental, and scientific studies: How does science both inform and critique ecocriticism? Conversely, in what ways does an environmental perspective—such as that afforded by ecofeminism—challenge and reshape our views and assumptions about science? What sort of metaphors have we devised for nature, and how are those colored and shaped by our scientific perspectives? What are the challenges and benefits of teaching writing and environmental literature to scientists-in-the-making? What are the roots of the ecocritical approach to literature, and how do these beginnings throw light upon past and present attitudes about science and nature? What, by contrast, do contemporary scientific ideas—such as chaos theory and its echoes in environmental literature—tell us about how we understand and represent the natural world?

The panel's structure is designed to maximize constructive interaction among the five participants and to incorporate active discussion from the audience. The chair will introduce the session, articulate the key questions under consideration, and moderate the roundtable. Each of the four panelists will have a few minutes to make a brief position statement, after which the group will engage in focused discussion. The last 30 minutes of the session will incorporate questions and comments from the audience. To facilitate audience interaction with the panel, the position statements and key questions will be available on the web (<http://faculty.roosevelt.edu/bryson/mbrsch.htm>) a few weeks in advance of the conference.

3:30-4:00 pm: Refreshments (Pasadena)

4:00-5:30 pm: SESSION VIII

8A: Latour (Santa Barbara)

Murdo William McRae (Tennessee Technological University), chair

Roar Høstaker (Lillehammer University College), **Latour — semiotics and science studies**

This paper is an attempt to read Bruno Latour's works in relation to the semiotic theory of A.J. Greimas and his colleagues. It will here be suggested that Latour's work is fundamentally dependent upon concepts borrowed from this tradition. His major strategy seems to be to extend the use of linguistic concepts to include the social and the real. In this way both the real and the social have become immanent to language. This represents a major contribution to theoretical discussion within the social sciences, but also inherits the problems involved with this type of semiotics.

Srikanth Mallavarapu (State University of New York at Stony Brook), **Latour and the Modernity that Never Existed: A Postcolonial Perspective**

In *Pandora's Hope*, Bruno Latour reads an Indian story to demonstrate the folly of iconoclasm. The protagonist of the story, Jagannath, attempts to challenge the established caste hierarchy by forcing the dalits to touch a sacred stone. The “stone,” Latour argues, is neither a fact, nor a fetish—it occupies a middle zone, open to negotiation, which he calls a “factish.” Just as Latour argues that it is not enough to physically destroy the stone to challenge the entrenched caste structure, I suggest that his own deconstruction of modernity is incomplete without accounting for the impact of the networks that generated the difference between the “modern” West and its Others.

Julian Yates (University of Delaware). **Actor Network Theory and the Practice of History; Or, A Particular Fondness for Oranges circa 1597**

If, following Michel Serres, Bruno Latour, and Isobel Stengers, we understand the work of cultural studies to be a reworking of the archive to facilitate new systems of representation (say something on the order of a Parliament of Things)—what kind of repertoire of reading protocols or historical practice are we enjoined to? Or, put more simply, what do you do when you find an orange in the Tower of London in 1597—an orange, that is, that plays a crucial role in enabling a spectacular waterborne escape by two Catholic prisoners? This paper derives a series of moves from ANT that enables us to speak in more complex and so more precise ways about how agency is constructed by a division of labor between human and non-human actors in earlier historical moments. In addition to

parsing out the role of oranges in the escape, this paper explores how recovering the roles of plants and animals as actants in historical transforms questions of periodization and so the governing questions that continue to script early modern studies.

8B: Mathematical Proportions, Smooth Flow, Icon Restoration: Scientific Ideals in Art and Design (San Diego)

Isabel Wünsche (International University Bremen), organizer/chair

Isabel Wünsche (International University Bremen), Biological Metaphors in 20th-Century Art and Design

"Biomorphic Modernism" has come to signify a style of cultural production that extended beyond painting and sculpture to photography, architecture, design, urban planning, and landscape architecture. The paper will examine Biomorphic Modernism as a mode of artistic production based on the application of biological principles and concepts of the life sciences and associated with a biocentric world view. Discussion will focus on the question of how theories and discoveries in the life sciences, scientific practices, and biological metaphors inspired early 20th-century art and design.

Christina Cogdell (California State University, Fullerton), In Search of Smooth Flow: Constipation, Eugenics, and Streamline Design in the 1930s

This paper repositions streamline designers' concerns for enhancing efficiency away from the physical realm of air and fluid dynamics into the biological realm of evolutionary thought. In many ways, streamlining reflects the concerns for smooth biological flow promoted concurrently by U.S. eugenicists and health reformers during the 1930s. It sets in parallel eugenicists' pursuits of "national efficiency" through "race betterment," health reformers' attempts to cure the national disease of constipation, and designers' insistence on the tapering curve and the benefits of streamlined styling, arguing that the underlying goal shared by all was a desire to enhance national evolutionary progress.

Wendy Salmond (Chapman University), The Triumph of Science Over Superstition: Conserving Icons in Early Soviet Russia

In early Soviet Russia the scientific restoration of icons (religious images) was often exploited as a weapon in the struggle against superstition and religion. X-rays and photo-documentation laid bare the physical histories of images popularly believed to work miracles and modern conservation techniques ousted the "making new" of icons by divine intervention. This paper explores the ideological dimensions of this struggle between science and superstition by examining the restoration in 1919 of a single icon, the miracle-working Vladimir Mother of God, and its subsequent impact on the reception of Russian icons in the West.

8C: Number Shape Word (Pacific B)

Arielle Saiber (Bowdoin College), organizer/chair

Karl Menninger's cultural history, *Number Words and Number Symbols*, which traces the origin and development of the terminology used to speak of quantity and the symbols developed to represent it, continues to be a point of reference for the creation, manipulation, and evolution of new mathematical language and signs. This panel will be discussing how the "numbers" and "shapes" of mathematics have inspired the literary and philosophic imagination through a variety of frameworks: a ludic poetics that welcomes the interference of the Lucretian "swerve" (*clinamen*); a reconsideration of numberless notions of shape and their consequences; a mythic language that embodies number and rejects abstract geometry; and a rhetoric of satire that assume a particular conceptual shape, or antishape, as the case may be.

Anna Botta (Smith College), Oulipo: Ludic Interferences Between Mathematics and Literature

The Oulipo (Ouvroir de Littérature Potentielle) doesn't conceive of science as simply a source of inspiration, rather thanks to the latter's formalizing properties, Oulipo actively uses science as an organizing principle of its literary matter. Such a poetics explains Oulipo members' preference, not to say obsession, with numerology, their quest for a harmony of numbers. In their literary praxis, a system of numbers may determine the formal organization of the entire work, the disposition of chapters or the arrangement of lines in a sonnet. However, as Harry Mathews wrote: "To accept the oulipian conception of writing is a commitment in favor of materialism and relativism, against teleology and transcendence. Being committed to Oulipo's activity subverts any form of fantasy of absolute." If seen as enclosing the literary work within a perfect system, numerology would itself reveal a tendency toward absolutes. Hence the group's frequent adoption of the Lucretian *clinamen*, which in their writings works as an injection of the aleatory and the flaw into otherwise carefully designed literary structures.

Sha Xin Wei (Georgia Institute of Technology), Topological Media

Much of the commentary on mathematics, whether from the analytic or semiotic perspectives, takes number as the object and counting as the primary activity. In this work I'll propose to balance this obsession by re-considering numberless notions of shape and their consequences.

Alexander Bertland (Hastings College), Myth and Number in Giambattista Vico's New Science

In the "New Science," Giambattista Vico claims that society formed through imaginative rather than conceptual thought. So Vico cannot argue that numbers were originally concepts invented for counting goods. Instead, Vico holds that numbers must have been embodied in mythic symbols and were used for naming rather than bartering. This comports with Vico's view that the poetic character Mercury originally represented the class struggle rather than trade. In this presentation, I will examine how Vico's notion of embodied number suggests that we rethink the role of number in politics, poetry and philosophy.

Arielle Saiber (Bowdoin College), Antirectilinear Satire in Giordano Bruno's "Candelaio"

Satiric language often uses a kind of "geometric rhetoric" to reveal the limitations of the person or thing under attack: how it is unidirectional, straight, and narrow. Giordano Bruno's comedy, "The Candle Bearer," is a powerful critique of "linear," pedantic thought. Through his use of tropes of listing (such as brachylogia), of repetition (such as anaphora), and of language play (such as polyptoton), Bruno demonstrates how pedantic thought merely regurgitates or re-arranges past knowledge, prohibiting inclusion of the new, or of

anything “off the track.” As such, his satire of pedantic linearity is a means to champion a language of “antirectilinearity,” of multiplicity, of possibility, and even of infinitude.

8D: Biocultural Articulations of Embodied Maternity (Monterey)

Bernice Hausman (Virginia Tech), organizer/chair, Fiona Giles (University of Sydney), respondent
This panel examines literary, medical, and public health articulations of the meanings of breastfeeding in contemporary culture. Breastfeeding is only one of many embodied maternal practices, but it is one of considerable significance, both in biomedical and representational terms. Here we demonstrate and interpret just a few of its complexities.

Gretchen Michlitsch (University of Wisconsin, Madison), Flirting with the Possible: Lactation in Laura Esquivel's *Like Water for Chocolate* and Louise Erdrich's *The Antelope Wife*

In *Like Water for Chocolate*, a virgin aunt spontaneously lactates to feed the nephew that she loves. In *The Antelope Wife*, a white soldier begins to lactate to feed the great granddaughter of an Indian woman he killed in a massacre. Recent medical texts acknowledge that spontaneous nullipara female lactation and induced male lactation are possible. Yet Esquivel and Erdrich represent these practices through magic realism, and they use their works to call attention to non-European belief systems and understandings of the body and of medicine. I explore the flirtation between the real and the unreal as it is represented in these two texts, in relation to Western scientific beliefs and nonWestern modes of storytelling.

Bernice Hausman (Virginia Tech), Viral Mothers: Breastfeeding and HIV in the Third World

This talk is about discourse and practices of infant feeding in the Third World, as influenced by the spread of HIV (meaning both viral contagion and cultural impact). Concerns about breastfeeding as a mechanism of vertical infection mediate longstanding anxieties about mothers, as well as more contemporary concerns about maternal practices in the context of global capitalism. I engage a cultural analysis of public health decisions concerning breastfeeding and HIV infection, demonstrating just how complex a cultural and biomedical problem breastfeeding poses for those who want to control the spread of HIV/AIDS *and its meanings* and how Western views of breastfeeding as a proto-medical practice influence approaches to the global problem of HIV infection via breast milk.

Kumiko Yoshioka (Ritsumeikan University), Maternal Feeding As the Vanishing Point, or What Artificial Feeding Really Substituted For

Is the declension of natural breastfeeding and triumph of artificial feeding--repression, alienation, substitution and supplementation of the natural by the artificial--truly an established historical fact? By comparing different editions of *Diseases of Children for Nurses* by Robert S. McCombs (1911, 1922, 1930), we will observe how the dichotomy of natural, maternal nursing vs. artificial feeding was constructed in the early twentieth century, while cow's milk-based artificial formulae actually diminished and replaced a variety of “receipts” for infant feeding, which had often been substitutes for the “woman's milk” of wet-nurses.

8E: Robots and cyborgs (Pacific A)

Dawn Dietrich (Western Washington University), chair

Michael Filas (Westfield State College), The Cyborg Tragedy

Cultural representations of cyborgs can usually be read as tragedy following the structural elements outlined by Northrup Frye in *Anatomy of Criticism* (1957). This presentation presents Frye's structural elements of tragedy and, using examples from various cyborg texts, demonstrates how our representations of cyborg life reflect a generally bleak and tragic outlook. Examples are culled from films and books such as *Frankenstein*, *The Stepford Wives*, *Neuromancer*, and *Bicentennial Man*. This tradition, representing the cyborg as a defacto tragic hero, is also considered in recent works, such as last year's film, A.I.: Artificial Intelligence.

Greg Garvey (Quinnipiac University), Gnosis, Monads, and Virtual Beings

For Donna Haraway cyborgs represent “breached boundaries.” This paper examines one species of cyborg — for virtual beings have breached the barricades. The recent feature film *SimONE* revisits Baudrillard's argument from *Precession of the Simulacra*. In *Final Fantasy: the Spirit Within* synthspians upstage flesh and blood actors. Whither this ‘spirit within’? Leibniz proposed replacing atoms with Monads. These self-conscious and spiritual entities are “capable of knowing the system of the universe, and of imitating it.” To know, to recognize, to be aware is the essential Gnostic formulation. Is this also what is sought by the makers of artificial minds and virtual beings?

Eve Keller (Fordham University), Rodney Brooks Meets the Galenic Man: Humanoid Robots and Early-Modern Medicine

In an effort to articulate a cogent anti-Cartesian understanding of the body and the “self,” this paper will explore areas of overlap between Rodney Brooks' recent descriptions of robotic “life” and the descriptions of human anatomy and physiology in vernacular medical texts of early-modern England. I will argue that both Brooks' and Galen's popularizers in the early-modern period accomplish by rhetorical imputation what they cannot demonstrate by logical argument — namely, the granting of intentionality and volition to bodies embedded in the world. But I will further argue that it is precisely in making these rhetorical maneuvers that these writers offer an opening onto an anti-Cartesian sense of human being.

Sidney Perkowitz (Emory University), The Good, the Bad, and the Artificial: From Mechanical Ducks to Digital People

From robots in Greek myth to contemporary real and virtual versions, artificial beings have been pictured as servants, expressions of human *hubris*, or evil incarnate. The brilliant French artisan Jacques de Vaucanson, who was praised by Voltaire as a “new Prometheus,” had a more beneficial idea. Vaucanson made his marvelous automata of the 1730's — including a duck that quacked, walked, spread its wings, ate, and excreted — as steps toward replicating all human functions, to understand the body and its diseases. This talk shows how literature and science have since used artificial creatures and life processes to teach us about ourselves or point to an improved humanity.

8F: Ecology, climatology, geography (Pacific C)

Michelle Kendrick (Washington State University), chair

Neal Bukeavich (King's College), "A World of New Immensities": Science, Society, and Ecology in H.G. Wells's *The Food of the Gods*

At the close of the nineteenth century, progressivist European ideas about the future helped initiate a "regime of perpetual ecological disturbance," J.R. McNeil's term for the unprecedented anthropogenic changes to the global environment that took place in the twentieth century. For H.G. Wells, however, these aggressive sociopolitical attitudes had dangerous ecological and societal implications. Much of his work demonstrates a strong, if largely intuitive, resistance to the antiecollogical underpinnings of progressivist ideologies concerning technoscience. In particular, Wells's *The Food of the Gods* (1903)—one of his most sophisticated but neglected works—counters traditional notions of nature as a passive and ahistorical object available for consumption, technological improvement, and exploitation. It stages an "anthropogenic natural history" that foregrounds the ways in which landscapes exist as material manifestations of the relations between humans and their environment. At the height of European imperial expansion projects, Wells's novel calls into question the growth-at-all-costs mentality that informs Western notions of sociopolitical development.

Mark Sander (University of California, Los Angeles), *The Aesthetic and Moral Concepts of Life in Artificial Life Research*

The "Strong Claim" in Artificial Life holds that life can be completely described as a set of physical processes without appealing to a transcendental vital essence. The writings of many A-Life researchers, however, often insist on the importance of preserving life, a fact that seems incompatible with A-Life's ontological reductionism. My paper will examine the aesthetic and moral concepts of life in the work of one such researcher, Tom Ray, who argues just as strongly for protecting his virtual ecology, Tierra, as for creating of a biodiversity reserve in the forests of Costa Rica.

Harry Steward (Clark University), *The Literary Surveyor*

The map as an image, in a wide variety of forms and interpretations, overt and metaphorical, has become a commonplace item in contemporary literature. The map-maker, too, as the graphic arbiter of the geographical landscape, has come under literary scrutiny. Other disciplinary contributors the map, however, have been relatively; indeed, decidedly; neglected. Novels featuring photogrammetrists, hydrographic surveyors, or geodesists as main characters are hard to come by. Land surveyors, both topographic and geodetic, however, are a different story. They appear regularly, but there is scant commentary on their appearance and the contexts in which they appear. This is surprising, considering that the surveyor turns up, for example, in the works of Dickens, Chekov, Kafka, Zola, and Verne, to say nothing of a myriad of modern texts. This paper is an attempt to outline the celebration, and otherwise, of this fundamental professional in the map-making process, as seen through the eyes of the literary world.

Daniel Tripp (West Virginia University), *Climate, Labor, and Race in the Cultural Imagination*

This paper discusses the long-standing relationship between climatological science and second-class citizenship, which can be traced back, at the very least, to sixteenth-century American promotional narratives, and which has become all the more relevant today in light of emerging cultural anxieties about global warming. Focusing on films like *A.I., Artificial Intelligence* and *Blade Runner*, this paper examines how climatological science has been put to use discursively to help shape ideologies about labor, production, and race.

9:30-?: MUSIC AND DANCE SLS STYLE (California Ballroom)

Sunday, Oct. 13

8:00-8:30 am: Morning Coffee (Pasadena)

8:30-10:00 am: SESSION IX

9A: Film (Pacific B)

Shoshana Milgram-Knapp (Virginia Tech), chair

Gregory Bringman (University of Minnesota), *A Concept of Michel Serres applied to Felix Bodin's Novel: A reading of the Wave-Particle function in *Memoirs of the Nineteenth Century: A Digital Uchronia**

I use Michel Serres' technique of Non-reductive Reduction in an analysis of my recently completed film, *Memoirs of the Nineteenth Century: A Digital Uchronia*. *Memoirs* details Felix Bodin's imaginary interception of Charles Babbage's early computing designs, and his subsequent extrapolation of a 19th century virtual reality based upon Babbage computing. I attempt to non-reductively reduce my film to one signifier that indicates the science behind its 19th Century future technology (Faraday and Maxwell), the epistemology of science (black boxes and the inability to conceive the object of science as a totality), and the literary possibilities of binary computing placed back in the Nineteenth Century.

David Kirby (Cornell University), **Science Consultants, Hollywood Films, and the Role of Fictional Representation in Scientific Practice**

When scientists act as consultants on fictional films it becomes an act of communication that plays a role in the scientific process. Fictional film provides a space for scientists to visually model their conceptions of nature. Furthermore, film is a significant representational technology because it forces consensus on the public version of scientific debates by presenting a single vision of nature in a perceptually realistic structure. Using interviews with scientists and filmmakers, I demonstrate how scientists help craft fictional representations that match the consulting scientist's conceptions of natural phenomena, as well as how other scientists respond to these representations.

Shoshana Milgram-Knapp (Virginia Tech), **Ayn Rand's *Top Secret*: A Screenplay about the Development of the Atomic Bomb**

In the mid-1940s, after the success of her first best-selling novel, *The Fountainhead*, Ayn Rand worked in Hollywood as a screenwriter for Hal Wallis. One of her most intriguing projects was a screenplay about the development of the atomic bomb. Although the partially-completed screenplay was sold to another studio and never produced, the documentary evidence (research notes, screen treatments, and existing scenes) shows that the film would have been unusual, and excellent, in several significant respects. Ayn Rand's *Top Secret*, as projected, would have been a suspenseful movie, historically accurate and dramatically colorful, "starring" Fermi, Oppenheimer, Bohr, Marie Curie, and others in a heroic chain of scientific discovery.

9B: Against Determinism: New Perspectives on American Naturalism (Monterey)

Lynn Wardley (Stanford University), organizer/chair

Jennifer Fleissner (University of California, Los Angeles), **The Feeling of Incompleteness: Obsession-Compulsion and Naturalist Fiction**

Jennifer Fleissner argues that although both naturalism and its characters have been diagnosed according to contemporary Freudian conceptions of "obsessive-compulsive" behavior, within the scientific literature predating Freud--the work of precursors Pierre Janet, Theodule Ribot and Legrand du Salle--compulsive behaviors do not follow from an obsessive desire for order, but rather from what Janet called a "feeling of incompleteness," a feeling governed not by rigidity but by its seeming opposite, doubt. Fleissner explores how the compulsion-to-describe generated by "incompleteness," or what Du Salle called "doubting mania" structures Crane's *The Red Badge of Courage*.

Lynn Wardley (Stanford University), **"Some Splendid Animal": Nietzsche, Biology, and *The Awakening***

References to a biological determinism spawned by Darwinism dominate critical readings of Kate Chopin's *The Awakening* over the last few years. But Lynn Wardley argues that instead of confirming Schopenhauer's pessimistic determinism and Darwin's vision of the imperatives of sexual selection, Chopin responds to both using Nietzsche's critique of English Darwinism. Nietzsche offered the naturalists a biocentric model of human nature not structured by the (conservative, anthropocentric) desire for self-preservation but by the extravagant discharging of powerful vital forces.

Michele Pridmore-Brown (Stanford University), **Henry Adams and his Quantitative Turn**

Critic Paul Bove has recently recovered Henry Adams as the exemplary rational intellectual: a self committed to the Enlightenment's spirit of inquiry who refuses the compromising, therapeutic narratives of his generation. But Michele Pridmore-Brown argues that this is to ignore Adams' late turn to quantitative analysis-- a turn at once a fixation and yet itself therapeutic. An examination of Adams' obsession with calculation shows how the Naturalists, invested in the language, images and cultural authority of the sciences, produced a knowledge of which the Modernists would take advantage: finding life in chaos; reading narrative indeterminacy in entropy; and exploiting white noise (the Dynamo's hum) as an invitation to willed action.

9C: Occult science (San Diego)

Mark Morrisson (Pennsylvania State University), chair

Stephanie Hawkins (State University of New York at Buffalo), **Signifying Curie: Marie Curie and the Cult of Radium**

Science, as Roland Barthes rightly notes, has a "magical essence" akin to "the philosophers' stone of hermeticists." Nowhere is this correlation between science and occult mystery in the popular imagination more abundant than in cultural representations of Marie Sklodowska Curie's discovery of radium. This paper examines how biographical representations of her discovery correlate Curie's domestic activities as a wife and mother with her work as a scientist. What role might such cultural representations of radium as both domestic and divine have played in helping to perpetuate public perception of radium as a wonder cure in the early twentieth century, despite the dangers of its commercial products?

Mark Morrisson (Pennsylvania State University), **The Alchemical Society and the Boundaries of Atomic Theory**

My paper explores the talks and ensuing discussions at the Alchemical Society's monthly meetings (from 1912 to 1915) as a public arena in which scientists and occultists alike worked through the implications of divergent concepts of alchemy and its importance to modern atomic theory. Moreover, it complicates an understanding of the role of alchemy in atomic science as a product of ownership struggles between two polarized yet mutually influencing groups--occultists and scientists--and raise issues of boundary work in both science and occultism.

M. E. Warlick (University of Denver), **The Foolish Alchemist's Wife**

The "Foolish Alchemist" was a popular theme for Dutch and Flemish artists of the 16th and 17th centuries. Typically, these prints and paintings provided a comic parody of alchemical laboratory as a place of physical chaos, human folly and financial ruin. Derived

from a larger study of images of women in the alchemical tradition, this paper will examine representations of the foolish alchemist's wife and will track her appearance in works by prominent artists. While she is marginalized, or absent, in many of these scenes, there are significant exceptions in which she continues to play a prominent visual role.

9D: AI (Santa Barbara)

Jim Swan (State University of New York at Buffalo), chair

Mirko Petric & Inga Tomic-Koludrovic (University of Split), From a Sociological Point of View: Evaluative Criteria in the Field of Socially Intelligent Agent Modeling

This paper analyzes a major contribution of a computer scientist to the field of modeling of socially intelligent artificial agents (Kerstin Dautenhahn's "Starting from Society: the Application of Social Analogies to Computational Systems"), in order to show that computer scientists could profit from being acquainted with the tenets of not only 20th but also 19th century sociology, that closer interdisciplinary collaboration is necessary in the field, and finally that its evaluative criteria need to be modified in such a way as to allow more space for theoretical elaborations firmly grounded in sociology.

Jim Swan (State University of New York at Buffalo), Virtual Ethics

Virtual ethics? A contradiction in terms? We can think about ethics as a code or set of rules; as a form of description; or as first philosophy (Levinas). But can there be an ethics if the other is virtual, a simulation, a computational artifact? People interacting with robots (Cog), working with software agents (tele-surgery), watching animated film characters (*Final Fantasy*), and fighting VR enemies (Cave Quake), appear to forget the simulated, artifactual nature of such figures and treat them – if not as humans, then as persons (in Anne Foerst's distinction). What is going on? How do we describe it?

9E: Gender in Medicine: Representing Patients, Wives, Doctors (Pacific C)

Nancy Cervetti (Avila University), organizer, Bernice Hausman (Virginia Tech), chair/respondent

In an 1892 conference paper, William Osler noted the important contributions that secular writers make to medical knowledge in each particular age. Writers like Shakespeare, Molière and George Eliot captured details regarding medical life and practice of which "we find no account whatever in the files of the Lancet." Focusing on "The Yellow Wallpaper" and *Middlemarch*, the first two speakers extend Osler's discussion by considering the value and reliability of such literature in light of its power to control as well as convey knowledge. The third speaker examines contemporary physicians who have stepped outside the constraints of medical discourse to enter the more capacious field of autobiography.

Michael Blackie (University of Southern California), Rest Cures and Literary Pursuits: Letters Between S. Weir Mitchell and his Female Patients

For many literary critics and medical historians, Gilman's "The Yellow Wallpaper" has come to represent the dominant text for evaluating the therapeutic value of Mitchell's therapeutics. This paper argues for seeing Gilman's condemnation as only one element in the Rest Cure's long, complicated, and, quite often, literary life. Accounts from unpublished material (letters, diaries, notebooks) draw significantly different portraits of the rest cure experience than the one depicted in "The Yellow Wallpaper." Ultimately, this paper insists on recognizing what is lost when a canonical piece of literature becomes the privileged interpretation of an historical period in medicine.

Nancy Cervetti (Avila University), Osler, Johns Hopkins & the Doctor's Wife

In considering novels that deal with the doctor and his wife, including Flaubert's *Madame Bovary* (1857), Mary Elizabeth Braddon's *The Doctor's Wife* (1862), and George Eliot's *Middlemarch* (1872), one is struck by the power of the doctor's wife to move beyond the narrative. Both S. Weir Mitchell and William Osler frequently comment on Lydgate and Rosamond, for example, and Osler wrote, "Would that Lydgate existed only in fiction." This paper examines the influence of these novels, especially the ways they shaped the institution of the rest cure in Philadelphia and early medical education at Johns Hopkins Hospital.

Cheryl Koski (University of Tennessee), Learning While Female: Eight M.D.s Tell Their Stories

During the last three decades, physicians have recounted their passage through medical school, internship, and residency in unprecedented numbers. Eight women have contributed to the autobiography of medical education (Scalia, Morgan, Harrison, Patterson, Greenbaum, Klass, McCarthy, and Rothman), as have some twenty men. Developed here is an original typology based on how the authors portray themselves in regard to medical education. Five of the eight women are outsiders. One each is an observer, an activist, and an apologist. None of the eight is a malcontent. Yet regardless of category, all of the eight women exhibit conflict between gender and occupation.

9F: Colonialism, Transgression and Animal Embodiment (Pacific A)

Richard Nash (Indiana University), organizer/chair

Kari Weil (University of California, Berkeley), Creating a Thoroughbred-Human: Gustave Le Bon, Pierre de Courtivan and the Politics of Sport Science at the Turn of the Century

This paper examines the curious status of the horse in the new field of sport psychology in turn-of-the-century France, and specifically in the writings of two thinkers: Pierre de Coubertin, father of the Olympic games, and Gustave Le Bon, popular scientist/psychologist, known mostly through Freud for his work on crowd psychology. Whether as a model for eugenics or for new methods of training, horses and riding figure either metaphorically or literally as a response to fears concerning French human "degeneration" and as an educational model for healing those pathologies contracted through impoverished heredity and/or modern life.

Richard Nash (Indiana University), Inventing the Thoroughbred, Purifying the English

My overriding interest is in mapping an approach to the question of how the thoroughbred comes into being as a cultural metaphor for Englishness in the Early Modern Period. In particular, I want to sketch three interrelated readings: how the myth of blood purity derived from a foundationalist mythology mobilizes NatureCulture hybrids as natural artifacts; how the mobilization of such NatureCulture hybrids requires the institutionalization of pedigree as inscription device that writes the thoroughbred into culture as a technology; and, finally, how the Orientalist appropriation of Arabian bloodstock simultaneously requires and conceals an internal nationalist dynamic of core and periphery, in which a particular model of English nationalism trumps regional interests.

Marie Lathers (Case Western Reserve University), **“Merde!”: Coprophagy, Conservation, and Colonialism in *Gorillas in the Mist***

Drawing on recent studies of (post)colonialism and excrement as well as recent works on the history and cultural significance of shit/merde, and Haraway's examination of associations among primatology, women, and colonialism/postcolonialism, this paper analyzes these two uses of the term: as written word (in the text), "dung" stands in for the scientific, the statistical, the traces of the primates that Fossey analyzes; as verbal utterance (in the film), the term evokes the impossible situation of the white woman in the jungle. In addition, the term is used in the film to evoke the refuse of colonialism that infects a seemingly "post-"colonial Rwanda.

John Bruni (University of Kansas), **Of Dogs and Men: Jack London's Vision of Animal and Human Struggle**

At the turn of the twentieth century, there was growing interest in the application of evolutionary theories to human society, a movement widely known as social Darwinism. My paper examines how London's *The Call of the Wild* (1903) responds to social Darwinist doctrine while addressing the biological kinship between animals and humans. Using a multi-disciplinary approach that draws upon literary, cultural, and science studies, I look at the ways in which biological identities for animals and humans are constructed through London's dramatization of a dog's struggle for survival.

10:00-10:30 am: Refreshments (Pasadena)

10:30-12:00 noon: SESSION X

10A: Embodiment (Pacific A)

Bernhard Kuhn (Union College), chair

Ellen Esrock (Rensselaer Polytechnic Institute), **The Body as Reader and Spectator: Empathy, Embodiment, and the Somatosensory System**

Readers and spectators can use their somatosensory system to create temporary boundary changes that bring them into intimate relationships with verbal texts and visual objects. Converging research in neuropsychology, social science, and humanities provides the grounds for arguing that readers and spectators can experience an imaginary fusion with objects when simultaneously attending to their somatosensory sensations and to qualities of visual and verbal works. Such boundary shifts constitute a kind of performance knowledge that evolves over time. It depends on one's bodily constitution, aptitudes, and life experiences.

Mark Larabee (University of Washington & U. S. Naval Academy), **From Human Memories to Genetic Histories: Embodying Identity in the Age of the Genome**

The metaphor describing the human DNA sequence as the "book of life" dramatically reconfigures a key notion of identity, one based on an individual's memories of one's past. The locus of identity has moved from mental images to a bodily inscription, and from a record of the past to a prediction of the future that invites life-extending strategies of risk reduction. Sources as varied as *Frankenstein* (1818), Alice Wexler's memoir *Mapping Fate* (1996), and the discourse surrounding the Human Genome Project indicate how this cultural practice has evolved, leading ultimately to identity's profound destabilization.

Katharine Young (Independent Scholar), **The Body in Space: The Sensuous Epistemology of Gestures in Somatic Psychology**

What is it to know? Knowledges are not always sustained cognitively, they are also sustained corporeally, as sensuous epistemologies, modes of awareness that are, according to Nadia Seremetakis, stored in the body as memory, meaning, and the senses themselves. This is the sort of awareness Thomas Csordas calls "somatic modes of attention" and Seremetakis "the memory of the senses." Somatic therapeutic practice affords participants access to such bodily knowledge by attending to how the body moves through its narratives. Gesturally, participants oscillate between conjuring up the narrative reality in the gesture space in front of the body and entering into it bodily. This conjuring is evidenced in the gestures David McNeill describes as iconic and metaphoric. Maurice Merleau-Ponty argues that when I am unreflectively engaged in my acts, "I am given to myself merely as a certain hold upon the world." I shall argue in the same vein that gestures are not primarily visual representations directed to the other, forms of representational intentionality, but tactile-kinaesthetic investigations for the self, forms of motor intentionality. A gesture is a dynamic pattern, an act, the unfolding of the relationship between the body and things.

W. John Coletta (University of Wisconsin, Stevens Point) & **Dometa Wiegand** (Washington State University), **Out of Our Minds? A Peircean and Environmental Model of Embodied Cognition in the Context of S. T. Coleridge's "Outness" of Mind**

In order to illustrate how mind may be considered an environmental rather than an individual phenomenon so that we may speak of how even rocks have desire, we plan to present a series of formal, heuristic models of embodied cognition that derive (1) from Samuel T. Coleridge's theory of the symbol, (2) from the semiotics of Charles Sanders Peirce and Julia Kristeva, (3) from German Naturphilosophie and present-day ecological theory, and (4) from a consideration of Varela et al.'s theory of "enaction" or "embodied cognition."

10B: Thermodynamics (Pacific C)

Steve Weininger (Worcester Polytechnic Institute), chair

Elizabeth Neswald (Humboldt University), *Concord Fictions and the Entropy Law*

The literary scholar Frank Kermode has pointed out the importance of imaginary beginnings and endings of stories and histories in giving structure and meaning to the whole. The heat-death hypothesis and the entropy law on which it is based point not only to an end of the world, but to its beginning as well. Early discussions of the law of entropy used it not to describe cosmic decline, but to create a unified and coherent view of nature. The entropy law created a cosmic narrative which tied the end to the beginning, thus establishing unity and structure in the material and - implicitly - the human world.

Steve Weininger (Worcester Polytechnic Institute), *Ideology and Thermodynamic Metaphors*

Many thermodynamic concepts have been the basis of metaphors in both scientific and popular cultures. The elasticity of some of these metaphors has made them handy vehicles for a variety of social and political ideologies, a sample of which will be analyzed and compared.

10C: Science and Public Representation (Pacific B)

Sue Hagedorn (Virginia Tech), chair

Michael Rectenwald (Carnegie Mellon University), *Early "Useful Knowledge" Periodicals, The Making of the Useful Knowledge Reader, and the Education of the Working Classes Debates*

In this presentation, I examine the new "useful knowledge" periodicals that began publication in the 1820s, in the context of educational plans for the working classes. I argue that the "top-down" model—supplemented with the counter-claims for a "low" science—amounts to an inadequate understanding of the new knowledge industry. Rather, knowledge industry producers negotiated the treacherous terrain of inter-class discursive relations, serving a *mediating* function between *reading* classes that they constructed and the interests they sought to represent. Knowledge itself became the "essential" determining commodity for positing differences between readers, and between readers and producers.

Astrid Vicas (Saint Leo University), *Popular Criticism on the Web*

This presentation provides a qualitative examination of exchanges among Star Trek fans on the Trek BBS as an instance of criticism on the Web. Its purpose is to bring out several recurring features of discussion threads and posts. These features will be compared with those of more formal or professional criticism and also with the features of primary oral communication identified by Walter Ong. I suggest that popular criticism on the Web, as instantiated in the Trek BBS, is a hybrid that presents a combination of features, some of which also belong to formal criticism and to primary oral communication.

Michael Stivers (Independent Scholar), *A Decorum for Disclosure: From Secrecy to Security in a Manhattan Project Diary*

This paper describes how the world's first full-scale nuclear reactors and plutonium production facilities were represented by the person responsible for their construction and operation during the Second World War. The paper expands on classical concepts of decorum and provides a rhetorical analysis of the diary of the commander of the Hanford Engineer Works, tracing the development of a decorum for the eventual disclosure of the secret day-to-day events at Hanford. The decorum in the diary gradually developed as the diary was written and revised nearly every day from late 1942 to the end of 1945. I argue that the diary was not simply a straightforward workplace journal but was deliberately constructed to provide important source material for an apologia of Hanford in the event of a feared Congressional investigation.

10D: Technologies of Invention : Cy Twombly and the Arts (Monterey)

Yves Abrioux (Université de Paris III), organizer/chair

The work of the American artist Cy Twombly offers a rich visual laboratory for exploring cognition and invention in the arts and sciences. The aim of this panel is to bring a series of approaches to bear on his overtly anomalous practice. Three different readings of Twombly's work will be presented. While each raising specific issues relating to the articulation of art and science, these will all converge on a set of methodological concerns. The significance of the philosophy of Gilles Deleuze for an understanding of invention in and across the arts and sciences will provide a further common thread of discussion. Questions of a techno-logical order are most frequently raised with reference to the highly sophisticated machines and media which have become such an important part of our environment. The power of such devices has contributed to deflecting the debate from traditional issues of instrumentality — taking technology as an adjunct to essentially human faculties — to a consideration of the way these faculties are shaped and altered by the technical environment which humanity has created. By focussing on a body of work which is not only manifestly low-tech but is furthermore characterized by an appearance of spontaneity, the panel seeks to bypass both of these familiar routes, in order to explore in a more philosophical, or indeed anthropological, vein the implications of Deleuze and Guattari's proposition (1980) that "there is imagination only in technique". The speakers will present in turn a brief series of proposals, with reference to a limited number of works by Cy Twombly. In order to provide a focus for discussion, they will then all comment on two specific Twombly works — one pictorial, the other sculptural. A printed summary of each of the initial methodological statements will also be provided.

Kenneth Knoespel (Georgia Institute of Technology), *Cy Twombly and the Diagrammatic Field*

Twombly's importance comes not from being able to fit him into a movement, but for the momentum of work that has repeatedly explored a diagrammatic ground of discovery whether in drawing, painting, or sculpture. His work continues to be valuable not only for the questions it raises about visual discovery in the arts (including within digital settings) but also for the way that it resonates with ideas of invention and discovery within mathematics and science. My initial comments will explore ways that Twombly's diagrammatic work resonates with Gilles Chatelet's account of the ways that geometric space is discovered (*Les enjeux du mobile*

[1993]). Subsequent remarks will be directed at several facets of the diagrammatic work undertaken by Twombly and the consequences this work has for approaching ideas of cognitive modeling from the vantage point of a cognitive anthropologist such as Michael Tomasello (*The Cultural Origins of Human Cognition* [1999]) or the diagrammatic phenomenology of Gilles Deleuze (Foucault [1986] and especially Francis Bacon *Logique de la Sensation* [1981]). I will conclude with comments about the ways in which Twombly's diagrammatic work may be regarded from the vantage point of narrative theory. An underlying assumption accompanies my remarks and should be mentioned: I will emphasize the importance of shaping active interpretive strategies that extend our critical response to visual matter well beyond the recursive mapping of a static hermeneutical model.

Yves Abrioux (Université de Paris III), From Notational Systems to War Machines: The Twombly Effect

According to Roland Barthes (1979), the paintings of Cy Twombly produce an irreducible and non-representational "effect" which provides evidence of the workings of "another", i.e. non-Aristotelian, logic. Alternative ways of accounting for this effect are suggested by Nelson Goodman's analysis of symbolic forms, more particularly via the questions raised by his concept of notational systems (1976), and Deleuze & Guattari's notion of "war machines" (1980). Deleuze and Guattari replace Goodman's logical approach to understanding (of things, via denotation and classification) with a dynamic concept of capture (of energies). Deleuze and Guattari furthermore insist that all technologies be regarded as social, as opposed to simply instrumental. Rather than being merely accepted as a model of behavior useful for explaining the cognitive "nature", of the arts, in contradistinction to (but alongside) the sciences, symbolic forms must consequently be examined as a human and social technology. The same holds for the concept of information, with which Goodman's technologies of classification and understanding are closely bound up, and for which Deleuze and Guattari substitute flows of energy. If flows or fluxes constitute the "reality", with which Twombly's paintings and drawings are concerned ("flux" is reality itself or consistency, — Deleuze & Guattari), then the effort to determine the Twombly-effect impinges on fundamental issues of technology, cognition and behavior.

Noëlle Batt (Université de Paris VIII), Between the demotic and the abstract: Cy Twombly's configurations

Referring to the different concepts and notions established by Gilles Deleuze and Felix Guattari to conceptualize works of art, and paintings in particular («capture of forces», «logic of sensation», «diagram», «esthetic figure» in *A Thousand Plateaus, Francis Bacon : The Logic of Sensation, What is Philosophy?, Essays Critical and Clinical*), this paper will investigate the «techno-logical» strategies of Cy Twombly in some paintings that use materials linked to Ancient Rome. Elaborating on the apparent paradox involved in associating the utmost simplicity of a pictorial technique which sets before the viewer a handwritten word, jotted-down sentences, or even mere "scribbles" on the canvas with the highly specialized and sophisticated culture of Ancient Rome (a painting dated 1973 hesitantly shapes in a single line the name of Rome's most famous poet, Virgil), the line of argument will identify in these paintings by Cy Twombly a play with two paradigms frequently interwoven by modernist and postmodernist poets : the demotic and the abstract. A comparison with some of John Ashbery's poetic configurations will allow us to specify some of the idiosyncratic features attached to Cy Twombly's esthetic figures.

10E: Childbirth (San Diego)

Michelle LaFrance (University of Washington), chair

Virginia Agnew (University of Florida), Conceptualizing Their Own Sexuality: The Construction of Maternity in Victorian Discourse

Recently, an abundance of new studies re-examining the institution of motherhood have emerged from anthropologists, historians, and medical professionals. At the same time, literary critics have suggested that Victorian "mother authors" such as Elizabeth Gaskell were instrumental in creating an ideology of the "mother-and-child" which has become the norm in our society today by writing fictions idealizing the mother and infant relationship as essential to a child's well-being. I would argue that Gaskell's depiction of motherhood does not apply solely to biological mothers. Indeed, she is playing with shifting definitions of "motherhood," "maternity," "mother nature," and "maternal instinct" to suggest solutions through the discourse of popular literature to the social problems of the day.

Michelle LaFrance (University of Washington), The Next Holy Virgin: Still-Birthing the Other of the Other

This paper will focus upon the construction of the feminine monster as represented by Dame Darcey's 1993 comics narrative, *The Next Holy Virgin*. In contrast to typical gothic narratives of monstrosity, this comic offers an insistent reiteration of the feminine body, which reforms and remains autonomous, even active, as it is invaded, impregnated, perforated, and quite nearly overwritten. Darcey's narrative aptly demonstrates the interdependence of scientific and religious configurations of the feminine-procreative body as a body in need of control. Darcey's construction thereby troubles readings of the monstrous feminine as a production of the other of the other.

Linda Layne (Rensselaer Polytechnic Institute), Traumatized Selves: Some Unintended Consequences of the Women's Health Movement

I compare the organization and presentation of material on pregnancy and childbirth in obstetrical textbooks with Women's Health texts like *Our Bodies, Ourselves* and show striking similarities in the treatment of pregnancies which do not conform with the norm. I explore the ways that some of the fundamental premises of the Women's Health Movement (e.g. that women have the right, ability and, in fact, responsibility "to control our fertility" (Rothman 1989:72)) have contributed to the feminist neglect of pregnancy loss and are exacerbating the experience of loss for many middle class American women.

Jane Rago (West Virginia University), 'Strange and Unparallell'd Narratives': Inventing Traditions of Science and Nation in Eighteenth-Century Discourse of childbirth

In this essay, I plan to focus on eighteenth-century scientific discourse as it assumes authority through its own narrative and subsumes the narrative of the midwife in a double-move that at once denies access of childbirth to the midwife and also effaces the mother altogether, as 'unfit' to bring up future English subjects. I propose that there occurred an epistemological shift in the discourse surrounding childbirth that, in claiming science as truth, helped to create English national identity by drawing from political rhetoric,

and by inventing a tradition for itself that served to legitimate it as eternal, and natural knowledge. I will focus on early texts of midwives and of doctors, and in particular I will examine the textual hysteria that surrounds Elizabeth Cellier and the Mary Toft case.

10F: Arguments in the Ontology of Science (Studies) (roundtable) (Santa Barbara)

Dennis Desroches (McMaster University), organizer/chair, **Karen Barad** (Mt. Holyoke College), **Robert Markley** (West Virginia University), **Arkady Plotnitsky** (Purdue University)

This roundtable, in asking after the question of being in relation to both the practice of science, and the practice of science studies, challenges, or at least puts to the test, the notion that "we are responsible for what we know" (to quote that oft-quoted passage from the end of Shapin and Schaffer's *Leviathan*.) There can be no question, of course, that we participate in the creation of those conditions that make knowledge production possible. But does something else--something other--participate in this creation with us? To take a different tack: how has it become next to impossible to speak of being when speaking of science, despite the suggestion by both Heidegger and Kuhn (very differently articulated, to be sure) that Cartesian epistemology--the very ground of contemporary science studies--has exhausted itself in a manner that precisely indicates the necessity for thinking being? Why is it that to speak of the ontology of science today quite literally means to speak of its epistemology? Where has being gone? Where, precisely, do we encounter the epistemological thresholds that define our discipline? These and related questions/issues will launch our discussions.

12:00-1:00: WRAP-UP SESSION (Monterey)

(Note: the afternoon reading at Caltech has regrettably been cancelled.)