From the Interim Vice Provost for Research

Stephen Kresovich

The past year has been highlighted by progress on numerous fronts across the university. Energies of faculty, staff, and students have been directed toward new ideas, new actions, and new facilities. It has been a time of renewal and a time to look to the future. Because of its unique history and capabilities, Cornell is strategically positioned to compete successfully for funding in basic and translational sciences. Following are examples to emphasize the competitive position we have established.

Cornell's distinguished history in the physical sciences, engineering, and computational sciences sets the tone for the future. Planning for the Energy Recovery Linac (ERL) is well under way with support from the university, state, and federal government. The ERL is a new x-ray source based on accelerator physics and superconducting microwave technology that will be about 1,000 times brighter than current machines. This facility will be valuable for research in biology, medicine, and materials science, as well as nanotechnology and new areas of science that will be critical to our national competitiveness. Strategic planning for the physical sciences building (to support investigators in chemistry and chemical biology, physics, and applied and engineering physics) and Gates Hall (for computing and information sciences) is progressing, as well.

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Renewing Our Foundations and Building Bridges


Stephen Kresovich

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In the life and social sciences, we are building bridges between Ithaca, New York City, and Doha. The newly established Institute for Cell and Molecular Biology and the Department of Biomedical Sciences (to be jointly housed in the Life Sciences Technology Building) link the biological and biomedical sciences. In addition, expertise in the Colleges of Agriculture and Life Sciences, Human Ecology, and Veterinary Medicine is contributing to activities at Weill

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Cornell Medical College and the Weill Graduate School of Medical Sciences, as the institutions plan joint initiatives in biobanking and population medicine, neurosciences, global health and infectious diseases, food insecurity and obesity, medical ethics, and comparative cancer research and investigate the concept of one medicine for humans and related species.

It is exciting to observe new faculty partnering in creative and original ways across Cornell University. From these nascent bridges among investigators, we are likely to identify and explore opportunities not yet envisioned. At all levels of Cornell, we continue to foster new connections and research opportunities while still being mindful of our historic strengths and capabilities.

Stephen Kresovich

Interim Vice Provost for Research
and Vice Provost for the Life Sciences

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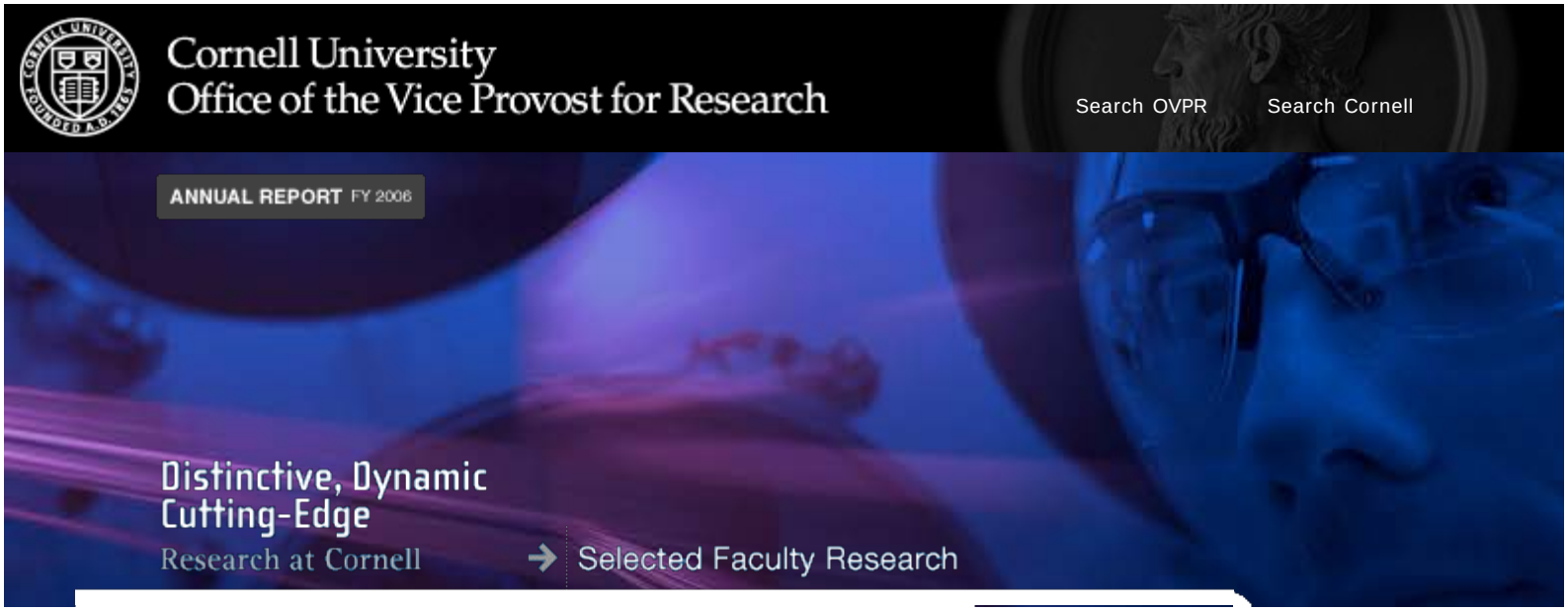

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12. The Split-Second Answer
Melissa J. Ferguson, Psychology

13. A Biodegradable Wipe
Margaret W. Frey, Fiber Science and Apparel Design

14. Strange Fruit
Salah M. Hassan, Africana Studies and Research Center, Brett de Bary, Asian Studies, and Cheryl Finley, History of Art

15. Smokers, Former Smokers, Women Smokers, and Lung Cancer
Claudia I. Henschke, Radiology, Weill Cornell Medical College

16. A Defendant's Blackness and a Death Sentence
Sheri Lynn Johnson, Law

17. Solar Flares
Paul M. Kintner Jr., Electrical and Computer Engineering

18. Hearts with a Glow
Michael I. Kotlikoff, Biomedical Sciences

19. Predicting Alzheimer's
Kelvin H. Lee, Chemical and Biomolecular Engineering, and Norman R. Relkin, Clinical Neurology and Neuroscience, Weill Cornell Medical College

20. Hydrogels from Synthetic DNA
Dan Luo, Biological and Environmental Engineering

21. It's Photovoltaic
George G. Malliaras, Materials Science and Engineering

22. One Hundred Years Sooner for This Volcano!
Sturt W. Manning, Classics

23. Two Clusters of Rubble Near Earth
Jean-Luc Margot, Astronomy

24. An Alzheimer's Preventive Enzyme
Linda K. Nicholson, Molecular Biology and Genetics

25. CHF Risk in Hypertensive Patients
Peter M. Okin, Medicine, Weill Cornell Medical College

26. Daughters as Caregivers
Karl A. Pillemer, Human Development

27. Top 2006 Science Story
Per Pinstrup-Andersen, Nutritional Sciences

28. Noiret™, Corot Noir™, and Valvin Muscat™
Bruce I. Reisch, Horticultural Sciences, Geneva Campus

29. **A Mutant Mouse and Breast Cancer**
John C. Schimenti, Biomedical Sciences

30. **A Device at the Cutting Edge**
Keith C. Schwab, Physics

31. **Swarm Smarts**
Thomas D. Seeley, Neurobiology and Behavior

32. **Seeing Atoms Individually**
John Silcox, Applied and Engineering Physics

33. **A "C" of Scholarship**
Buzz Spector, Art

34. **Clean Hotel Rooms**
Michael C. Sturman, Hotel Administration

35. **Tunes of the Loons**
Charles Walcott, Neurobiology and Behavior

36. **TV Viewing in Early Childhood**
Michael Waldman, Johnson Graduate School of Management, and Sean Nicholson, Policy Analysis and Management

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01. Gregory S. Alexander, Law
The Global Debate over Constitutional Property: Lessons for American Takings Jurisprudence (University of Chicago Press, 2006)

02. Robert Allan, Psychology in Psychiatry, Weill Cornell Medical College
Getting Control of Your Anger: A Clinically Proven, Three-Step Plan for Getting to the Root of Your Anger and Resolving It (McGraw-Hill, 2006)

03. N'Dri T. Assié-Lumumba, Africana Studies and Research Center
Higher Education in Africa: Crises, Reforms, and Transformation (Council for the Development of Social Science Research in Africa, 2006)

04. James F. Bell, Astronomy
Postcards from Mars (Dutton, 2006)

05. David L. Brown, ed., Development Sociology, (with William A. Kandel)
Population Change and Rural Society (Springer, 2006)

06. Stephen J. Ceci and Wendy M. Williams, eds., Human Development
Why Aren't More Women in Science? Top Researchers Debate the Evidence (American Psychological Association, 2007)

07. James E. Cutting, Psychology
Impressionism and Its Canon (University Press of America, 2006)

08. Peter R. Dear, History
The Intelligibility of Nature: How Science Makes Sense of the World (University of Chicago Press, 2006)

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09. Ronald G. Ehrenberg, ed., Industrial and Labor Relations
What's Happening to Public Higher Education? (Greenwood, 2006)

10. Andrew S. Galloway, English
The Penn Commentary on Piers Plowman, Volume I (University of Pennsylvania Press, 2006)

11. Valerie P. Hans, ed., Law
The Jury System: Contemporary Scholarship (Ashgate, 2006)

12. Robert L. Harris Jr., ed., Africana Studies and Research Center, (with Rosalyn Terborg-Penn)
Columbia Guide to African American History Since 1939 (Columbia University Press, 2006)

13. Michael G. Kammen, History
Visual Shock: A History of Art Controversies in American Culture (Knopf, 2006)

14. Ravi Kanbur, ed., Applied Economics and Management, (with David B. Grusky)
Poverty and Inequality (Stanford University Press, 2006)

15. Peter J. Katzenstein, ed., Government, (with Robert O. Keohane)
Anti-Americanisms in World Politics (Cornell University Press, 2006)

16. Stephen L. Morgan, Sociology, and Gary S. Fields, Industrial and Labor Relations, eds., (with David B. Grusky)
Mobility and Inequality (Stanford University Press, 2006)

17. Moshen Mostafavi, ed., Architecture
Structure as Space: Engineering and Architecture in the Works of Jürg Conzett and His Partners (Architectural Association, 2006)

18. Judith A. Peraino, Music
Listening to the Sirens: Musical Technologies of Queer Identity from Homer to Hedwig (University of California Press, 2006)

19. Annette Richards, ed., Music
C. P. E. Bach Studies (Cambridge University Press, 2006)

20. Annelise Riles, ed., Law / Anthropology
Documents: Artifacts of Modern Knowledge (University of Michigan Press, 2006)

21. Barry S. Strauss, History
The Trojan War: A New History (Simon and Schuster, 2006)

22. Brian Wansink, Applied Economics and

Management

Mindless Eating: Why We Eat More than We Think (Bantam Books, 2006)

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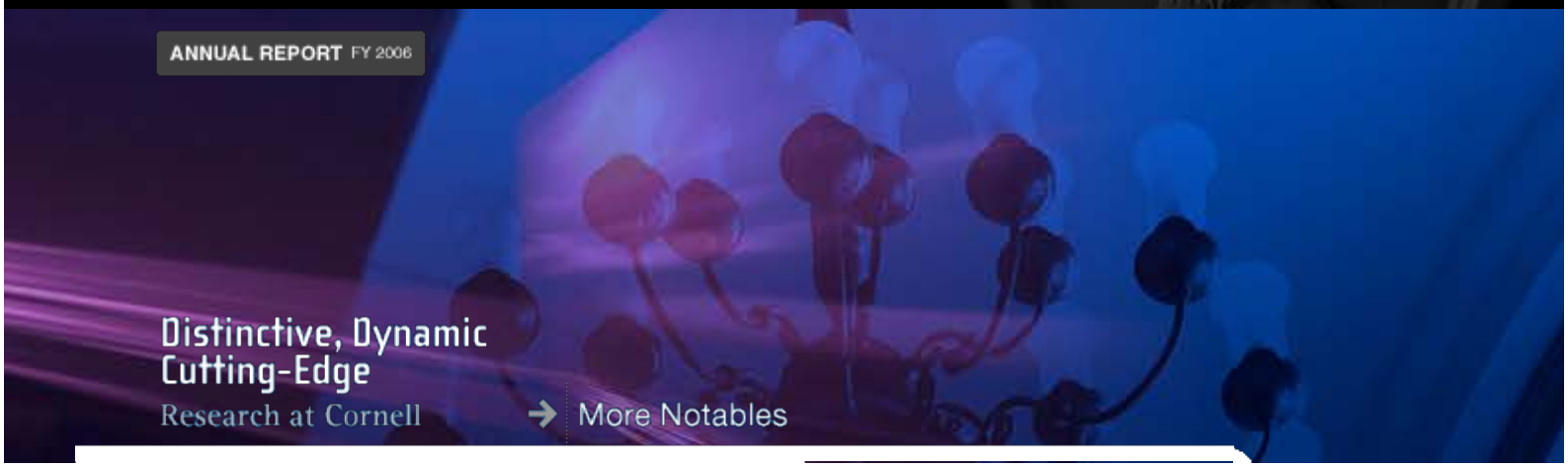

The **Appel Institute for Alzheimer's Research** at Weill Cornell Medical College was established with a $15 million donation from Helen and Robert Appel. The institute will unite researchers and clinicians from Cornell's Ithaca and New York City campuses to study the disease. Researchers in neurology, neurogenetics, biochemistry, and microbiology will work to gain a better understanding of Alzheimer's disease, to develop treatments, and ultimately to find a cure.

Cornell's **Department of Music** received its largest gift to date of $6.5 million from the estate of alumnus Sidney T. Cox to support the performing ensembles, concerts and lectures, and graduate education in musicology, composition, and performance practice.

To support the **Institute for Hospitality Entrepreneurship**, Cornell's School of Hotel Administration received its largest gift ever of $15 million, given by Leland and Mary Pillsbury to encourage and provide guidance for students in entrepreneurial studies, enabling innovation and new business formation in the hospitality industry.

Cornell's **Energy Recovery Linac (ERL)** prototype was granted $12 million by New York's Empire State Development Corporation to help support the engineering design of the ERL.

DNA buckyballs created by **Dan Luo**, Biological and Environmental Engineering, were named one of the 25 most innovative products of 2006 by *R&D* magazine.

A new species of fish, *Ogilbia suarezae*, was named for **Susan S. Suarez**, Biomedical Sciences, 30 years after her master's thesis, published in the *Bulletin of Marine Science* in 1975, described a close relative, O. *cayorum*, of the newly discovered species. Resembling a willow leaf, the species is a small, yellow, live-bearing fish of the Caribbean.

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To continue **sequencing the tomato genome and create a database of genomic sequences** and information on the tomato and related plants (Solanaceae family, which includes the potato, eggplant, pepper, and petunia), the National Science Foundation awarded Cornell University and the Boyce Thompson Institute for Plant Research $1.8 million. The work is part of the International Tomato Sequencing Project, a collaboration with researchers from nine other countries.

Founder of the arXiv, an online science archive, **Paul Ginsparg**, Physics, received the Paul Evan Peters Award from the Coalition for Networked Information, the Association of Research Libraries, and EDUCAUSE.

Larry P. Walker, Biological and Environmental Engineering, received a $10 million New York State grant to upgrade Cornell's industrial biotechnology laboratories for advancing technologies that convert perennial grasses and woody biomass to ethanol.

Arecibo Telescope discovered a never-before-seen radio emission-line spectrum from the Crab Nebula pulsar.

Mildred E. Warner, City and Regional Planning/ Development Sociology, received a $1.2 million grant from the W. K. Kellogg Foundation to further the work of the Linking Economic Development and Child Care project, which she directs. The three-year grant is in partnership with the Alliance for Early Education Finance, Smart Start National Technical Assistance Center, and the Institute for Women's Policy Research.

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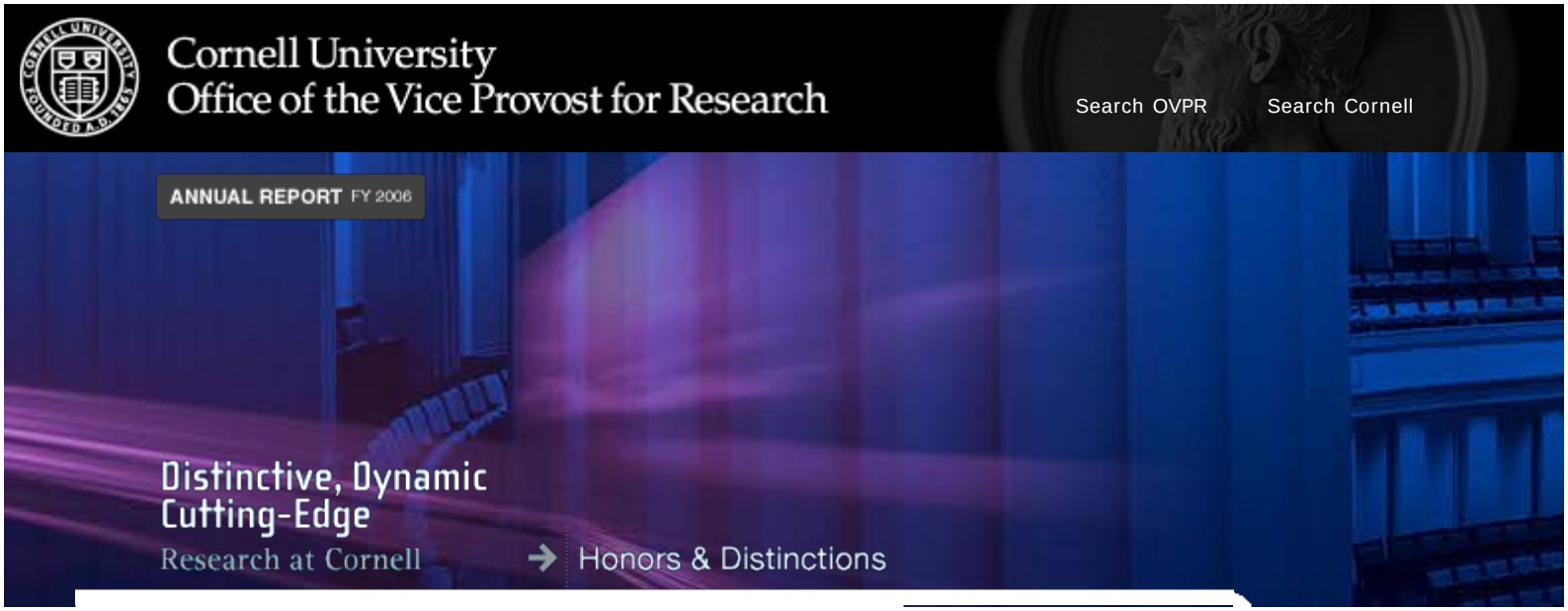

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American Academy of Arts and Sciences
» Robert A. Buhrman, Applied and Engineering Physics
» Dominick C. LaCapra, History/Comparative Literature
» William B. Provine, Ecology and Evolutionary Biology
» Steven E. Stucky, Music

National Academy of Engineering
» Toby Berger, Electrical and Computer Engineering
» Jean-Yves Parlange, Biological and Environmental Engineering

Faculty Early Career Development Program
» Chekesha M. Liddell, Materials Science and Engineering
» Chris [Chunhui] Xu, Applied and Engineering Physics
» Jose F. Martinez, Electrical and Computer Engineering
» Hod Lipson, Mechanical and Aerospace Engineering
» Dan Luo, Biological and Environmental Engineering
» Emin Gun Sirer, Computer Science

Sloan Foundation Research Fellowship
» Steven R. Marschner, Computer Science

Guggenheim Memorial Foundation Fellowship
» Laurent Saloff-Coste, Mathematics

Andrew W. Mellon Foundation New Directions Fellowship
» Shawkat Toorawa, Near Eastern Studies

Beckman Foundation Young Investigator Award
» Abraham D. Stroock, Chemical and Biological Engineering

George B. Dantzig Prize of the Mathematical Programming Society and the Society for Industrial and Applied Mathematics

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» Éva Tardos, Computer Science

World Academy of Art and Science
» N'Dri T. Assié-Lumumba, Africana Studies and Research Center

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Amid concerns about growing landfills, global warming, and the political costs of oil dependence, visionary companies such as e2e offer manufacturers hope of a more sustainable future.

02. **A Diagnostic Test for Effective Antidepressant Drugs**
When a drug is prescribed for a depressed or anxious person, it can take weeks to find out if the drug works.

03. **Transferring Technology, FY 2006**
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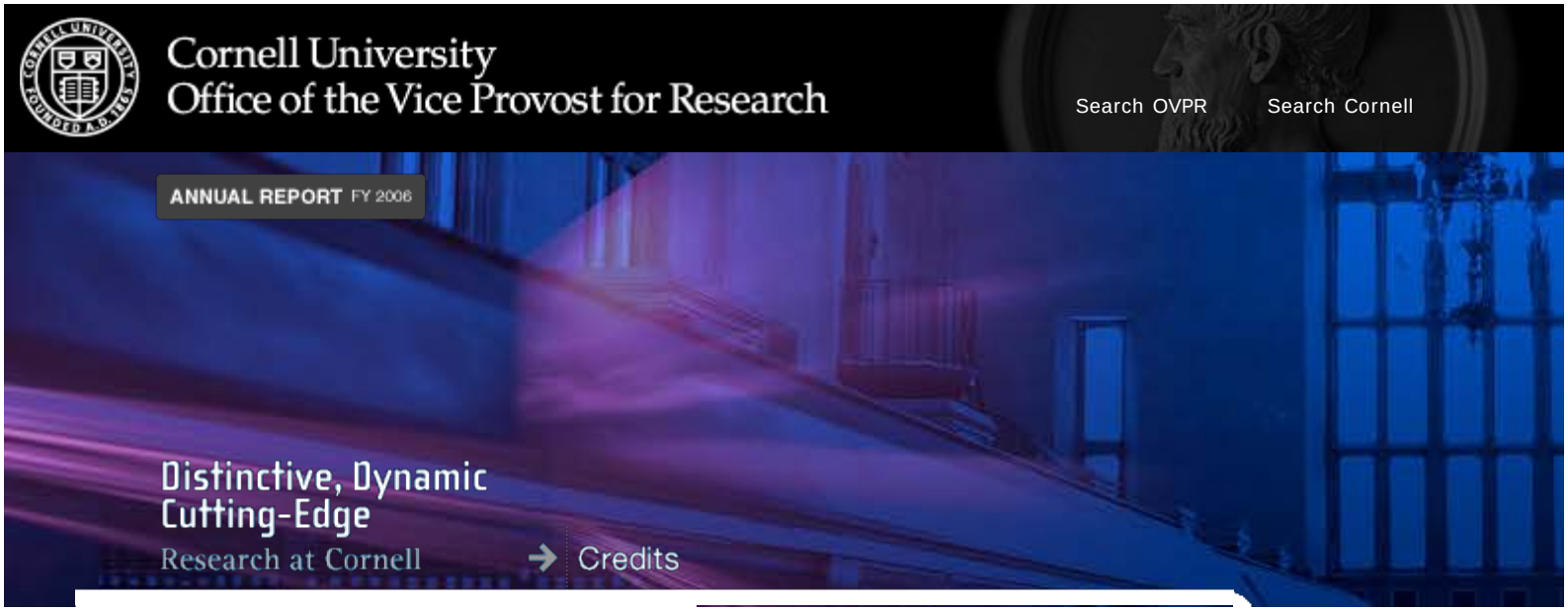

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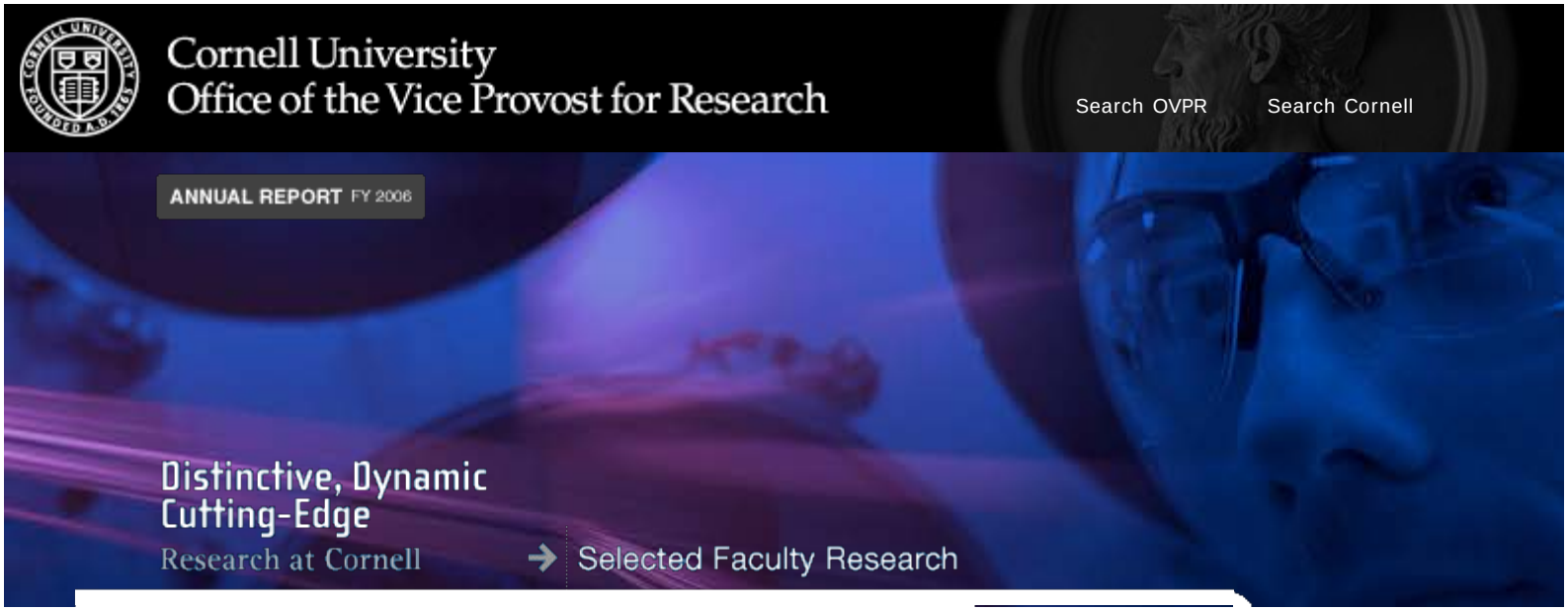

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01. Why are Hybrids Sterile?

Daniel Barbash

Daniel A. Barbash, Molecular Biology and Genetics, identified two genes from two fruit fly species that interfere with each other and prevent the production of male offspring. This is the first example of two genes interacting to cause sterility or lethality in a species hybrid. The discovery supports the Dobzhanzy-Muller theory of the 1930s, holding that hybrid incompatibilities are caused by genes that evolved from a common ancestor, but as the genes evolved in distinct species, they began to code for proteins that no longer work in the other species. Barbash's lab studied a rarely occurring mutation in a *Drosophila melanogaster* gene called Hmr (Hybrid male rescue) and a similar mutation in a *D. simulans* gene called Lhr (Lethal hybrid rescue) that make these genes nonfunctional. The discovery may lead to determining whether hybrids die because of additional genes like Hmr and Lhr or because of subtle differences between the chromosomes of the two species. Barbash's research will help scientists understand what causes lethality or sterility in hybrids and how species evolve from a common ancestor.

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02. Ready, Set, Activate Nano-Keys!


Barbara Baird

Barbara A. Baird, Chemistry and Chemical Biology, and research colleagues created a set of “nano-keys” to interact with receptors on cell membranes and trigger responses within cells, such as the release of histamines in an allergic response. Such processes begin at the molecular level on the cell’s surface and lead to a systemwide response. By engineering materials at scales at which they occur, the researchers found that shorter ligands (molecules that bind to receptors) were better at stimulating these processes. After fabricating Y-shaped DNA chains of certain specifications to use as building materials, the researchers discovered that they could stimulate the release of histamines and trigger other basic cellular processes. Baird and colleagues also created surfaces of silicon with a layer of polymer or a thin lipid bilayer. As cells bind to engineered surfaces and get turned on, researchers can see how the cell is organizing itself due to the stimulus. This new tool provides a way to understand better how cell membranes activate responses within cells, a long-studied topic with few results. Scientists might use this approach to design ligands that trigger a desired response or inhibit an allergic reaction, preventing the release of histamines and inflammatory mediators. New drug therapies to treat allergies, high cholesterol, and viral infections could result.

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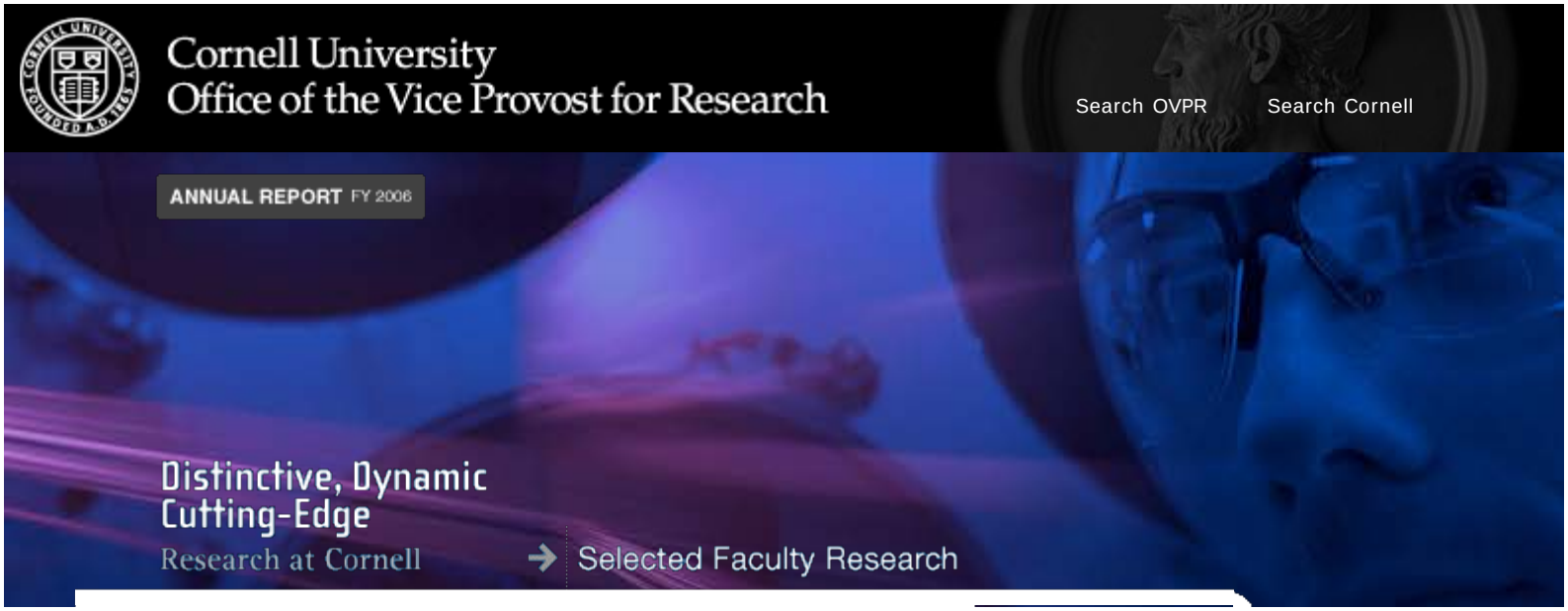

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03. Turbulence: An Unsolved Problem in Classical Physics


Eberhard Bodenschatz

Eberhard Bodenschatz, Physics, and research colleagues measured how two tiny polystyrene spheres in turbulent water separate based on how far apart they initially are from each other. The finding suggests that particles separate more slowly than expected in almost every turbulent flow on Earth, including violent volcanic eruptions. Turbulence—characterized by chaotic, seemingly random flow patterns—occurs when a gas or fluid, such as air or water, is pushed at high speeds or on large scales. Physicists watch particles in turbulence to understand the flow. How quickly two particles separate is a key measurement. Until recently, technology did not allow direct measurements of the classical predictions of L. F. Richardson (1920s) and G. K. Batchelor (1950s). Using three high-tech digital cameras, the researchers were able to record up to 27,000 pictures per second of several hundred polystyrene spheres in eight cubic inches of water. The diameter of the spheres was about one-fourth the thickness of a human hair, revealing the smallest eddies in the turbulent water. The discovery could improve models of dispersion of pollutants and bioagents. It may also help explain how crustaceans find food, mates, and predators by sensing odors in the ocean depths.

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04. A Dynamic Place

Joseph Burns

Joseph A. Burns, Theoretical and Applied Mechanics / Astronomy, and fellow researchers caught new views of Saturn and its rings as NASA's Cassini spacecraft passed behind Saturn's shadow in September 2006. This is the first time that scientists have seen the entire ring system. The images reveal faint new rings in the system, including two orbiting with their small parent moons outside the main ring system and two within the Cassini Division, the largest gap in the main ring system, named after its seventeenth-century discoverer Giovanni Cassini. The spacecraft also photographed a dynamic rippled pattern in the system's innermost D ring. The new images show how Saturn's ring system is changing over time. A new ring in the Cassini Division, which is not visible in images from NASA's 1980s Voyager mission, has emerged. Another example is the outer part of the D ring, a series of closely spaced ringlets. While investigating whether the D ring is vertically warped, researchers compared Cassini's images with Hubble Space Telescope images from 1995 and discovered a change. The research on Saturn's moons and their interactions with the rings will help scientists understand how the moons formed—and might reveal how the Saturn system formed.

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05. Do We Discount or Not?

(l.) Linda Canina, (r.) Cathy Enz

Linda Canina and Cathy A. Enz, Hotel Management, determined that revenue is managed more closely by hotels that price above their competitive set than by those that price below their competitive set. They found no differences during economic downturns or rebounds in the lodging industry. This observation held true, even as the economic situation of the industry first deteriorated and then improved markedly in the course of the study, from 2001 through 2005. The degree of revenue management—the correlation between average daily rate and occupancy—however, varied across market price segments. Within each price segment, the degree of revenue management was greater for hotels that performed better than their competitors. This offers empirical evidence that revenue management strategies are more prevalent in higher-performing hotels.

In another study, the researchers found that hotels resisting the temptation to discount were more likely to come out ahead, regardless of economic downturns or upturns. These hotels were skilled at knowing when to raise or lower occupancy rates to suit demand. Hotels that charge rates above their competitors were better at pricing rooms in response to demand in good and bad times. Hotels' degree of skill at balancing price and demand varied, depending on their place in the economy, midmarket, or luxury segments.

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06. Body Mass vs. Body Fat

(l.) John Cawley, (r.) Richard Burkhauser

John H. Cawley and Richard V. Burkhauser, Policy Analysis and Management, analyzed measures of obesity and developed a tool for better accuracy. Although medical literature has long shown that percent of body fat is a more accurate measure of fatness than body mass index (BMI), social science researchers still rely on BMI, because it is used in most social science–based data sets. Cawley and Burkhauser have created a conversion tool that enables researchers to calculate percent of body fat and other more accurate measures of obesity for social science data sets that contain only information on height and weight. When researchers use percent-of-body-fat data to assess obesity rather BMI, for example, the huge gap in obesity rates between African-American and white women is halved, and white men have a much higher risk of obesity than African-American men. Because BMI ignores the difference between fat and fat-free mass, such as bone and muscle, it overstates the obesity of African Americans (with more nonfat mass) relative to whites. The researchers also found indications of a correlation between high percentages of body fat and employment disability, which could not have been determined using BMI.

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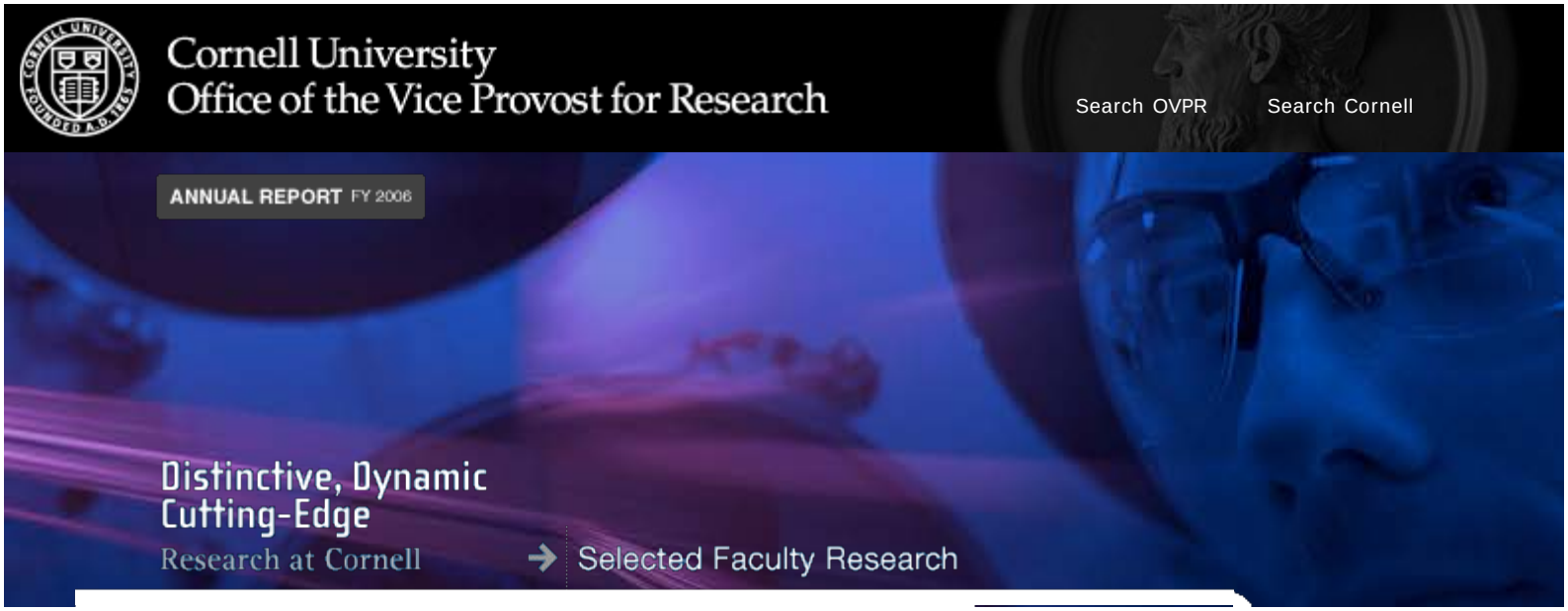

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07. Small Business Culture

Christopher Collins

Christopher J. Collins, Industrial and Labor Relations, found that small businesses with a family-like environment, where employees are trusted to manage themselves—and this skill is used as a criterion for hiring people into the culture—are more profitable. These small businesses had 22 percent more revenue growth, 23 percent more profit growth, and 67 percent less employee turnover than companies that did not have such an environment. The study was based on surveys of owners, managers, and employees of 323 small businesses that employ between eight and 600 employees in a wide array of industries across the country.

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08. How to Tune Nanostrings

(l. to r.) Graduate students Leon Bellan and Scott Verbridge and professors Harold Craighead and Jeevak Parpia

Harold G. Craighead, Applied and Engineering Physics, Jeevak M. Parpia, Physics, and graduate student Scott Verbridge have created nanoscale resonators—tiny vibrating strings—with the highest quality factor (Q) to date obtainable for devices this small. The researchers made the nanostrings from silicon nitrate under stress, using a fast, low-cost fabrication technique that allows for inexpensive testing of a wide variety of materials. The longest string was 200 nanometers (nm) wide, 105 nm thick, and 60 microns long, with a resonant frequency of 4.5 megaHertz and a quality factor of 207,000—the highest Q ever achieved at room temperature. The stressed silicon nitrate strings are very mechanically robust which makes them practical for consumer products. Previously, the researchers used vibrating strings and cantilevers to detect masses as small as a single bacterium or virus. Resonant frequency depends on the mass of a vibrating object. If a nanoscale vibrator is coated with antibodies that cause a virus or other molecule to adhere to it, the change in mass causes a measurable change in frequency. In a high Q nanostring, a small change in mass will produce a much more noticeable shift. This new research gets closer to the “laboratory on a chip.” In addition to their application in devices that detect and identify biological molecules, the nanostrings can be used as very precisely tuned oscillators in radio-frequency circuits, replacing bulky quartz crystals.

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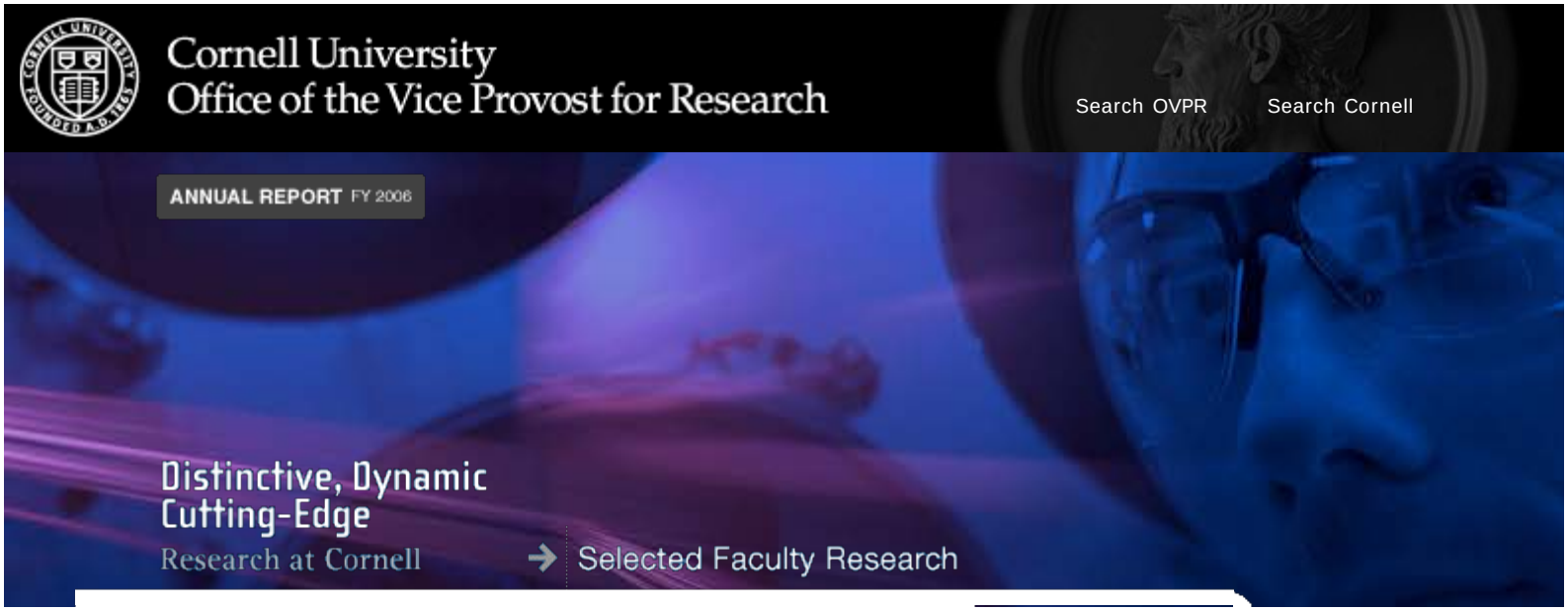

09. A Bacterium's Cooperative Lattice

(l.) Brian Crane, (r.) Jack Freed

Brian Crane and Jack H. Freed, Chemistry and Chemical Biology, and their research labs have begun to unravel the molecular details of how cell-surface receptors and transducing enzymes assemble to detect, integrate, and process chemical signals. Bacteria sense minute changes in their chemical environment (as small as 0.1 percent in molecular concentrations) over a large dynamic range (five orders of magnitude in nutrient concentration). Crane and Freed discovered that receptors assemble into a cooperative lattice on a bacterium's surface to amplify these infinitesimal changes in the environment and start the processes that lead to specific responses within the cell. Combining x-ray crystallography for determining the structure of receptors and enzymes with pulsed electron-spin resonance (ESR) techniques for measuring interactions between them, the researchers developed a structural model showing how the complex of receptors is organized. They believe that the kind of cooperative lattice on the surface of a bacterium may point to a general mechanism for cellular signaling, which could inspire the development of molecular devices. Such devices might sense a wide range of chemical, light, ionic strength (salt), pH, and heavy metals with great sensitivity, gain, and dynamic range.

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10. The Social Behavior of Sweat Bees and Global Warming

Bryan Danforth

Bryan N. Danforth, Entomology, and colleagues linked the social evolution of many species of sweat bees (Halictid bees) with a period of global warming that occurred 20 to 22 million years ago. This is more recent than scientists had thought, particularly when compared to other insects that evolved 65 million years ago. Danforth believes that climate change was a critical factor in the evolution of behavior in these eusocial bees (bees that have permanently sterile worker castes). His study used both fossils and 2,300 base pairs of DNA sequences from three genes to infer the bees' evolutionary history (phylogeny). The DNA sequencing showed how divergent the various species are from one another, while the fossils allowed the researchers to represent the phylogeny on a timeline of millions of years. The researchers next asked what was happening 20 to 22 million years ago that would cause the development of social behavior in so many species at the same time. They discovered that the Earth underwent a warming trend from 15 to 26 million years ago. Halictid bees—important native pollinators in the Northern Hemisphere, where there are about 1,000 species—are nicknamed sweat bees because they are attracted to the salts in human perspiration.

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11. The Way I Want to See It

David Dunning

David A. Dunning, Psychology, and graduate student Emily Balcetis conducted studies confirming that people's motivational states—desires, hopes, fears, or preferences—influence the way they process visual stimuli. In five studies, the researchers showed ambiguous figures—for example, one that could be interpreted as the letter "B" or the number "13"—to volunteers. Participants saw the figure the way they wanted to see it, because they were told that interpretation would have more favorable outcomes for them. One confirmation came from a study tracking eye movements, which revealed that subjects saw only the interpretation they wanted to see, rather than seeing both and reporting their favorite one. The research supports an increasing body of evidence confirming that people's wishes and preferences influence how they process visual stimuli.

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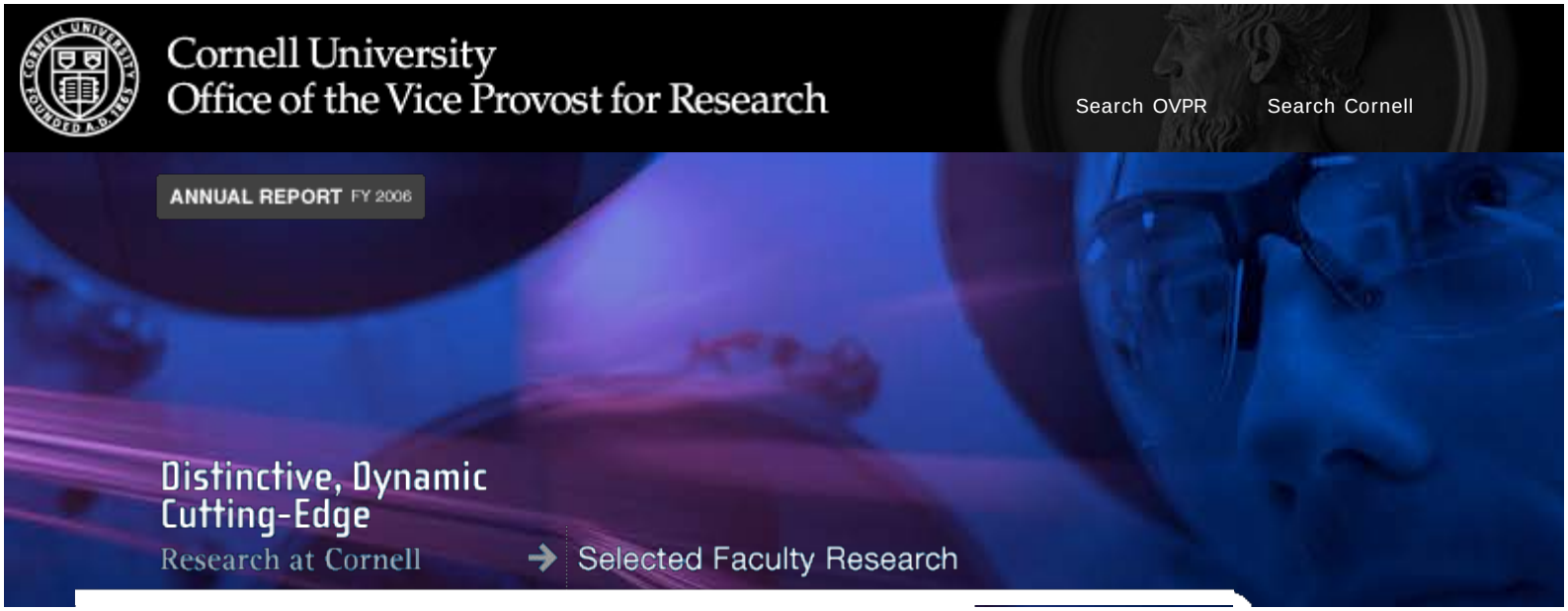

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12. The Split-Second Answer


Melissa Ferguson

Melissa J. Ferguson, Psychology, showed that implicit attitudes—the positive or negative reactions that are activated in memory spontaneously and immediately, within a fraction of a second after perceiving a stimulus—are more reliable indicators than consciously reported attitudes for predicting behavior and intentions. For example, an employer making a decision about hiring a minority candidate may say he is not prejudiced, but his implicit attitude might suggest otherwise. Ferguson's studies gathered data from subjects who completed an implicit attitude measure—a computer-based measure of the time it takes a person to make a decision and then press a key in response to a word or concept presented on the screen. In one study, subjects completed a measure that assessed their implicit attitudes toward "equality" and "elderly." The study showed that people's implicit attitude toward the abstract concept of equality significantly predicted their degree of subtle prejudice. In another study, subjects completed a measure that assessed their implicit attitude toward the word "thin." The same kind of scale was used to indicate their conscious positive response to "thin," as well as their degree of motivation to be thin. Implicit attitudes surpassed consciously reported attitudes in predicting behavior. Until recently, it has been widely held in psychology that individuals generate judgments, attitudes, and actions in a deliberate and intentional manner. Ferguson's research reveals that split-second responses, rather than reported attitudes, better predict how people will behave when faced with a decision—about a candidate, an action, or a policy.

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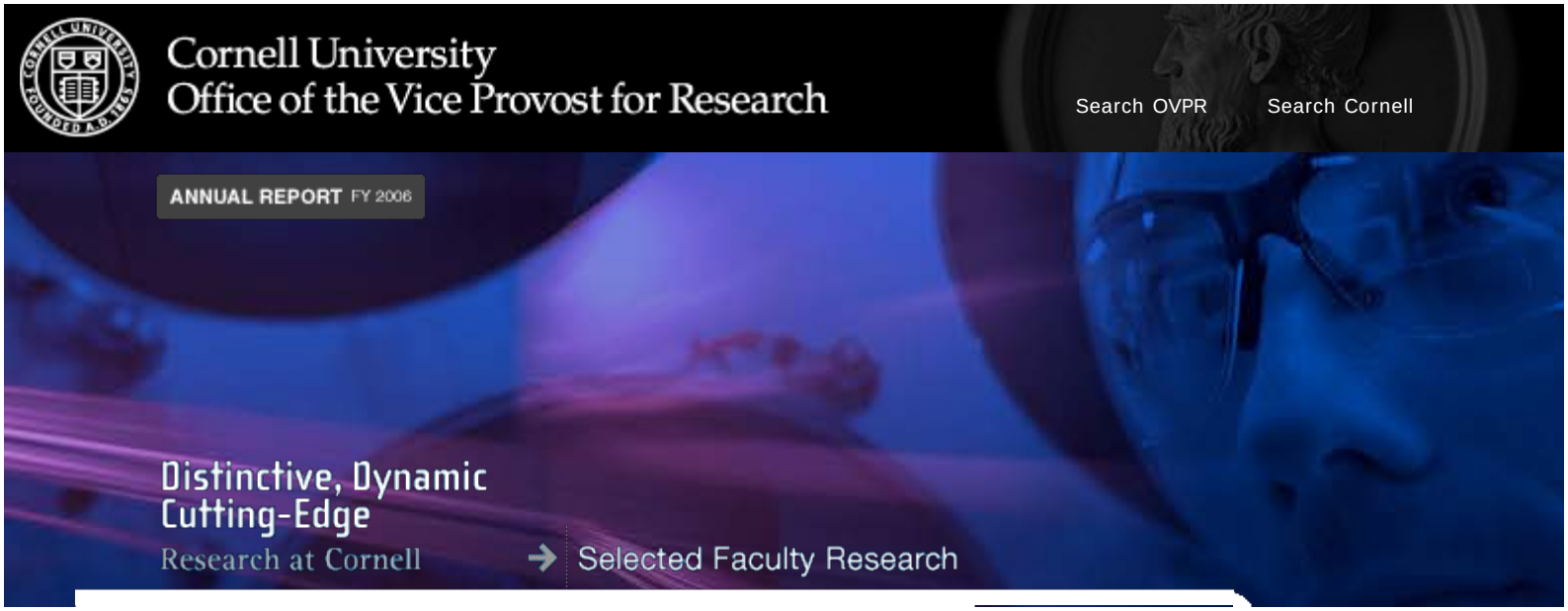

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13. A Biodegradable Wipe


Margaret Frey

Margaret W. Frey, Fiber Science and Apparel Design, and research colleagues developed a biodegradable absorbent wipe that, if produced on a large scale, would be inexpensive and easily used to detect bacteria, viruses, and other substances found in places such as hospitals and airplanes. It could be activated to detect any substance and used with little training—as easily as wiping a surface. Nanofibers in the wipe could even contain antibodies to many biohazards and chemicals, signaling by changing color or another method when the antibodies attach to their targets. The researchers developed nanofibers with platforms made of biotin (part of the B-vitamin complex) and the protein streptavidin, which holds the antibodies. Composed of a polymer compound made from corn, the nanofibers could be incorporated into a conventional paper product to keep costs low. Nanofibers with diameters near 100 nanometers provide extremely large areas for sensing and increased absorbency. Acting like a sponge, the napkin would be able to detect the biohazard of the week, whether bird flu or *E. coli*.

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14. Strange Fruit

(l.) Salah Hassan, (c.) Brett de Bary, (r.) Cheryl Finley

Salah M. Hassan, Africana Studies and Research Center, Brett de Bary, Asian Studies, and Cheryl Finley, History of Art, edited the first special issue of *Nka: Journal of Contemporary African Art* implementing the use of a theme that unites effective texts with imagery in order to explore key issues that have defined our concrete and imaginary visuality. The Fall 2006 special issue of Nka, "Strange Fruit: Lynching, Visuality, and Empire," explored historical acts of lynching, as well as the complex and interrelated processes of recording or representing the events and encountering them through different types of representations. Many questions about how humans make meaning are intricately tied to the subject. With the publication of James Allen's collection of images in *Without Sanctuary* (2000) and the book's traveling exhibition, the history of lynching and its visual representation have become part of the American consciousness again, triggering new scholarly inquiry. The special issue included essays from the proceedings of "Lynching Violence and the Politics of Representation," a symposium held at Cornell in March 2006. It includes essays by Cornell faculty Walter I. Cohen, Comparative Literature ("Lynching, Visuality, Empire"); Shirley R. Samuels, History of Art ("Death and Photography"); and Robert L. Harris Jr., Africana Studies and Research Center ("Lynching and U.S. History").

Nka is a biannual publication representing the arts and visual culture of Africa and the African diaspora. The journal received a $100,000 grant from the Andy Warhol Foundation for the Visual Arts. Hassan is the journal's coeditor.

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15. Smokers, Former Smokers, Women Smokers, and Lung Cancer

Claudia Henschke

Claudia I. Henschke, Radiology, Weill Cornell Medical College, led the largest clinical trial of lung-cancer computed tomography (CT) screening ever conduCTed—involving 30,235 men and women at 38 institutions across the globe—and the first study to link tumor size and lung cancer stage in an asymptomatic population. The study confirmed the importance of CT screening for identifying small lesions, which are a good indicator of early, curable cancer, and revealed that smokers and former smokers should be screened for lung cancer even if they do not have symptoms. The smaller the lung cancer is at diagnosis, the more likely it is to be stage 1 and curable. When lung cancer is detected outside of screening, typically because of symptoms, it has often spread to the lymph nodes and beyond. Curative resection or any effective treatment is greatly diminished at this point. Henschke urges smokers to elect annual CT screening because they are at high risk of lung cancer. Former smokers remain at high risk for lung cancer for 20 or 30 years after they quit smoking, so annual CT screening is valid. The International Early Lung Cancer Action Project (I-ELCAP), led by Henschke, has brought forth new information that will help physicians and patients with informed decision making about CT screening for lung cancer.

Another study led by Henschke, involving 17,000 U.S. smokers, confirmed that women are twice as likely to develop lung cancer as men. The study, however, found that women are 52 percent less likely to die from the disease. Gender differences in lung cancer have been poorly understood until now. These findings highlight the need to teach young women that they are at higher risk of

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developing the disease even when they are smoking the same amount as men. Lung cancer remains the leading cause of cancer death in both men and women, killing more people than breast, prostate, and colon cancers combined, according to the American Cancer Society.

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16. A Defendant's Blackness and a Death Sentence

Sheri Lynn Johnson

Sheri Lynn Johnson, Law, provided the legal expertise in a four-university study that showed jurors are more likely to hand down death sentences when defendants with stereotypically black features commit capital crimes against white victims. It is the first study to examine whether death sentences are influenced by juries' perceptions of defendants' features as stereotypically black. Judgments on features such as hair texture, skin tone, and shape of lips and noses of black male defendants were rated by participants in the study, and the responses were correlated with actual sentences received by the defendants. Fifty-eight percent of the convicts rated as having stereotypically black features had been sentenced to death. Only 24 percent of convicts rated as having features that are less stereotypically black had received death sentences. These correlations emerged only in cases involving white victims, not in cases of black-on-black homicide. If potential jurors state in advance that they would be more likely to impose the death sentence when a defendant looked stereotypically black, they would be disqualified from serving as a matter of law. What if a juror is influenced by race or racial characteristics, but is not aware of that influence? There is no recognized claim, by law, concerning unconscious influence.

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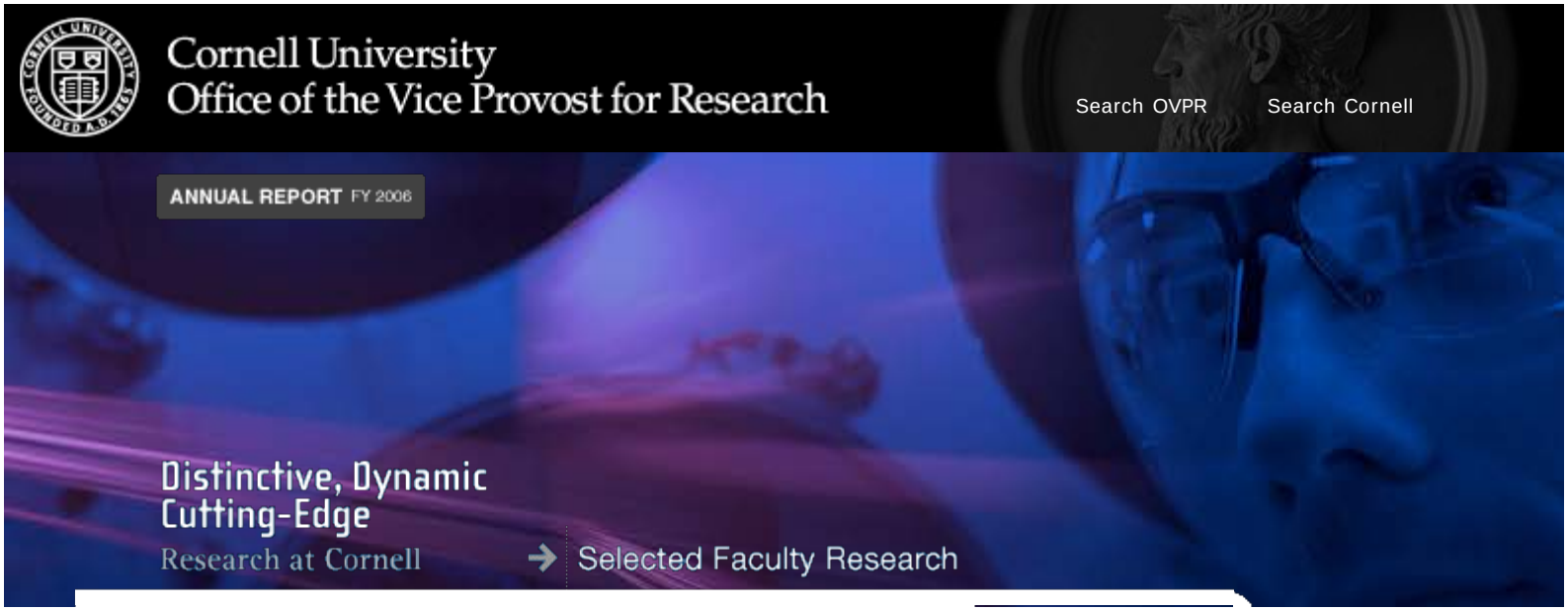

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17. Solar Flares

(l.) Alessandro Cerruti, (r.) Paul Kintner

Paul M. Kintner Jr., Electrical and Computer Engineering, and graduate student Alessandro Cerruti discovered that strong solar flares cause Global Positioning System (GPS) receivers to fail. Solar flares—usually unpredictable—could wreak havoc for operations such as navigating passenger jets, stabilizing floating oil rigs, and locating mobile phone distress calls. The researchers discovered the failure accidentally while operating a GPS receiver at the Arecibo Observatory. They confirmed the effect through data collection from other receivers operated by the Federal Aviation Administration (FAA) and the Brazilian Air Force. The flare they observed consisted of two events about 40 minutes apart, with the first one lasting for 70 seconds and causing a 40 percent signal drop and the second one for 15 minutes and causing a 50 percent drop. During the next solar maximum, flares are expected to be 10 times as intense, last much longer, and cause 90 percent signal drops that will last much longer. Awareness that GPS systems may fail during a solar flare is the best recommendation the researchers can offer.

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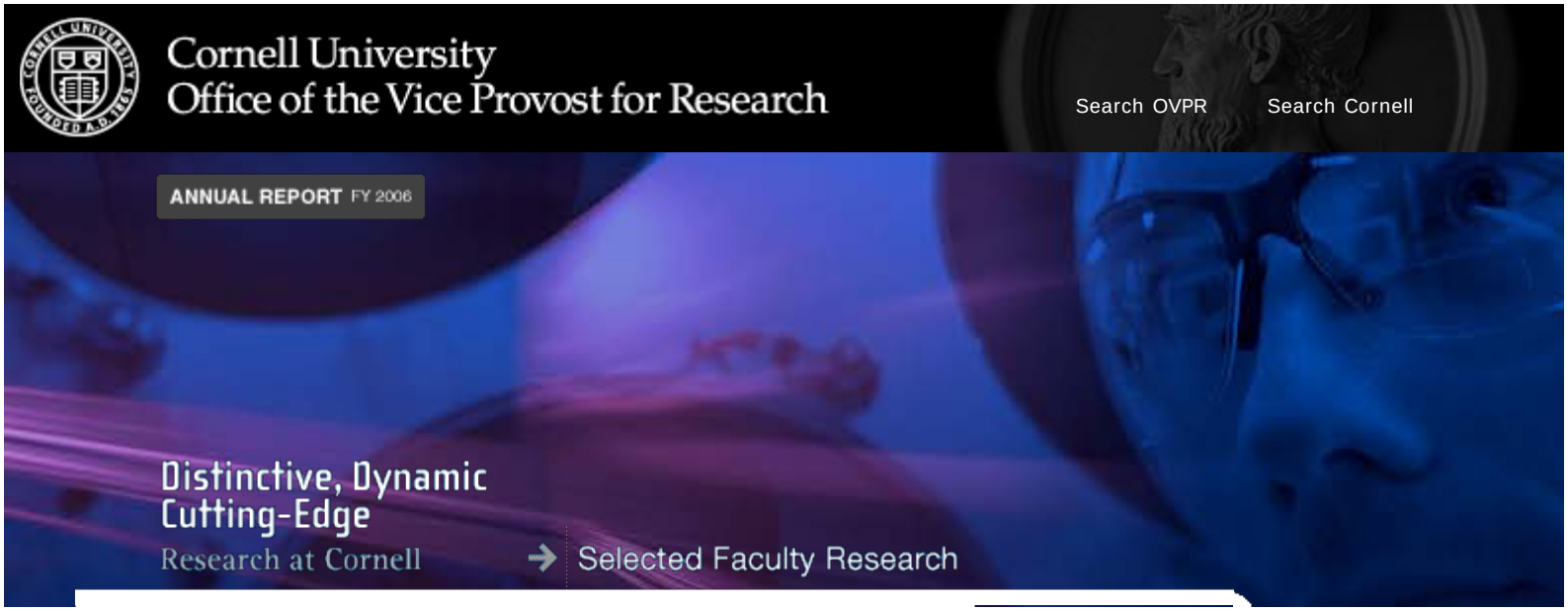

18. Hearts with a Glow


Michael Kotlikoff

Michael I. Kotlikoff, Biomedical Sciences, and research colleagues genetically engineered mice so their hearts glow with a green light with each heartbeat. This provides researchers with insight into how hearts develop in living mouse embryos, a better understanding of arrhythmias, and a potential means of observing cellular processes. The engineered mouse expresses a specially designed molecule that fluoresces when calcium, which increases dramatically with each muscle contraction, is released in heart cells. Calcium turns the sensor molecule off and on like a molecular switch, with greater fluorescence indicating higher calcium levels. Using a special high-speed camera, the researchers were able to track the embryo's developing heart. The new technique was also able to plot the rise in calcium as the heart muscle contracted, showing the patterns, rate, and force of heart contractions.

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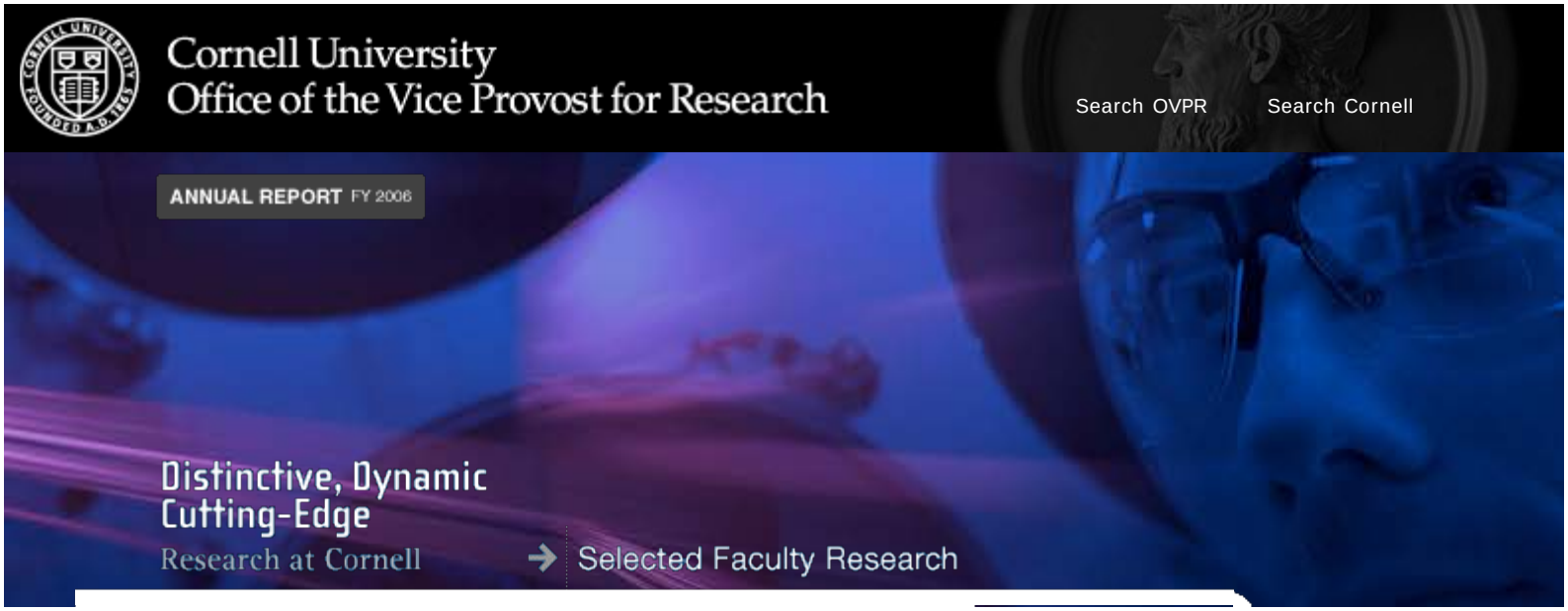

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19. Predicting Alzheimer's

Norman Relkin

Kelvin H. Lee, Chemical and Biomolecular Engineering, and Norman R. Relkin, Clinical Neurology and Neuroscience, Weill Cornell Medical College, discovered a way to predict the onset of Alzheimer's in living patients. The method is almost as accurate as an autopsy, which is currently the only definitive way of predicting the disease's later onset. The researchers discovered a "barcode" (panel) of 23 proteins specific to Alzheimer's while comparing cerebrospinal fluid (CSF) samples from a group of patients suffering from the disease with samples from a control group of asymptomatic patients and patients with other forms of dementia. To be able to identify the disease accurately in living patients would have major implications. Although other researchers are looking for ways to diagnose Alzheimer's through proteomics, the Cornell engineering/neurology approach is unique, as is the researchers' use of the gold standard of autopsy-proven Alzheimer's (as opposed to patients' clinical symptoms). Although more work needs to be done before spinal-tap procedures for diagnosis of Alzheimer's can be available to physicians, the discovery of the protein barcode bears major implications for personalized medical care and clinical drug trials.

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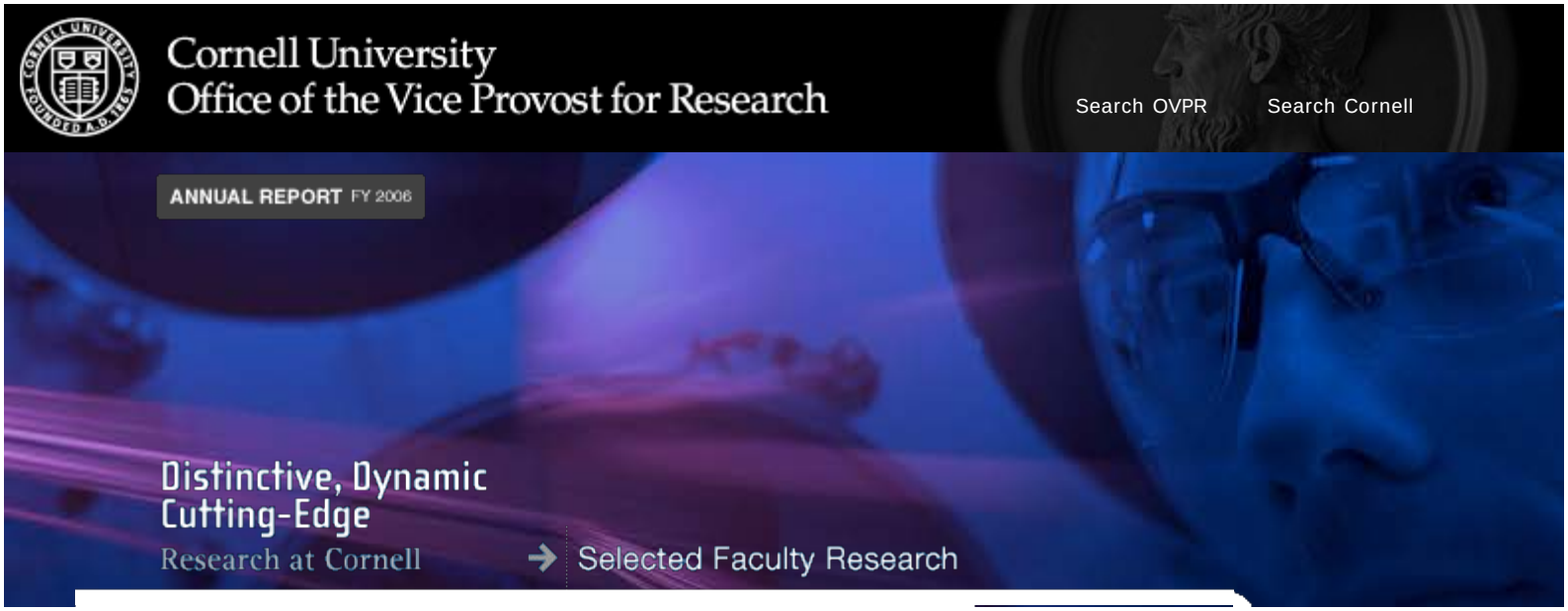

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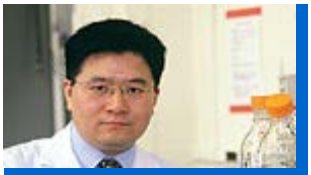
20. Hydrogels from Synthetic DNA



Dan Luo

Dan Luo, Biological and Environmental Engineering, and his research lab developed biocompatible, biogradable, inexpensive hydrogels—liquid-absorbing materials made from synthetic DNA—that can be used for biomedical applications, such as drug delivery or tissue engineering. Hydrogels are composed of long-chain molecules cross-linked to one another to create many small empty spaces that can absorb water or other liquids like a sponge. If the spaces are filled with a drug, the hydrogel can disperse the drug gradually as the structure biogrades. Research now under way may fill the spaces in the hydrogels with stem cells or tissue-growth factors for tissue engineering and tissue repair. These hydrogels are usually made from organic or inorganic polymers (molecules that form long chains), such as alginate from seaweed. Since high temperatures or harsh chemicals are not needed, the material to be encapsulated—whether proteins or live mammalian cells—can be introduced before the gel is formed. To test the effectiveness of the DNA hydrogels for delivering drugs, the researchers encapsulated porcine insulin and the anticancer drug Camptothecin and observed that the drugs were released in a controlled manner over time. When they encapsulated live cells in a gel, they discovered the cells were still alive three days later. To demonstrate that the hydrogels will hold their shape (for tissue engineering, for example), the researchers molded samples to spell “Cornell”!

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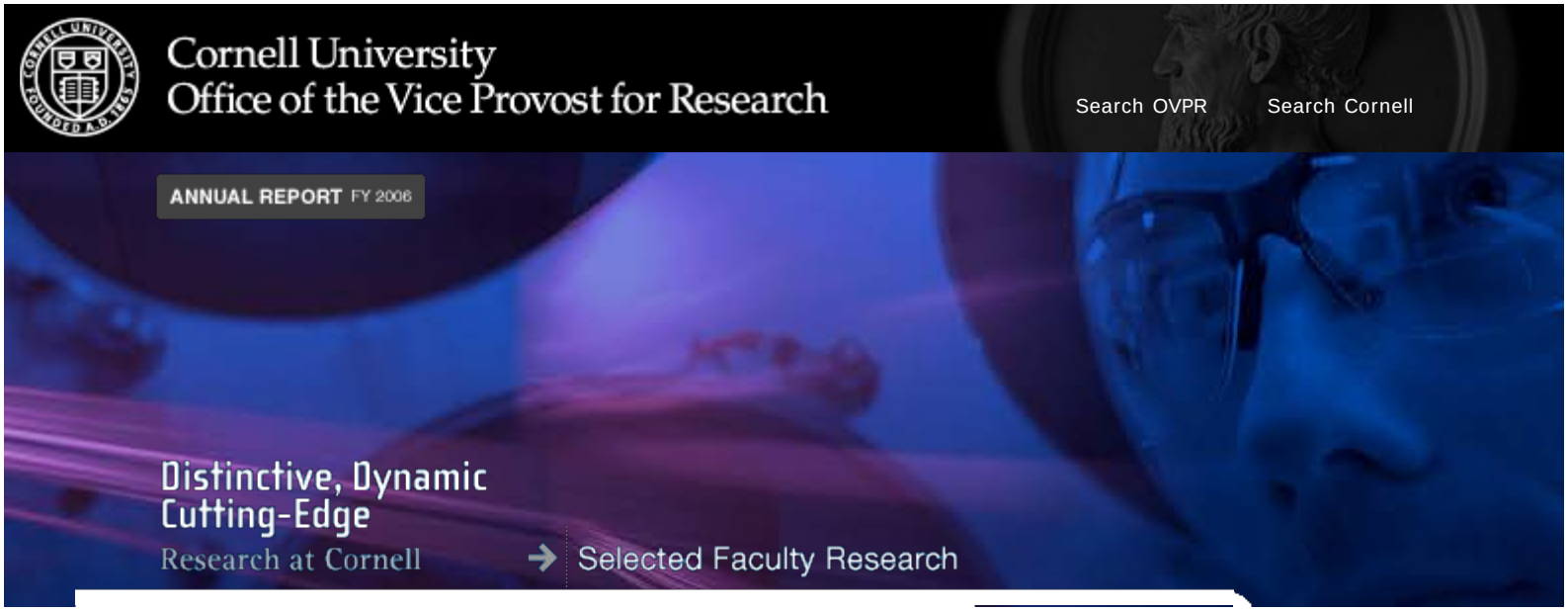

21. It's Photovoltaic


George Malliaras

George G. Malliaras, Materials Science and Engineering, and research colleagues demonstrated a new type of organic semiconductor device that shows electroluminescence and acts as a photovoltaic cell. The device is the first to use an ionic junction, and the configuration could lead to improved semiconductor performance. The researchers made a diode out of organic semiconductors containing free ions (molecules with an electrical charge). They created the device by laminating two organic layers, one with free positive ions and the other with negative ions. They added thin conducting films on the top and bottom; the top film is transparent to allow light in and out. The junction shows intense light emission. These devices, which could be fabricated in thin, flexible sheets, could create displays on cloth or paper. The research could lead to mass-produced, inexpensive solar cells.

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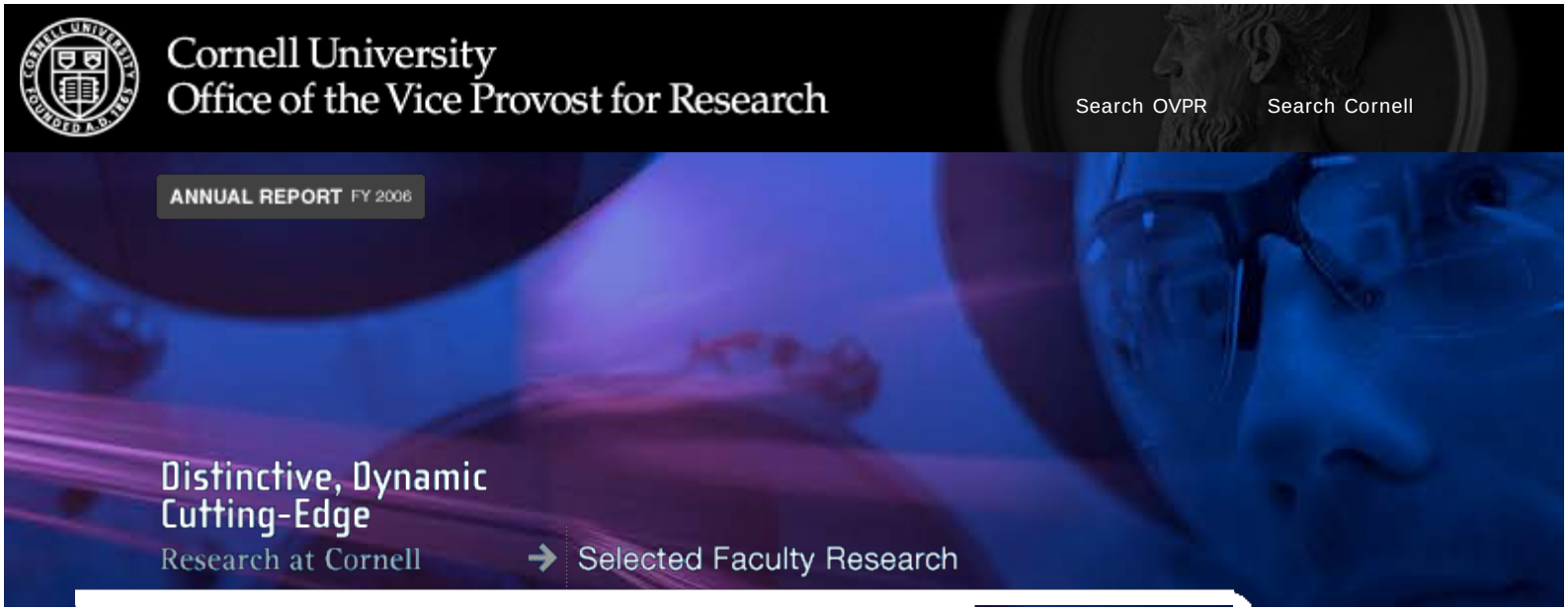

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22. One Hundred Years Sooner for This Volcano!


Sturt Manning

Sturt W. Manning, Classics, led a radiocarbon study of tree rings and seeds showing that the Santorini volcanic eruption, an important event in Aegean prehistory, occurred in the late 17th century B.C, 100 years earlier than previously believed. The discovery may rewrite the Late Bronze Age history of Mediterranean civilizations. The Santorini volcano, one of the largest eruptions in history, buried towns but left archaeological evidence in the surrounding Aegean Sea region. Aegean and Near Eastern cultures were building blocks for Greek and European early history, and scientists have long used the eruption to align Aegean and Near Eastern chronology. To date it would define a whole century of archaeological work and establish an absolute timeline. The researchers analyzed 127 radiocarbon measurements from short-lived samples, including tree-ring fractions and harvested seeds collected in Santorini, Crete, Rhodes, and Turkey. They coupled these analyses with a complex statistical analysis to assign precise calendar dates to the cultural phases of the Late Bronze Age. Manning dates the eruption to between 1660 and 1613 B.C. The redating could mean new knowledge about alliances and intercultural influences previously thought improbable.

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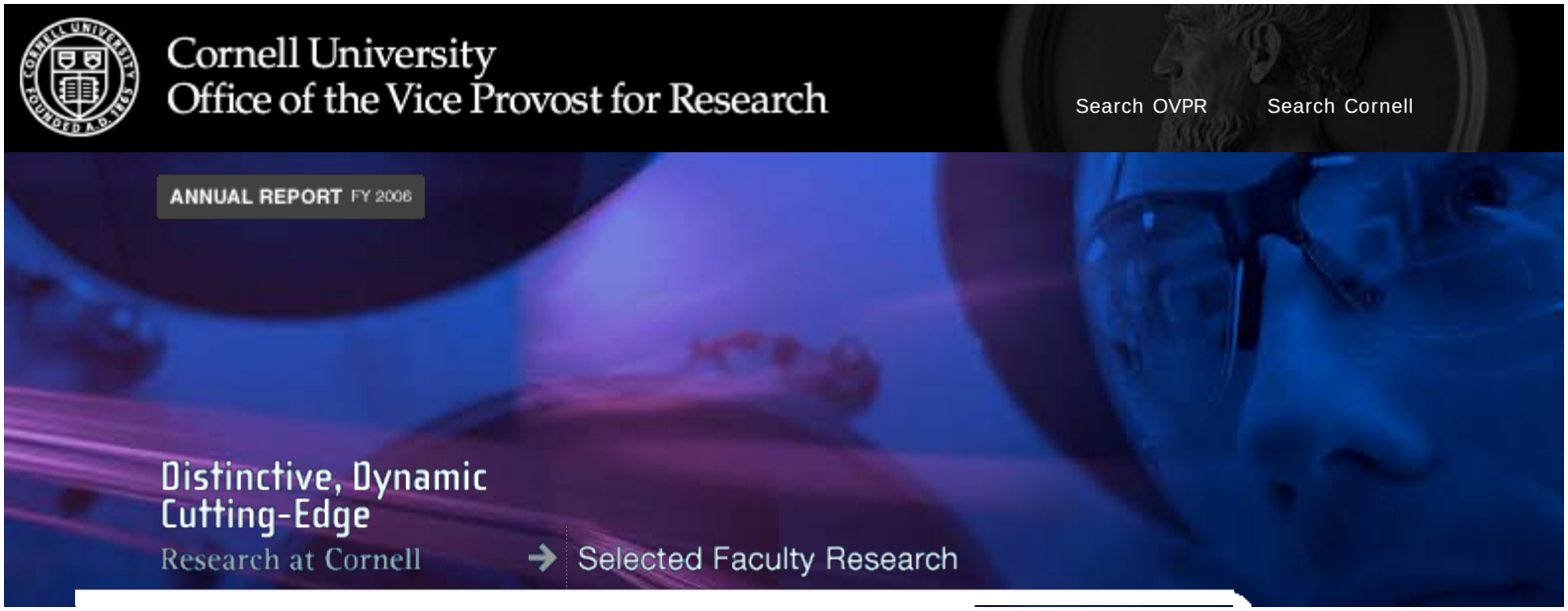

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23. Two Clusters of Rubble Near Earth

Jean-Luc Margot

Jean-Luc Margot, Astronomy, and research colleagues made the most detailed observations ever of a binary near-Earth asteroid (NEA) using the Arecibo telescope. The asteroid (1999 KW4) is a pair of light porous clusters of rubble that circle each other as they orbit from a point closer to the sun than Mercury and then outward, occasionally passing very close to Earth. Discovered in 1999, KW4 came within 2.98 million miles of Earth in 2001, when the asteroid was observed to be binary. Using antennae at Arecibo and NASA's Goldstone Deep Space Network, researchers for the first time had very detailed high-resolution images that allowed them to derive the shape of both asteroid components. The study involved precise tracking of an irregularly shaped binary system's motion, which is vital to learning how the two-part asteroid formed. KW4 is also valuable for researchers studying how to mitigate the potential threat asteroids pose to Earth. KW4 is classified as a potentially hazardous asteroid (PHA), but data show that its path will not encounter Earth for at least 1,000 years. The research highlights the importance of Arecibo's powerful radar.

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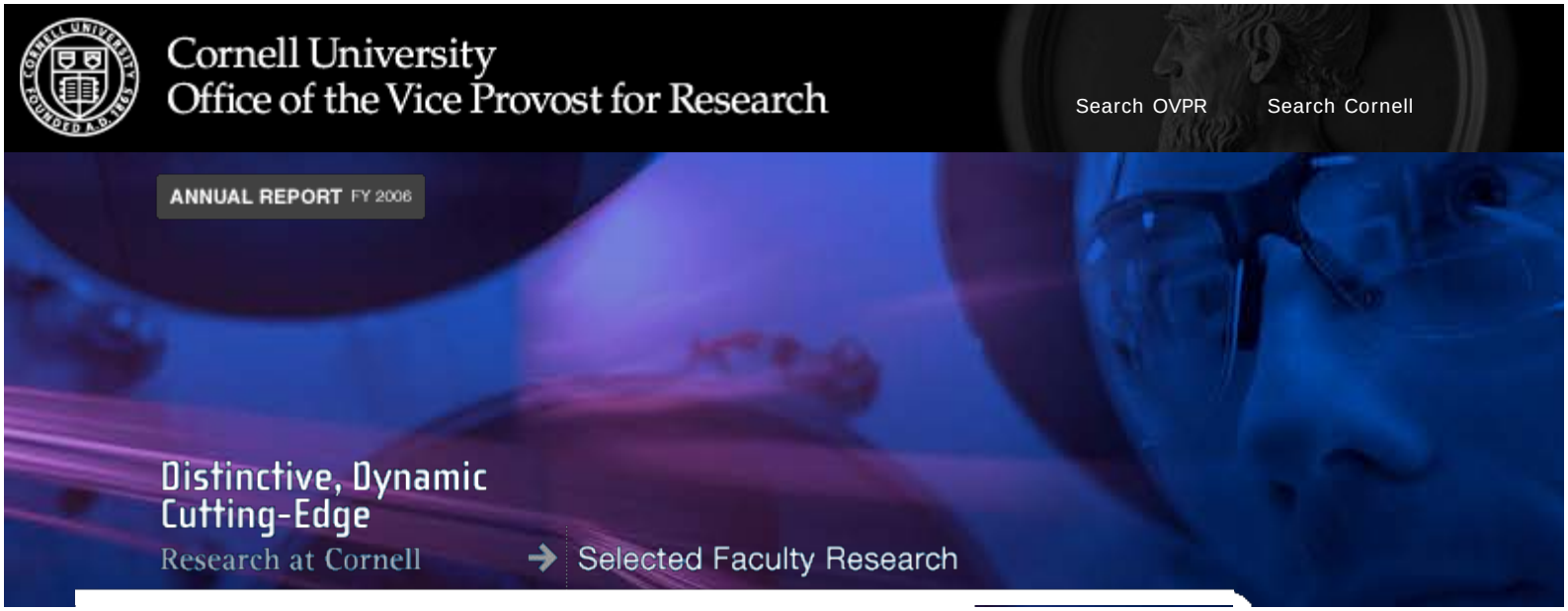

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24. An Alzheimer's Preventive Enzyme


Linda Nicholson

Linda K. Nicholson, Molecular Biology and Genetics, and her colleagues discovered that an enzyme, Pin 1, previously known to prevent the dementia of Alzheimer's disease now appears to be pivotal in guarding against Alzheimer's itself. Scientists knew that Pin 1 could prevent the tangles of knotlike brain lesions associated with Alzheimer's, but Pin 1 also seems to help prevent the buildup of plaque or flat deposits on the surface of brain cells. This new finding provides a specific molecular interaction that can be used as a target in drug discovery. Using nuclear magnetic resonance, the researchers observed Pin 1 acting on a protein called amyloid precursor protein (APP), which scientists believe to be the primary cause of Alzheimer's. When APP gets a phosphate group attached to its tail, it toggles slowly back and forth between two forms: one form leads to buildup of plaque and disease, while the other form is part of normal function and helps neurons grow and survive. Pin 1 acts as a molecular accelerator, allowing APP to toggle back and forth between its bad and good forms 1,000 times faster than if Pin 1 were not present. Without Pin 1, the disease-causing form of APP has a chance to build up to high levels toxic to cells, leading to plaque lesion. The research will be a foundation for new therapeutic approaches to treating Alzheimer's.

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25. CHF Risk in Hypertensive Patients

Peter Okin

Peter M. Okin, Medicine, Weill Cornell Medical College, led a study in which electrocardiogram (ECG) was found to be an effective tool for detecting risk of congestive heart failure (CHF) in patients with hypertension. An analysis of 8,696 hypertensive patients with no history of CHF found that a unique and well-known ECG wave pattern called strain was present in 923 patients (10.6 percent). These patients had a greater than threefold increased risk of developing CHF, with a five-year rate of 8.8 percent, compared with only 2.7 percent for those without ECG strain. The patients with strain also had a nearly fivefold increased risk of CHF mortality, with a five-year CHF mortality of 1.2 percent, compared with only 0.3 percent in patients without strain. The ECG strain, first identified in 1949, has previously been strongly associated with left ventricle hypertrophy (LVH) independent of coronary heart disease and with an increased risk of cardiovascular morbidity and mortality in heart patients. About 50 million Americans live with hypertension, which is controllable with treatment. These findings suggest that more aggressive therapy may be warranted in hypertensive patients with ECG strain to reduce the risk of CHF and CHF mortality. The findings may also increase early detection and treatment of CHF, a condition that affects five million Americans.

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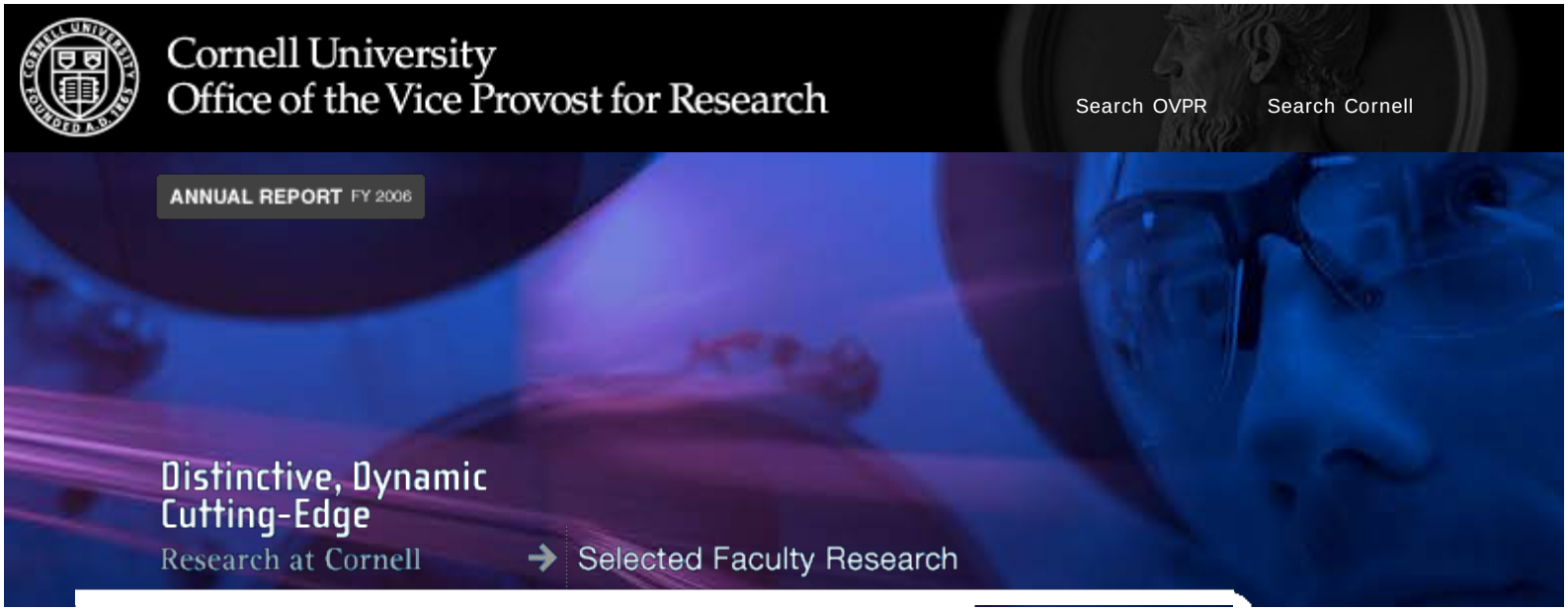

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26. Daughters as Caregivers


Karl Pillemer

Karl A. Pillemer, Human Development, and research colleagues found in a study—the first large-scale study with detailed data about all living children of older people—that mothers aged 65 to 75 are likely to name as preferred caregiver an adult child to whom they feel emotionally close and who has similar values. Mothers did not take into account the child's ability to care for them, such as the child's competing responsibilities or serious life problems. The study of 566 mothers in the greater Boston area also found that older mothers expected that child to be a daughter, even if there were available sons. Whether children had received support from their mother in the recent past was not a deciding factor, despite evidence from previous studies that indicate these children are most likely to provide help when needed. Pillemer's study found that mothers would name the child from whom they had received the most help in the past—usually a daughter. Older mothers named daughters more often because of the closeness of shared experiences and because of the embarrassment of sons performing personal-care tasks. With the increasing growth in the older populations, it is important for older parents to discuss future care and name the primary caregiver to avoid a mismatch between expectations, causing conflict, stress, and disappointment.

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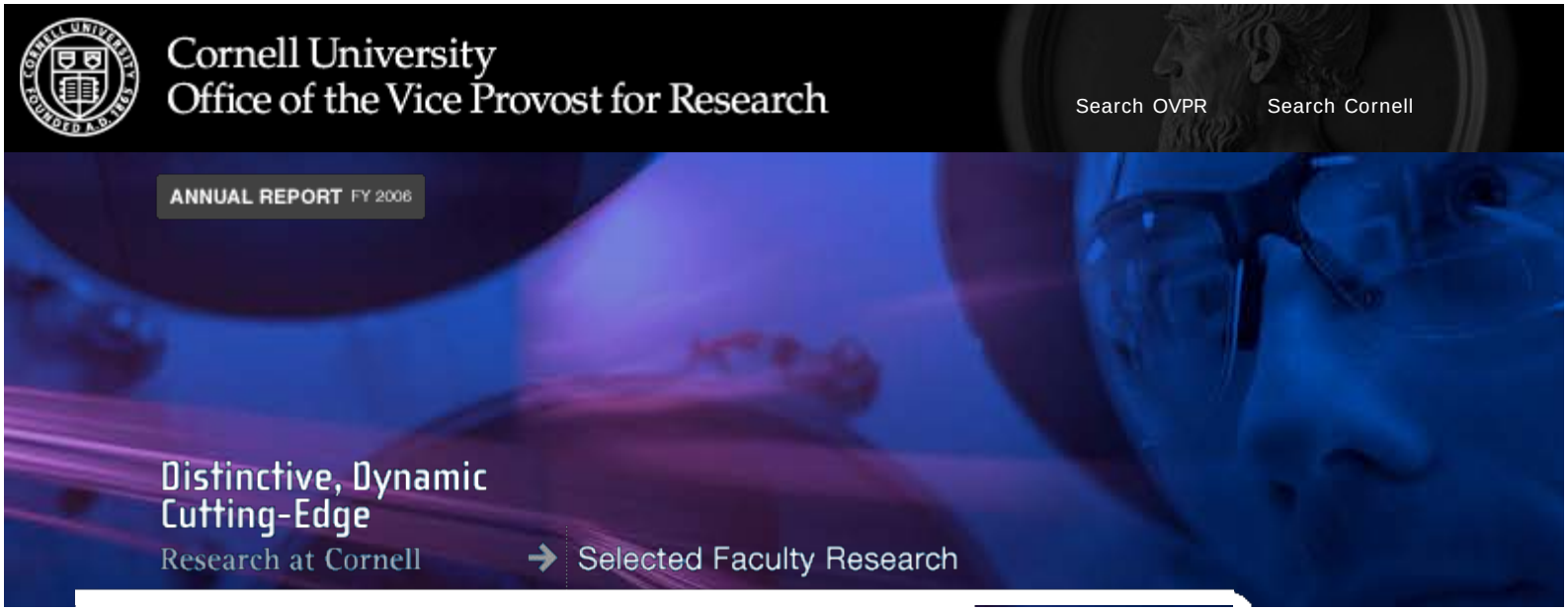

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27. Top 2006 Science Story

Per Pinstrup-Andersen

Per Pinstrup-Andersen, Nutritional Sciences, and research colleagues earned *Discover* magazine's recognition as one of the top six environment stories of 2006 for their research finding that Chinese farmers used just as much pesticide to raise cotton seven years after they began planting genetically modified (GM) cotton to resist bollworm infestation. Although the GM cotton was resistant to bollworms, increased populations of other insects caused farmers to use pesticides up to 20 times during a growing season. The study, based on interviews with 481 Chinese farmers in five major cotton-producing provinces, is the first to examine the long-term impact of GM cotton.

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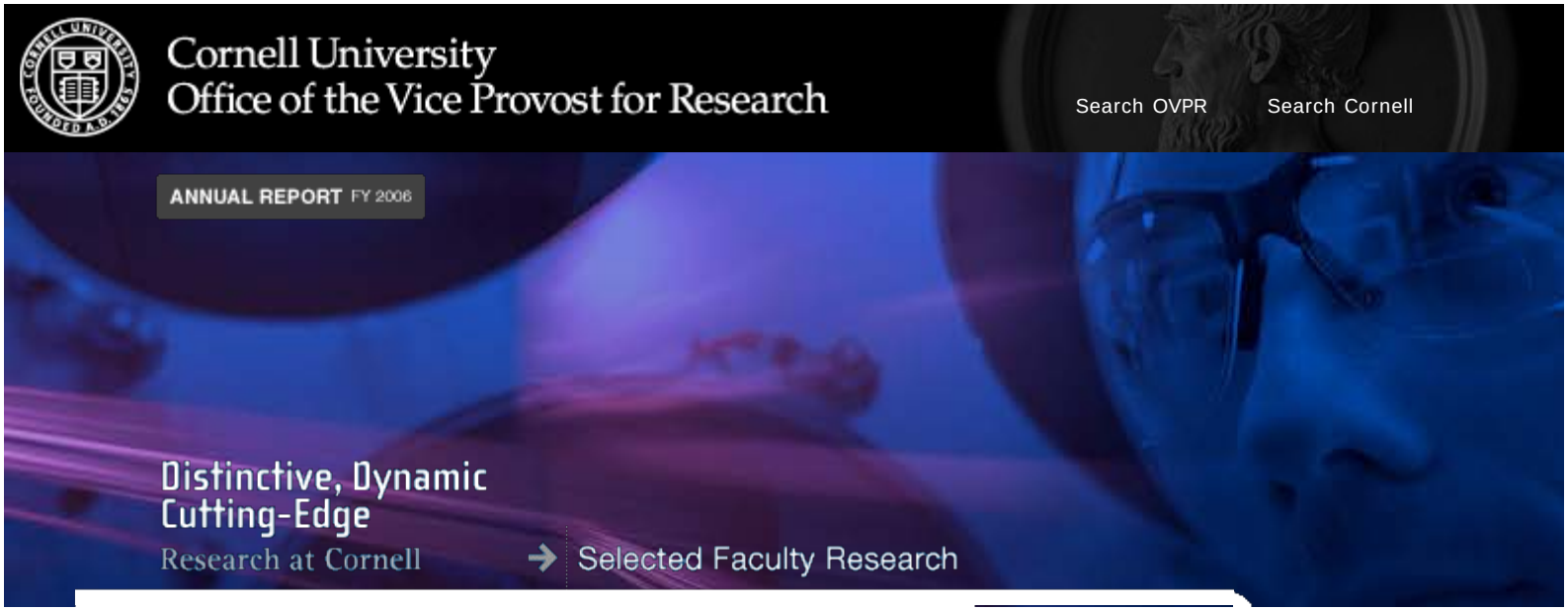

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28. Noiret™, Corot Noir™, and Valvin Muscat™

Bruce Reisch

Bruce I. Reisch, Horticultural Sciences, Geneva Campus, developed and tested three new wine grapes, which were officially named and released. Noiret™, Corot Noir™, and Valvin Muscat™ are adapted to the wine-growing regions of the East; they produce high-quality varietal wines superior to ones currently available to Eastern growers. Noiret™ is a mid-season red grape offering a richly colored red wine with green and black pepper notes, raspberry and mint aromas, and fine tannin structure. Corot Noir™ is a mid- to late-season red grape that can be used as a varietal option or for blending. Its wine has a deep red color with berry and cherry aromas. Valvin Muscat™ is a mid-season white wine grape with muscat flavor and aroma for blending and varietal production. These wine grapes are the seventh, eighth, and ninth wine grapes to be released by the New York Agricultural Experiment Station in Geneva.

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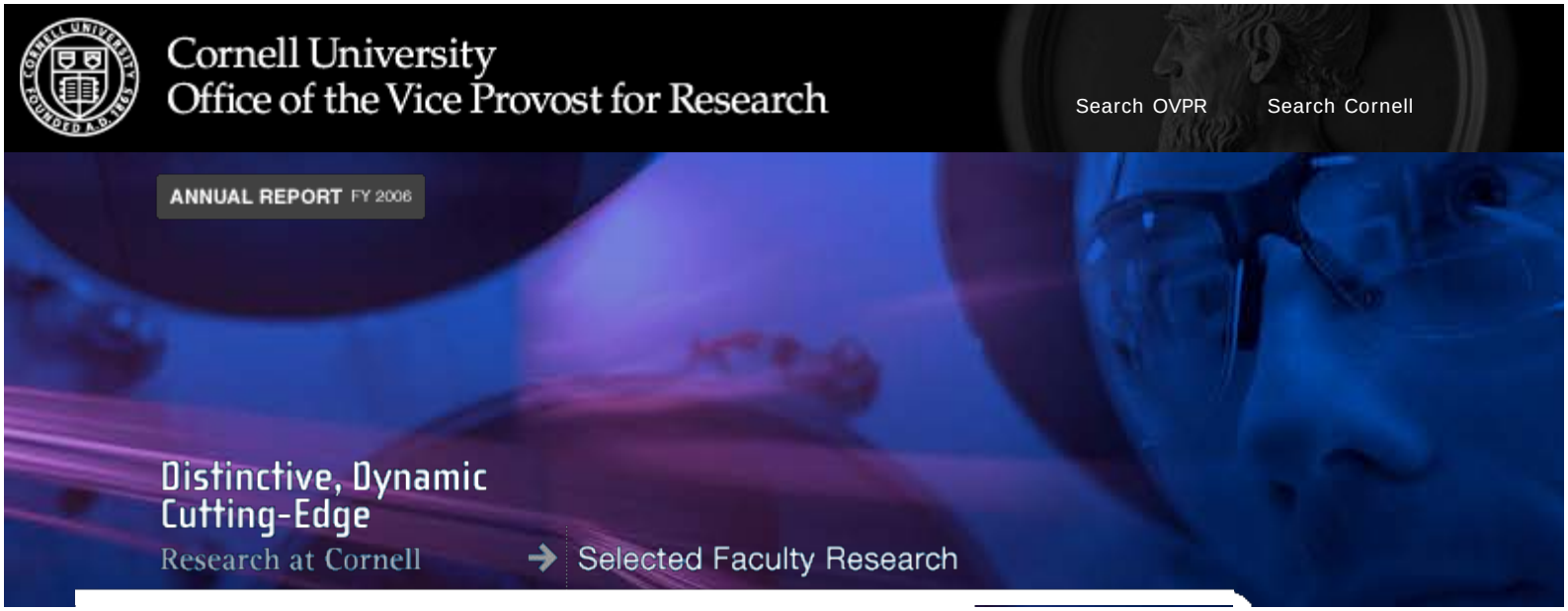

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29. A Mutant Mouse and Breast Cancer

John Schimenti

John C. Schimenti, Biomedical Sciences, and research colleagues' work with a mutant mouse, Chaos3, that is highly susceptible to mammary tumors, led to finding a potential link between genetic defects in DNA replication and breast cancer. After testing hundreds of mice pedigrees, the researchers identified the Chaos3 line, which has a twentyfold increase in genomic instability, a hallmark for cancer. Most cancers have genomic instability—increased mutations, chromosomal aberrations, and loss of genetic information during DNA replication—by the time they are identified. The researchers showed that genomic instability is leading to these cancers. The mutation occurs in the gene Mcm4, which is essential for DNA replication in both humans and mice. Schimenti and his colleagues found that the DNA codings in Chaos3's Mcm4 gene were partially impaired, greatly increasing the rate of defective DNA replications and genomic instability. The researchers do not know why the impaired genes in the Chaos3 mice led exclusively to breast cancer. They plan further study on other Mcm genes to find out if they also have a role in cancers.

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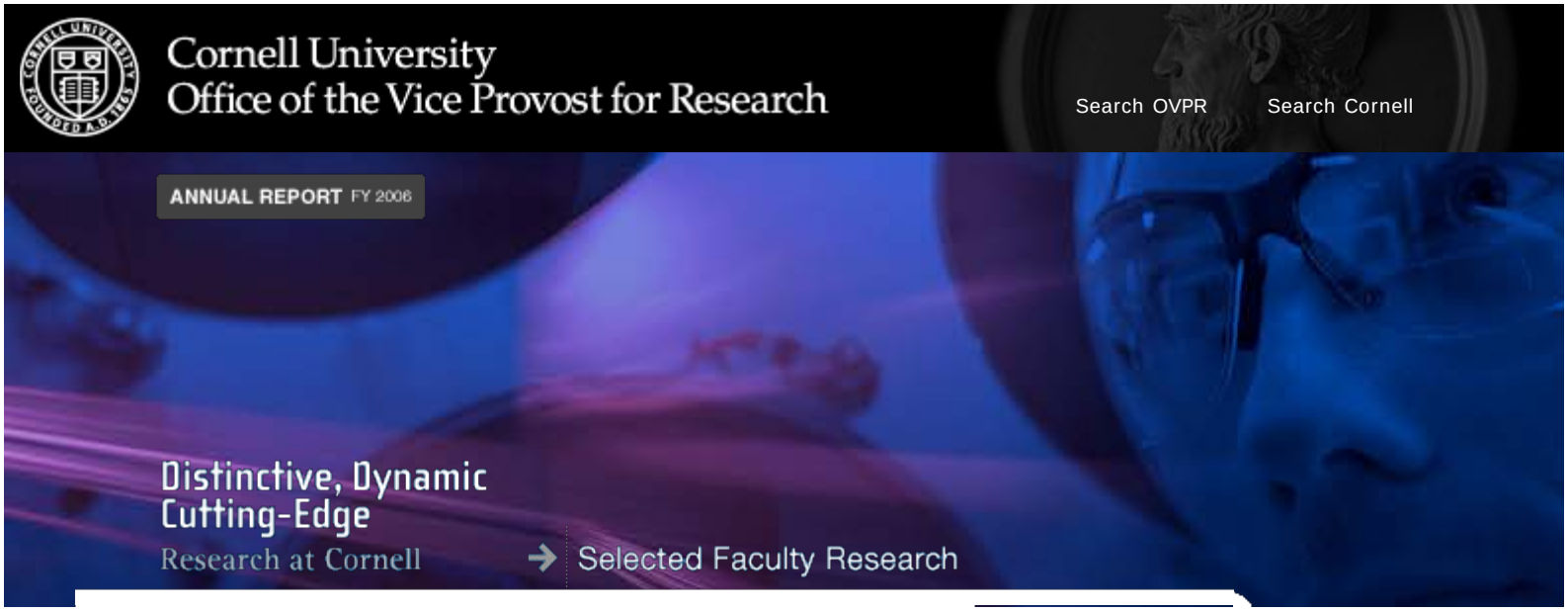

30. A Device at the Cutting Edge


Keith Schwab

Keith C. Schwab, Physics, created a device that approaches quantum mechanical limits of measurement. Quantum mechanics requires that a measurement of something cannot be made without perturbing it, but the researchers managed to make measurements that are very close to the uncertainty principle. According to the Heisenberg uncertainty principle, the precision of simultaneous measurements of position and velocity of a particle is limited by a quantifiable amount. The researchers created a sliver of aluminum on silicon nitride—8.7 microns long and 200 nanometers wide—pinned it down on both ends, and allowed it to vibrate in the middle. They coupled this device to a superconducting single electron transistor (SSET). They were able to get closer than ever to the theoretical limit with their measurement, detecting minuscule changes in the sliver's position. They also observed the sliver move through the phenomenon known as quantum back-action, where the act of observing something gives it a nudge of momentum. When the researchers applied certain voltages to the transistor, they saw the system's temperature decrease. They believe that, just by looking at the device, they can pull energy away from it. This is the first time that quantum back-action has been observed in a condensed matter context. The results could have implications for areas such as quantum computing and cooling engineering. Research into the quantum mechanics principle of superimposition, which holds that a particle can simultaneously be in two places, is next for Schwab and his colleagues.

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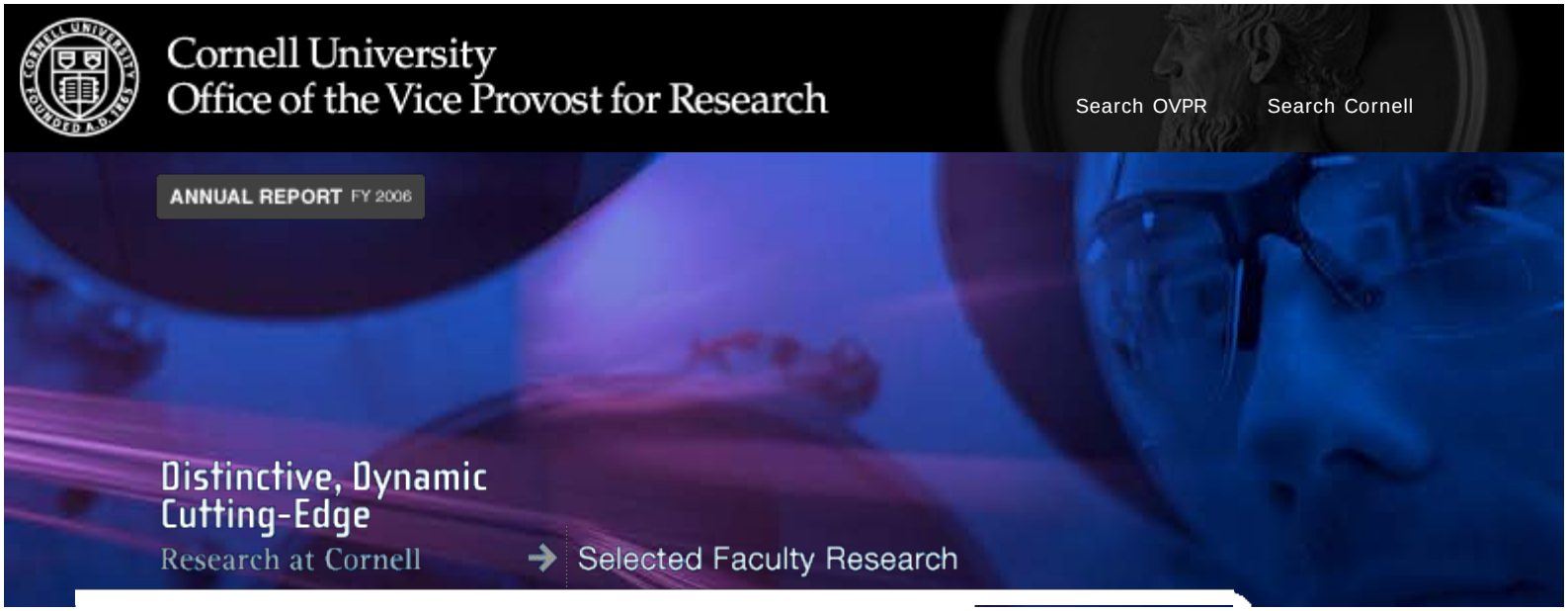

31. Swan Smarts


Thomas Seeley

Thomas D. Seeley, Neurobiology and Behavior, and his research group discovered the unique decision-making process that a honeybee swarm uses to choose a new home—a process that involves factions within a swarm competing for supporters. Although scientists had known that honeybees "waggle dance" to report food, Seeley's group confirmed that they also dance to report on potential nesting sites (tree cavities) as part of their group decision-making process. Various scout bees discover diverse sites and report them with their dances. The better the site is, the longer the dances advertising it and the faster the buildup of bees at the site. Nearly always, the scouts build up most rapidly at the site that first acquires the quorum threshold of 15 assembled bees to become the chosen site. Seeley and his colleagues, who have studied this group decision-making process for more than 10 years, reported this plebiscite among bees as a striking example of decision-making within an animal group that is complicated enough to rival the deliberations of any academic department. The bees' method, based on vigorous competition among options rather than a quick compromise, consistently yields excellent collective decisions. The researchers concluded that the honeybees' method of decision making, which includes an open forum of ideas, frank "discussion," and friendly competition, might help human committees achieve collective intelligence and avoid collective nonsense.

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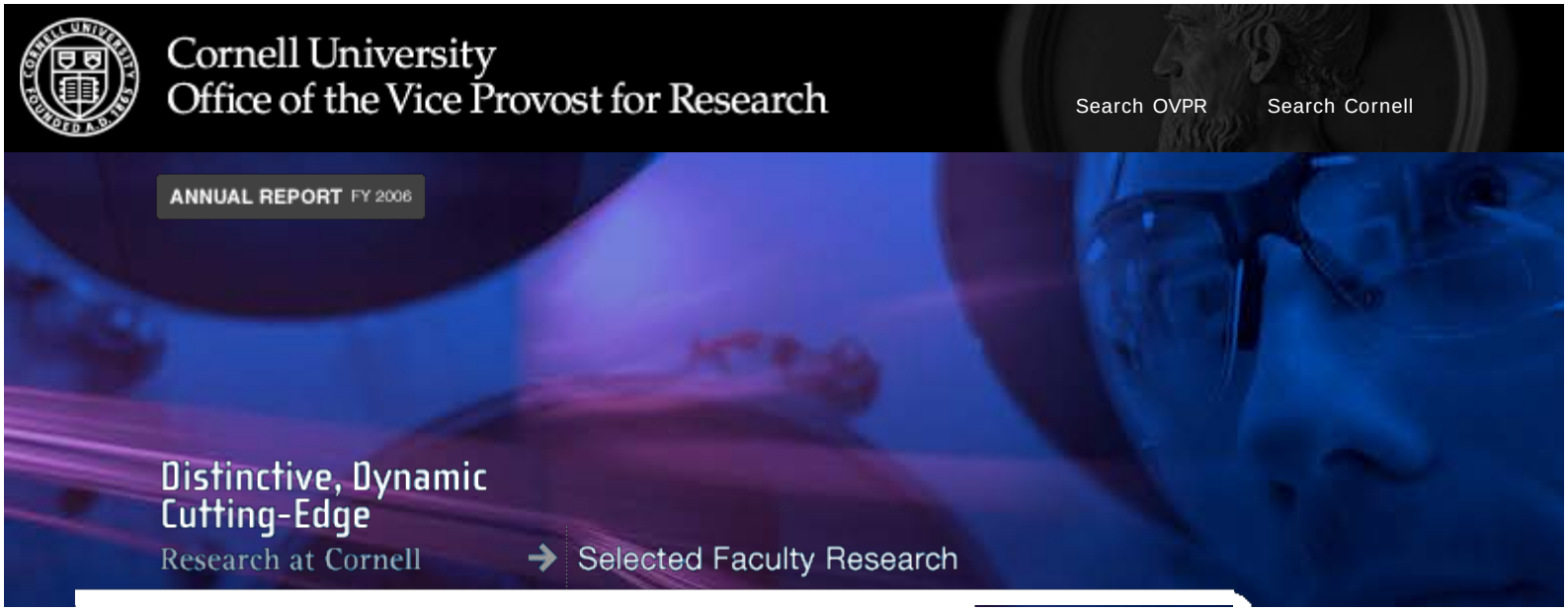

32. Seeing Atoms Individually


John Silcox

John Silcox, Applied and Engineering Physics, colleague K. Andre Mkhoyan, and research team developed techniques that let scientists see individual atoms within crystal molecules. This advance allows researchers to predict more accurately at every point the physical properties of a crystal. The researchers used a scanning transmission electron microscope (STEM) at IBM on samples of aluminum nitride, gallium nitride, and other crystals important to nanotechnology research to demonstrate their technique. On a sample of aluminum nitride, the researchers used a technique called annular dark imaging, which revealed pear-shaped molecular columns, with the larger aluminum atoms at the thicker end and the smaller nitrogen atoms at the narrower end. This was the first time the smaller atoms in such a structure were caught in an image. The key is the narrowness of the scanning electron beam. This new technique allows researchers to characterize a crystal precisely at any region of the structure, which is key in nanotechnology, where the structure of an individual molecule can determine a device's behavior.

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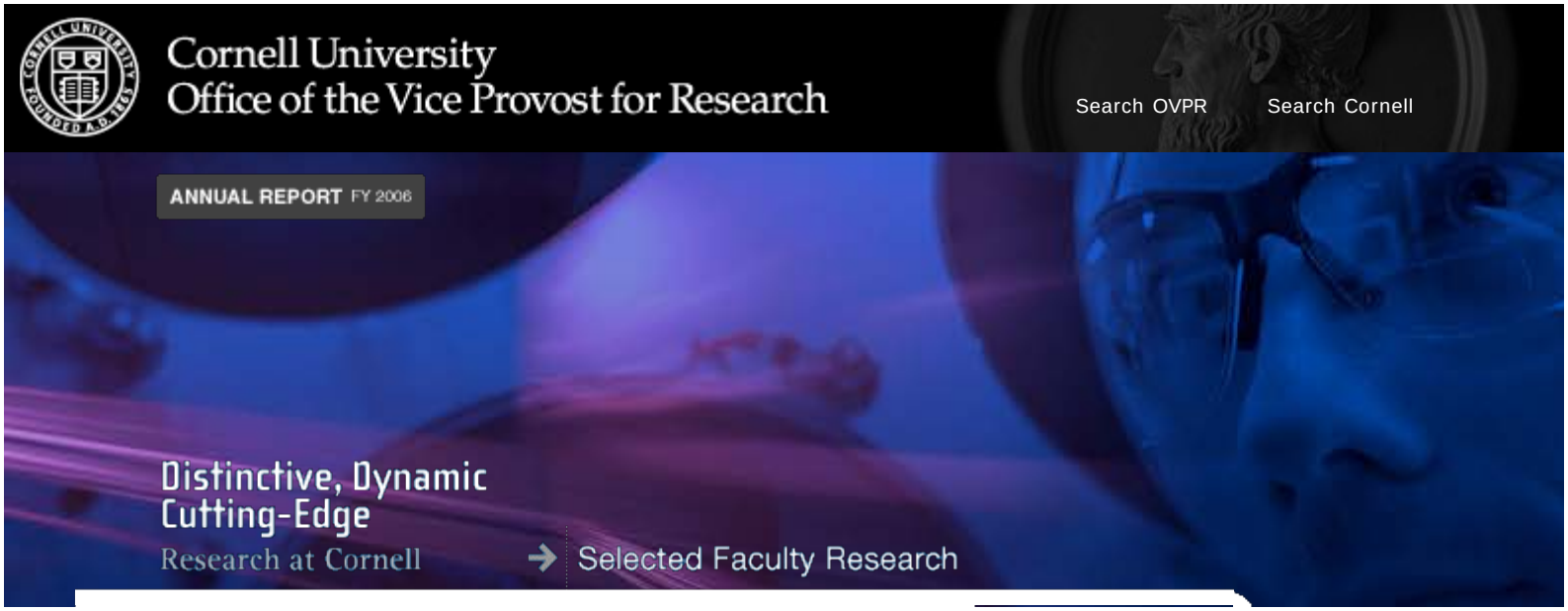

33. A “C” of Scholarship

Buzz Spector

Buzz Spector, Art, and his students built a sculpture, “Big Red C,” using books written by Cornell faculty, particularly in literature and the arts and humanities, to represent the breadth and impact of Cornell’s scholarship. The ziggurat-like “C” contained more than 800 works, spanning 1953 to late 2006. M. H. Abrams’ *The Mirror and the Lamp*, Michael Kammen’s *Visual Shock*, Rebecca Harris-Warrick’s curated Donizetti scores, James Bell’s *Postcards from Mars*, David Feldshuh’s *Miss Ever’s Boys*, and Alice Fulton’s *The Cascade Experiment* were among the faculty titles. Fifty works in English and in translation by Jonathan Culler and Mary Beth Norton’s works in American history helped to make up the installation that rose to 37 inches from the floor. The work was exhibited in New York City at Cornell’s College of Architecture, Art, and Planning space in the Chelsea district. This was Spector’s first major installation in New York City.

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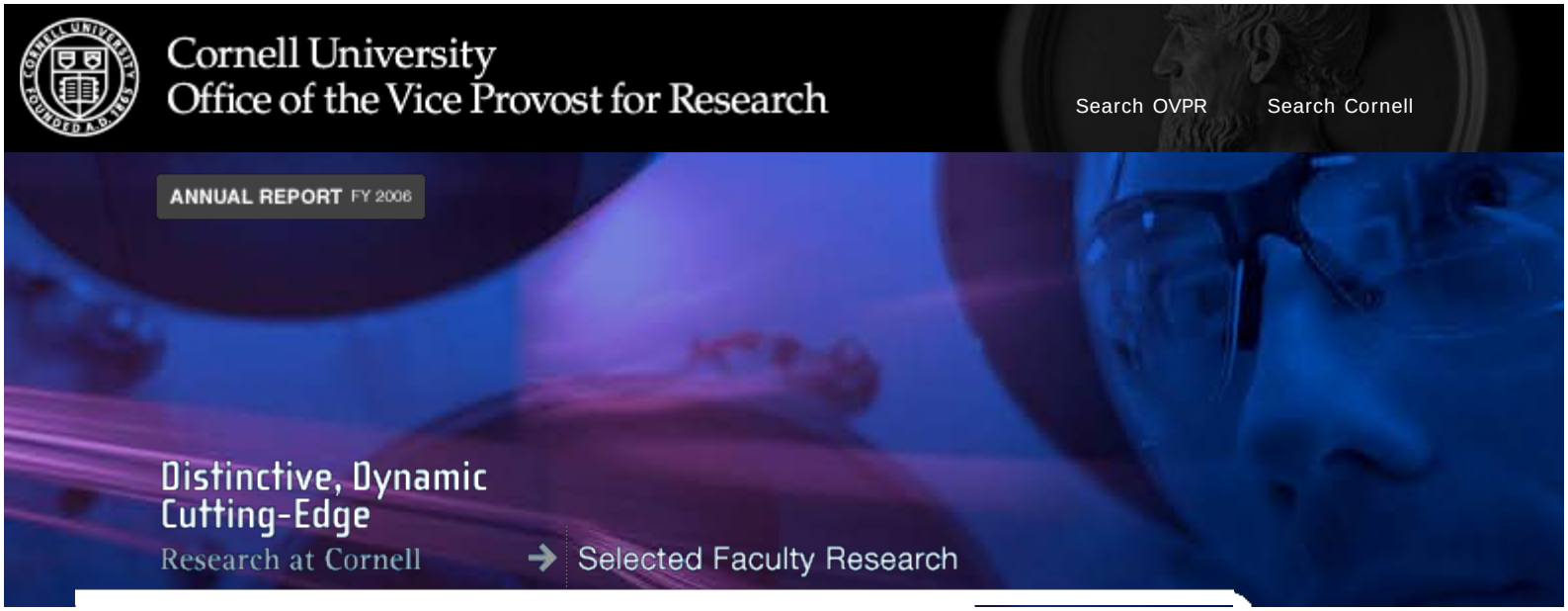

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34. Clean Hotel Rooms

Michael Sturman

Michael C. Sturman, Hotel Administration, developed a metric by which hotels can ensure that their rooms are cleaned in a consistent manner. In a study examining the expense of cleaning rooms, Sturman found that the cost of chemicals was negligible compared to the cost of housekeeping staff, but by measuring chemical use, hotel managers could determine the consistency with which housekeepers maintained the hotel's cleaning standards. Although the metric will not replace inspections and other methods of checking room cleanliness, it provides an objective and inexpensive measure of housekeeping consistency.

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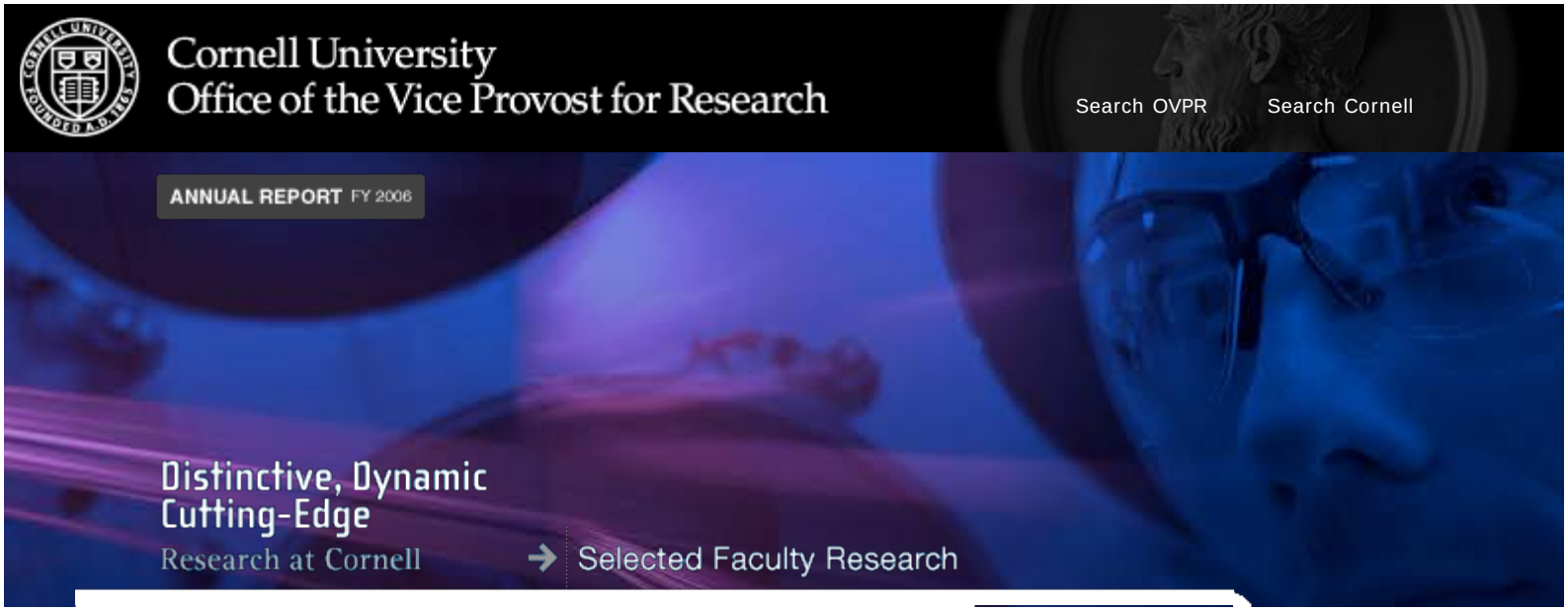

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35. Tunes of the Loons


Charles Walcott

Charles Walcott, Neurobiology and Behavior, and his research team discovered that male loons change their vocalizations after winning a contest for female loons and new nesting territory. Scientists had believed that a bird's songs remained the same for life. The researchers reported that female loons scatter over wide areas when ready to breed, but male loons claim a small lake or part of a larger lake near the place they were hatched. Rival males loons challenge residents and fight for the territory and the females. The victor changes his song, called a yodel. The researchers studied 527 yodels of 16 male loons on 21 lakes at the Seney National Wildlife Refuge in Seney, Michigan, and 3,107 yodels of 82 loons on 63 lakes near Rhinelander, Wisconsin. Some biologists have advocated using sound as a way to identify specific birds, as opposed to netting and tagging birds, which may be traumatic. Since loons change their songs, however, this strategy will not be feasible. The research provides valuable insights into the loon's social and territorial behavior, which will aid in conservation efforts.

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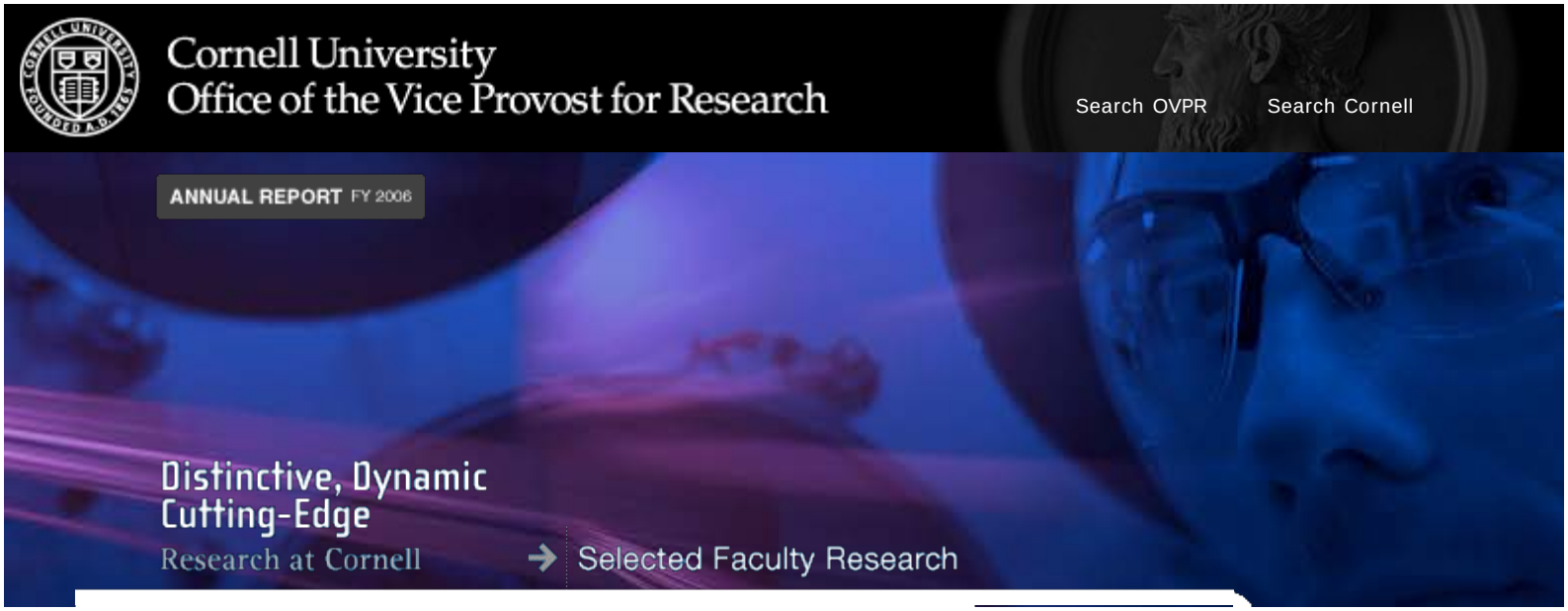

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36. TV Viewing in Early Childhood


Michael Waldman

Michael Waldman, Johnson Graduate School of Management, and Sean Nicholson, Policy Analysis and Management, analyzed data that suggested a connection between early childhood television viewing and the onset of autism. Members of the medical community increasingly believe that some factor in the environment triggers an underlying biological or genetic predisposition to autism. The researchers explored the connection between autism and two factors that increase the amount of television watched by younger children—how much it rains or snows in a region and access to cable television. One finding was that current school-aged children who live in California, Oregon, and Washington counties receiving large amounts of rain and snow when the children were young are more likely to be diagnosed with autism. Although this study is not definitive, it supports the need to look closely at early childhood television viewing.

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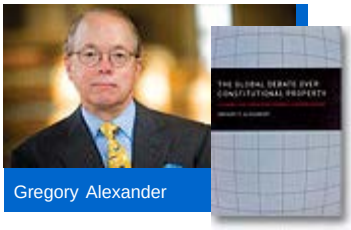
01. Gregory S. Alexander, Law



Gregory Alexander

The Global Debate over Constitutional Property: Lessons for American Takings Jurisprudence (University of Chicago Press, 2006). Alexander enters the international debates on constitutional property. Should property be a constitutional right or a legal right over which democratic majorities have greater control? In some societies property holdings are insecure, despite constitutional provisions that are supposed to guarantee significant security for property rights. In other countries—Canada, for example—property rights have considerable legal protection, although the right of property was deliberately omitted from Canada's 1982 Charter of Rights. International institutions like the World Bank are pushing to make property a matter of constitutional protection so that property holdings are more secure, particularly in new democracies. Alexander argues that culture matters as much as text: how much legal security property holdings have is determined by the society's culture and legal and political traditions as much as by what a society's written constitution says or does not say. He says that the World Bank has completely ignored the role of culture in pursuing their program of legal standardization in emerging democracies. The book is aimed at a legal audience, as well as scholars and policy makers from fields interested in the interactions between legal systems and economic development.

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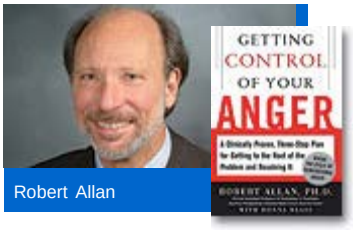
02. Robert Allan, Psychology in Psychiatry, Weill Cornell Medical College



Robert Allan

Getting Control of Your Anger: A Clinically Proven, Three-Step Plan for Getting to the Root of Your Anger and Resolving It (McGraw-Hill, 2006). Allan, a leading expert in the field of anger management, outlines ways to identify the causes of one's anger and control it. Anger, he says, often runs in families, and the reasons for anger are tied to basic needs that we may or may not be aware of, such as respect and territory. He offers strategies and tools to help anger-prone people to deflect the anger and break from its destructive cycle. One example is to identify the hook—to diffuse situations by recognizing the good reasons we get angry (such as injustice and incompetence) as bait and learning how not to get hooked. The hook is the single most important tool as rated by participants in the Recurrent Coronary Prevention Project, a large clinical trial treating type-A behavior that reduced heart attack rates by 44 percent. The book covers how to stop alienating family and friends and reduce the likelihood of heart attacks and strokes—a short course in how the anger-prone can live happier and healthier lives.

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03. N'Dri T. Assié-Lumumba, Africana Studies and Research Center

Higher Education in Africa: Crises, Reforms, and Transformation (Council for the Development of Social Science Research in Africa, 2006). Assié-Lumumba provides theoretical tools for analyzing contemporary African higher education systems and institutions. She examines policy challenges and the prospects for social progress. The book traces the historical roots and the global factors contributing to the African higher education crisis and the search for solutions, with analyses of the origins, nature, and mission of African higher education; the problems associated with cultural colonization and the dependency trap; the global/local nexus, with special attention to the structural adjustment programs (SAPs); and various waves of reforms and innovations. It also presents a synopsis of studies conducted, highlighting findings and recommendations. Assié-Lumumba argues for the need to identify new opportunities for African higher education in the selective use of information and communication technologies and decolonized global partnerships. Higher education has the potential to serve the public good, the author argues, promoting structural change by using African assets, including indigenous knowledge, within the context of fusion and the African diaspora.

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04. James F. Bell, Astronomy

James Bell

Postcards from Mars (Dutton, 2006). Heavy and sleek, with foldout panorama shots, landscapes, and close-ups of some of the most important scientific finds, Bell's new book provides a comprehensive narrative in words and pictures of the Mars Exploration Rover Mission. Bell wanted to present the beauty of what humans had never before seen in an art book, not a book about space. In a place where everything is dramatically different from Earth—sunsets and colors, for example—the book's more than 100 images depict Mars' "weird" colors as well as false colors, such as dressing up each variation in texture or soil composition in Andy Warhol–like hues. Bell is the leader of the Pancam color camera team for the mission.

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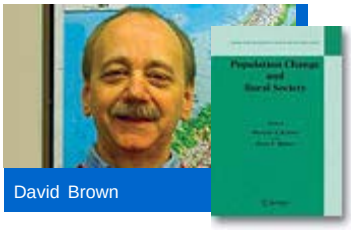
05. David L. Brown, ed., Development Sociology, (with William A. Kandel)



Population Change and Rural Society (Springer, 2006). The editors bring together the latest research on social and economic trends in rural America. The book is the first scholarly assessment focused exclusively on rural demographic trends to exploit data from the Census 2000. Conducted by an interdisciplinary and regionally diverse group of social scientists—demographers, geographers, historians, and sociologists—this original research highlights four major themes transforming contemporary rural areas. They are population composition change, industrial restructuring and changing livelihoods, changing patterns of rural land use, and areas of persistent disadvantage and emerging opportunity. Each theme is examined with an expanded overview and geographically varied case studies. The book serves the interests of agricultural economists, environmental psychologists, regional planners, rural policy analysts, and other social scientists.

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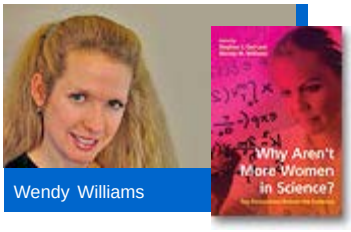
06. Stephen J. Ceci and Wendy M. Williams, eds., Human Development



Why Aren't More Women in Science? Top Researchers Debate the Evidence (American Psychological Association, 2007). The editors present 15 essays written by top researchers, chosen to reflect the diversity and complexity of views on sex differences in ability. Some essayists even interpret differently the same data on the causes and consequences of so few women in certain fields. The discussions include topics such as the role of prenatal and postnatal hormones on spatial cognition, the claim that female babies are naturally more oriented toward people than are male babies (who are more oriented toward objects), the differences between female and male brains, and social factors pertaining to balancing work and family. In their introduction, the editors define the key issues and put them in historical context. They specifically examine how much of the variance in scientific performance is due to biological factors (such as sex differences in brain organization) versus social factors (such as willingness to work very long hours at one's job). In their conclusion they synthesize and integrate the disparate views. The book is accessible and appeals to students and nonspecialists, as well as psychologists and other social scientists.

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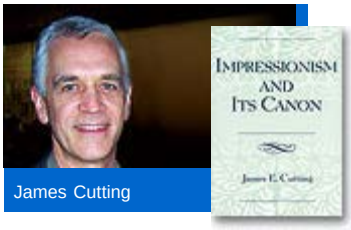
07. James E. Cutting, Psychology



James Cutting

Impressionism and Its Canon (University Press of America, 2006). Cutting examines the diffuse relations among impressionist artists and how history combined them into a uniform group. French Impressionism is, however, a pivotal artistic canon. The book explores the evolution of this canon and its current iconic role in Western culture. It focuses on the artists, museums that showcased French Impressionist artwork, collectors who donated the work to museums, and the scholars and art professionals who have written about the art. It highlights the role of the public in supporting and solidifying the French Impressionism canon.

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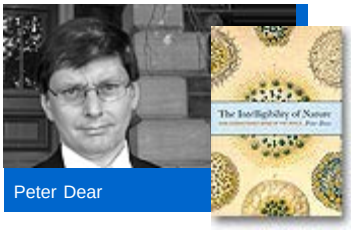
08. Peter R. Dear, History



Peter Dear

The Intelligibility of Nature: How Science Makes Sense of the World (University of Chicago Press, 2006). Between the time of Decartes and Lavoisier, natural philosophy and practical scientific techniques merged, giving rise to modern science. In this history of modern science—from 1600 to 1950, from the natural philosopher to the scientist—Dear examines the tension between theory and practicality or the application of science. He demonstrates how both have been essential to the advancement of science. He considers the cultural authority and prestige of science: when we want to know how something in the natural world works, we ask a scientist. Scientists like Galileo, Descartes, Newton, Darwin, Mendal, and Einstein have been revered throughout history. They have provided profound and sustaining insights into the meaning of the universe. Using the work of these and other scientists, Dear illustrates how the very different principles of knowing and doing were united as a new enterprise—science—practiced by a new kind of person, a scientist. He summarizes the divergence of the two scientific methodologies by contrasting Einstein and Bohr. Einstein wanted physics to speak of a world that exists independently of human observation, whereas Bohr wanted quantum mechanics to be viewed as necessary to how the world works—he considered quantum mechanics a discovery, not a theory. What quantum mechanics could not know, Bohr believed, humans could not know.

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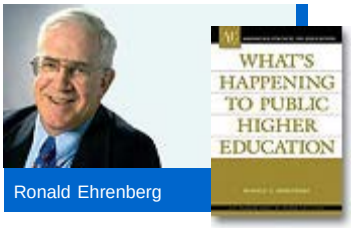
09. Ronald G. Ehrenberg, ed., Industrial and Labor Relations



Ronald Ehrenberg

What's Happening to Public Higher Education? (Greenwood, 2006). In this comprehensive overview of the state of public higher education, Ehrenberg presents what constitutes the crisis, as well as a framework for taking action against the crisis. Issues analyzed include decreased funding for public higher education, noncompetitive faculty salaries, the increase of adjunct faculty, decreases in financial aid for the needy, and increased attrition rates. Experts in the field cover national trends and their effects on students; changes in public higher education and their effects on constituents, from students to state legislators; and what university administrators see as necessary for public institutions to continue to carry out their missions. The book evolved from the 2005 annual conference of the Cornell Higher Education Research Institute (CHERI). It will appeal to anyone interested in the state of higher education.

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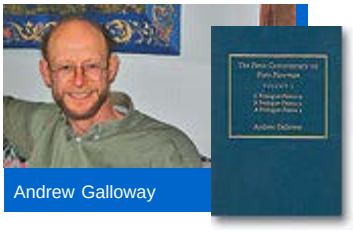
10. Andrew S. Galloway, English



Andrew Galloway

The Penn Commentary on Piers Plowman, Volume I (University of Pennsylvania Press, 2006). This work inaugurates the first full commentary on the medieval poem *Piers Plowman* since the late nineteenth century. Known as one of the most important works of the Middle Ages, the extended allegorical poem—with its three authorial versions of extreme complexity—has cried out for a comprehensive, modern annotation. Placing the allegorical dream vision of Piers Plowman within the literary, historical, social, and intellectual contexts of late medieval England, experts assess the work's long history of critical interpretation and offer original materials and insights. Galloway's initial volume covers the poem's first vision (from the Prologue through Passus IV) in all three versions, accepting the C text as the poet's final word. The volume appeals to readers with an interest in and some basic knowledge of medieval literature and language.

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11. Valerie P. Hans, ed., Law

Valerie Hans

The Jury System: Contemporary Scholarship (Ashgate, 2006). Hans presents a collection of scholarship on trial by jury, ranging from the jury's historical development to its contemporary use. The book includes empirical work on jury selection, jury decision-making, and jury reform. Among more than 50 expert scholars, other Cornell faculty included are Theodore Eisenberg, Jeffrey J. Rachlinski, and Martin Wells on "Reconciling Experimental Incoherence with Real-World Coherence in Punitive Damages." The book is part of the publisher's International Library of Essays in Law and Society series.

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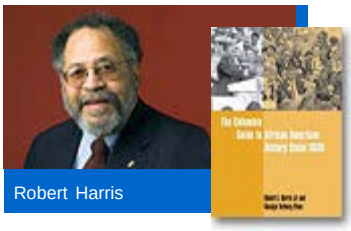
12. Robert L. Harris Jr., ed., Africana Studies and Research Center, (with Rosalyn Terborg-Penn)


Robert Harris

Columbia Guide to African American History Since 1939 (Columbia University Press, 2006). The editors present a multifaceted approach to African American history of this period, beginning with Marion Anderson's concert in front of the Lincoln Memorial in 1939. This narrative and reference tool uses a historical survey of key personalities and movements, essays by leading scholars on the African American experience, a chronology of events, and a guide for further study to examine the major developments leading to the reexamination of racial values and practices in American society. The editors explore topics such as African American historical efforts to address racism and inequality, the civil rights and black power movements, changes in immigration patterns that complicated the conventional black/white dichotomy in the United States, and the uneasy existence of a growing African American middle class and a sizable underclass.

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13. Michael G. Kammen, History

Michael Kammen

Visual Shock: A History of Art Controversies in American Culture (Knopf, 2006). Americans' relationship with art is Kammen's journey through art controversies from the early years of the American Republic to the present. Among artists, critics, scholars, politicians, and citizens, art has always generated strong reactions. Kammen explores public reactions and debates in American history over the appropriateness of paintings, sculptures, memorials, and monuments. He examines the nature, diversity, and persistence of art disputes and shows what has changed since the 1830s—and why. He covers controversies, such as the statue of George Washington by sculptor Horatio Greenough, commissioned by Congress in 1833, which showed Washington as a bare-chested Greco-Roman deity enthroned on a pedestal, as well as the Lincoln Memorial, the Vietnam Veterans Memorial Wall, the NEA 4, and memorials for victims of 9/11. Kammen concludes that Americans have historically resisted modernism in its different phases and that a majority of Americans even disapprove of government support for the arts.

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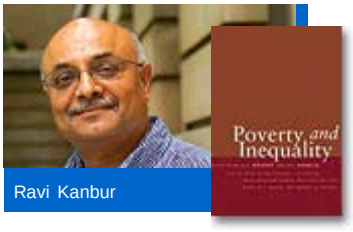
14. Ravi Kanbur, ed., Applied Economics and Management, (with David B. Grusky)



Ravi Kanbur

Poverty and Inequality (Stanford University Press, 2006). This book demonstrates that scholars and policy makers need new conceptual and analytic models in order to make sense of new and emerging forms of poverty and social exclusion. The editors bring together leading public scholars—Amartya Sen, Martha C. Nussbaum, François Bourguignon, William J. Wilson, Douglas S. Massey, and Martha A. Fineman—to deal with topics including how contemporary poverty is forged in neighborhoods, how discrimination in housing markets is a profound source of poverty, how gender inequalities in the family and in the social evaluation of the caretaking role is a hidden dimension of inequality, and how contemporary inequalities may be best understood as an inequality in fundamental human capabilities.

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15. Peter J. Katzenstein, ed., Government, (with Robert O. Keohane)

Anti-Americanisms in World Politics (Cornell University Press, 2006). The editors bring together distinguished scholars to explore a subject with much commentary but little research. Using qualitative and quantitative methods, these experts consider the many different ways to be anti-American. The editors identify four major types of anti-Americanism: liberal anti-Americanism, social anti-Americanism, sovereign-nationalist anti-Americanism, and radical anti-Americanism. Some forms of anti-Americanism respond to what the United States does, and these forms change when U.S. policies change. Other forms are reactions to what the United States is and involve greater bias and distrust. Historians, poling-data analysts, political scientists, anthropologists, and sociologists take an in-depth look at the complexity of anti-Americanism and conclude that there are as many ways to be anti-American as there are ways to be American.

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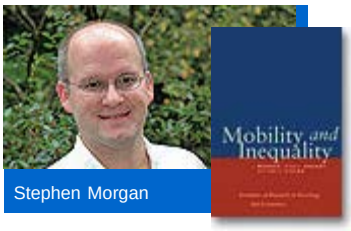
16. Stephen L. Morgan, Sociology, and Gary S. Fields, Industrial and Labor Relations, eds., (with David B. Grusky)



Mobility and Inequality (Stanford University Press, 2006). This volume of research on social and economic mobility probes the effects of in-equality on mobility in industrial societies. The experts examine the range of mobility patterns in recent decades, the mechanisms that generate mobility, and the role of educational institutions in constraining and enabling mobility. They present original research and conceptual arguments as approaches to questions such as these: How often do working-class children obtain college degrees? How frequently do the children of doctors and lawyers fail to enter high-status careers after schooling? As inequalities of wealth and income have increased over the last 30 years, have patterns of generational mobility changed?

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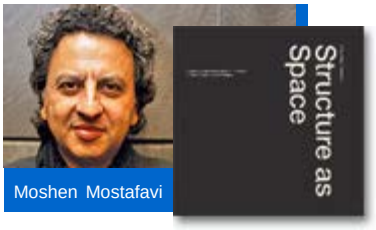
17. Moshen Mostafavi, ed., Architecture



Structure as Space: Engineering and Architecture in the Works of Jürg Conzett and His Partners (Architectural Association, 2006). Exploring the relationship between engineering and architecture and the impact of engineering infrastructures on the natural environment, this large-format book covers a key figure: Swiss engineer Jürg Conzett, whose work is recognized as intricate and elegant. The book features the work of Conzett's firm, which includes many bridges, an army canteen building, a canopy for an army barracks, a school in a remote farming community, and buildings for a goat dairy. Although it includes many photographs of finished projects, the book is closer in spirit to a how-to manual, with structural diagrams and engineering drawings revealing the secrets underlying each structure. The book includes chapters by Mostafavi, Conzett himself, and Bruno Reichlin, a Swiss architect and theorist.

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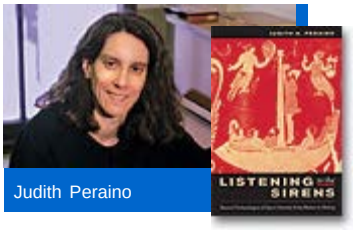
18. Judith A. Peraino, Music



Judith Peraino

Listening to the Sirens: Musical Technologies of Queer Identity from Homer to Hedwig (University of California Press, 2006). Using a theoretical framework based on French philosopher Michel Foucault and extensive historical material, Peraino explores how music has been deployed throughout history to question norms of gender and sexuality. She begins with mythology—the sirens' seduction of Ulysses with their music—and continues with analysis of musical creatures, gods, and humans associated with behavior that breeches social convention. From ancient Greece to the Middle Ages to the contemporary period, the book examines the musical ways in which queer individuals express and discipline their desire, represent themselves, build communities, and subvert heterosexual expectations. Peraino covers medieval songs; works by Handel, Tchaikovsky, and Britten; performers such as Judy Garland, Melissa Etheridge, Madonna, and Marilyn Manson; women's music and disco; and the movies *The Rocky Horror Picture Show* and *Hedwig and the Angry Inch.*

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19. Annette Richards, ed., Music

Annette Richards

C. P. E. Bach Studies (Cambridge University Press, 2006). This collection of nine wide-ranging essays by leading scholars of eighteenth century music brings new perspectives to Carl Philipp Emanuel Bach's later work (1767–1788 in Hamburg). The book explores literary, theological, and aesthetic contexts of his work offering perspectives on Bach's position on contemporary concepts of responsiveness, his sacred music, and views on religion and on the contemporary and posthumous reception of his music. The book explores Bach's music in its cultural contexts. The collection also includes an essay by Cornell music faculty David Yearsley entitled: "C. P. E. Bach and the Living Traditions of Learned Counterpoint."

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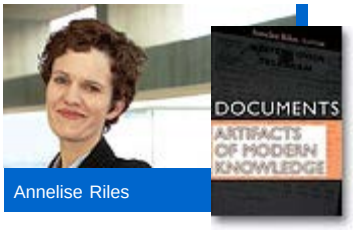
20. Annelise Riles, ed., Law/Anthropology



Documents: Artifacts of Modern Knowledge (University of Michigan Press, 2006). Riles pulls together a collection of work that considers how an understanding of documentary conventions inform the creation and circulation of modern forms of knowledge, expertise, and governance. The prevalence of documents in modern life—from the sciences to bureaucracy to law—challenges humanistic social science. Fieldworkers document social realities by collecting, producing, and exchanging documents of their own. The book explores how ethnographers conceive, grasp, appreciate, and see patterns, and it demonstrates that the core of the ethnographic methodology now lies in the way ethnographers respond to and share the professional passions and problems of their subjects. Riles categorizes this collection of work into three parts: Academic and Bureaucratic Knowledge, Authorship and Agency, and Collaboration and Response. The book opens up a new field of critique that will advance ethnography and qualitative inquiry.

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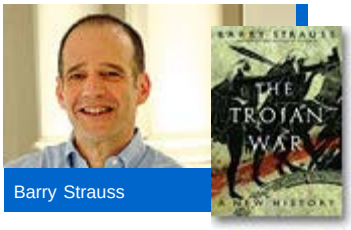
21. Barry S. Strauss, History



The Trojan War: A New History (Simon and Schuster, 2006). Giving a step-by-step account of what actually happened in Troy from the beginning of the conflict to the end, Strauss weaves together archaeological data, historical information, and Homer's masterpieces to form his narrative of the Trojan War. In spite of what we know from the legend of more than 3,000 years ago as presented in Homer's *The Iliad*, he puts the Trojan War into the context of its time vividly reconstructing the conflict. He explains the strategies and tactics of both sides, the Trojans (vassals of the Hittite Empire to the east in modern-day Turkey) and the Greek warriors, and compares the war to contemporary battles elsewhere in the eastern Mediterranean. Strauss includes maps, photographs of the geography and artifacts of the era, 1180–1210 B.C.

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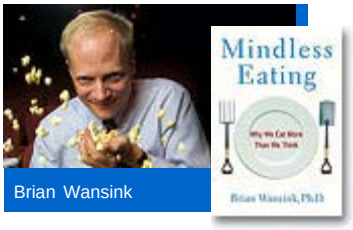
22. Brian Wansink, Applied Economics and Management



Mindless Eating: Why We Eat More than We Think (Bantam Books, 2006). Wansink, who has conducted more than 200 studies on the psychology of what and why people eat, explains how we overeat: not to satisfy hunger, but as a mindless response to cues and signals. Common reasons for overeating include large portions of food; oversized dishes, glasses, and bowls; all-night restaurants; tempting foods in full view; and eating on the run, at the desk, and while multitasking. The book, featuring drawings, charts, and boxes, offers tips on how to become aware of when and what one is eating, which should lead to weight loss without dieting. The book is written for a lay audience.

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01. The Green Technology of e2e

(l.) Anil Netravali, (r.) Patrick Govang

Amid concerns about growing landfills, global warming, and the political costs of oil dependence, visionary companies such as e2e offer manufacturers hope of a more sustainable future. e2e produces a new generation of fully bio-degradable “green” reinforced plastics, or composites, made from soy proteins and plant fibers, which do not depend on oil, are biodegradable, and will never languish in a landfill. The vision to found a company based on green technology originated with an invention by Anil N. Netravali, Fiber Science and Apparel Design. Patrick Govang at the Cornell Center for Materials Research recognized the invention’s potential and cultivated the idea into a business plan, earning e2e top honors at an annual regional business plan competition last September. Govang now runs the company, and Netravali serves as the chief scientific officer. Since its inception, e2e has earned over $260,000 in state grants to help commercialize the technology and is currently a finalist in the nationwide EssentialConnections.org $100,000 Emerging Business Competition.

Future plans for e2e include establishing core competencies in eco-friendly product and technology development, supply chain development and management, process development, and low volume–high margin manufacturing. There are many market opportunities and swelling public demand for biodegradable materials for furniture, building materials, and automotive applications. Ultimately, such materials may replace plastics, wood, and steel. e2e is now commercializing a formaldehyde-free, cost-competitive alternative to particleboard. The elimination of formaldehyde, a carcinogen, is driving a transformation of the $6.3 billion particleboard market.

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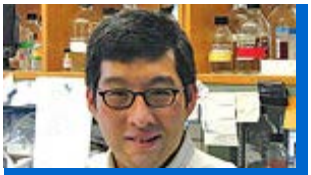
02. A Diagnostic Test for Effective Antidepressant Drugs



Francis Lee

When a drug is prescribed for a depressed or anxious person, it can take weeks to find out if the drug works. Most psychotropic drugs take weeks to take effect even when they do work. This long process can be agonizing for a patient already suffering from hopelessness and anxiety that accompany depression. Researchers at the Weill Cornell Medical College offer a glimmer of hope. Led by Francis S. Y. Lee, Psychiatry/ Pharmacology, the team made a breakthrough discovery that may lead to the first diagnostic test to guide the treatment of depression. The test would involve sampling the patient's DNA and looking for a variant of the gene coding a protein called Brain Derived Neurotrophic Factor (BDNF). If the patient's genes carry the variant, then it is unlikely that the patient would respond to the most commonly used class of antidepressant drugs, which include fluoxetine (Prozac™), citalopram (Celexa™), paroxetine (Paxil™), and sertraline (Zoloft™).

Early test results based on a transgenic mouse engineered by Cornell scientists indicate that mice with the normal BDNF gene responded the antidepressants. Mice with the variant gene were much less responsive to antidepressant drug treatment. These results are promising evidence that the presence of the genetic BDNF variant in animals may impact response to antidepressants. While a potentially significant breakthrough, current findings with mice cannot yet guide antidepressant treatment decisions. More research is needed before this test will be available for humans.

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03. Transferring Technology, Statistics FY 2006

Invention Disclosures

Disclosures Received	237

U.S. Patents

First-Time Applications Filed	111
Applications Pending	518
Patents Issued	57
Patents in Force	665

Foreign Patents

Applications Filed	91
Applications Pending	855
Patents Issued	124
Patents in Force	415

Licenses

Licenses and Options	
Equity Deals with Startups	6
Active Licenses	524
Number of Companies Started	4

License Revenue

License Fees	$1,444,700
Patent Reimbursements	$2,068,600

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Royalties	$4,275,800
Total License Revenue	$7,789,100

Source: Cornell Center for Technology, Enterprise, and Communications (CCTEC)

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01. Funding Cornell's Research, FY 2006

Cornell's Total Research Expenditures, FY 2006	$605,341
By Dollars Expended	Dollars in Thousands
Sources	
Total Federal Sources	**$409,850**
Sponsored	404,581
Budgeted	5,269
Total Non-Federal Sources	**195,491**
Sponsored Total	**84,867**
State & Local Governments	14,484
Corporations & Trade Associations	20,442
Foundations	14,925
Nonprofit Organizations	31,196
All Others	3,820
Budgeted Total	110,624
Cornell	77,117
New York State	33,507

Federal Agencies

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DHHS Department of Health & Human Services	211,770
NSF National Science Foundation	122,827
USDA Department of Agriculture	20,840
DOD Department of Defense	15,754
NASA* National Aeronautics & Space Administration	11,522
AID Agency for International Development	6,424
DOE Department of Energy	6,229
All Others	9,215

Source: Cornell University, Sponsored Program Services
Discrepancies may occur due to rounding.

* NASA includes JPL funds under subcontract.

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02. Expending Research Dollars, FY 2006

Total Research Expenditures, FY 2006	$605,341
	Dollars in Thousands
By Cornell Divisions	
Endowed Colleges	225,834
Contract Colleges	188,311
Medical College	191,196
By Disciplines	
Medical Sciences	$191,196
Physical Sciences	94,003
Biological/Life Sciences	77,632
Engineering	69,767
Agriculture	67,293
Veterinary Medicine	28,667
Social Sciences	25,340
Computer & Information Sciences	25,121
Environmental Sciences	5,459
Psychology	4,198
Mathematical Sciences	3,322
Arts, Humanities, & Cultural Studies	1,116

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Nondisciplinary Research Expenditures	
Graduate Student Tuition Support	10,949
Research Administration & Support	1,278

Source: Cornell University, Sponsored Program Services
Discrepancies may occur due to rounding. Disciplines are defined by the National Science Foundation.

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03. Ranking Cornell Nationally

By Research Expenditures, NSF FY 2005

	Dollars in Thousands
The Johns Hopkins University *	$1,443,792
University of Michigan	808,887
University of Wisconsin, Madison	798,099
University of California, Los Angeles	785,625
University of California, San Francisco	754,444
University of California, San Diego	721,035
Stanford University	714,897
University of Washington	707,519
University of Pennsylvania	654,982
Duke University	630,752
Pennsylvania State University	625,764
Ohio State University	608,923
Cornell University	**606,804**

Source: National Science Foundation

* The Johns Hopkins University includes the Applied Physics Laboratory, with $678 million in total R&D expenditures.

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04. Ranking Cornell in New York

By Research Expenditures, NSF FY 2005

	Dollars in Thousands
Cornell University	**$606,804**
Columbia University	535,424
University of Rochester	345,337
New York University	276,198
SUNY Buffalo	267,271
SUNY Albany	259,708
Mount Sinai School of Medicine	225,293
SUNY Stony Brook	212,289
Rockefeller University	198,719
Yeshiva University	195,644

Source: National Science Foundation

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01. Crossing Disciplines

Selected Research Centers at Cornell

Nanoscale Science and Technology

» Center for Nanoscale Systems
» Cornell Center for Materials Research
» Cornell NanoScale Science and Technology Facility *
» Nanobiotechnology Center

Medical Research

» Abby and Howard P. Milstein Chemistry Biology Center
» Ansary Center for Stem Cell Therapeutics
» Arthur and Rochelle Belfer Institute of Hematology and Medical Oncology
» Center for Aging Research and Clinical Care
» Center for Complementary and Integrative Medicine
» Center for the Study of Hepatitis C
» Center for Vascular Biology
» Cornell HIV Clinical Trials Unit
» David A. Cofrin Center for Bioinformation
» Hamad bin Khalifa Institute of Genetic Medicine
» Howard Gilman Institute for Valvular Heart Diseases
» Institute for Biomedical Imaging Science
» Institute for Reproductive Medicine
» Lehman Brothers Lung Cancer Research Center
» Prince Alwaleed Bin Talal Bin Abdulaziz Al-Saud Institute for Computational Biomedicine

Life Sciences

» Agricultural Experiment Stations (Geneva; Ithaca)
» Baker Institute for Animal Health
» Cancer Protein Expression Laboratory
» Center for the Environment
» Center for Life Science Enterprise
» Cornell International Institute for Food, Agriculture, and Development
» Institute for Biotechnology and Life Science Technologies
» Institute of Food Science
» Institute for Genomic Diversity

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» National Biomedical Center for Advanced ESR Technology
» Sprecher Institute for Comparative Cancer Research

Physical Sciences and Engineering
» Center for Applied Mathematics
» Center for Radiophysics and Space Research
» Cornell High Energy Synchrotron Source *
» Cornell Laboratory for Accelerator-based Sciences and Education
» Laboratory of Atomic and Solid State Physics
» Laboratory for Elementary-Particle Physics *
» National Astronomy and Ionosphere Center *

Social Sciences and Humanities
» Africana Studies and Research Center
» Bronfenbrenner Life Course Center
» Center for Analytic Economics
» Center for the Study of Economy and Society
» Center for the Study of Inequality
» Cornell Institute for Research on Children
» Cornell Institute for Social and Economic Research
» Cornell Language Acquisition Lab
» Employment and Disability Institute
» Institute for the Social Sciences
» Institute for Women and Work
» Mario Einaudi Center for International Studies
» Program on Ethics and Public Life
» Society for the Humanities

Business and Management
» Center for Advanced Human Resource Studies
» Center for Hospitality Research
» Parker Center for Investment Research
» Smithers Institute for Alcohol-Related Workplace Studies

* National Center

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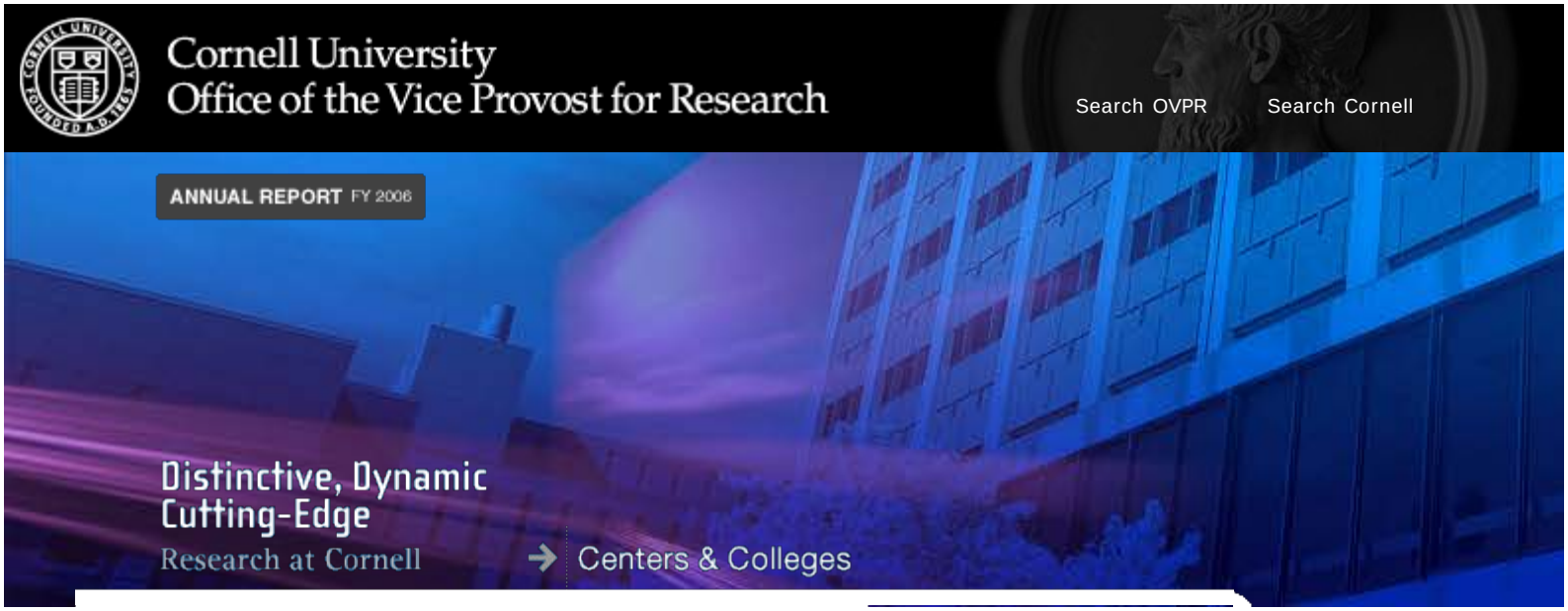

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02. Cornell's Colleges and Divisions

» College of Agriculture and Life Sciences †
» College of Architecture, Art, and Planning
» College of Arts and Sciences
» College of Engineering
» College of Human Ecology †
» College of Veterinary Medicine †
» Division of Nutritional Sciences
» Faculty of Computing and Information Science
» Graduate School
» Johnson Graduate School of Management
» Law School
» School of Continuing Education and Summer Sessions
» School of Hotel Administration
» School of Industrial and Labor Relations †
» Weill Cornell Graduate School of Medical Sciences (NYC)
» Weill Cornell Medical College (NYC)

† Contract College

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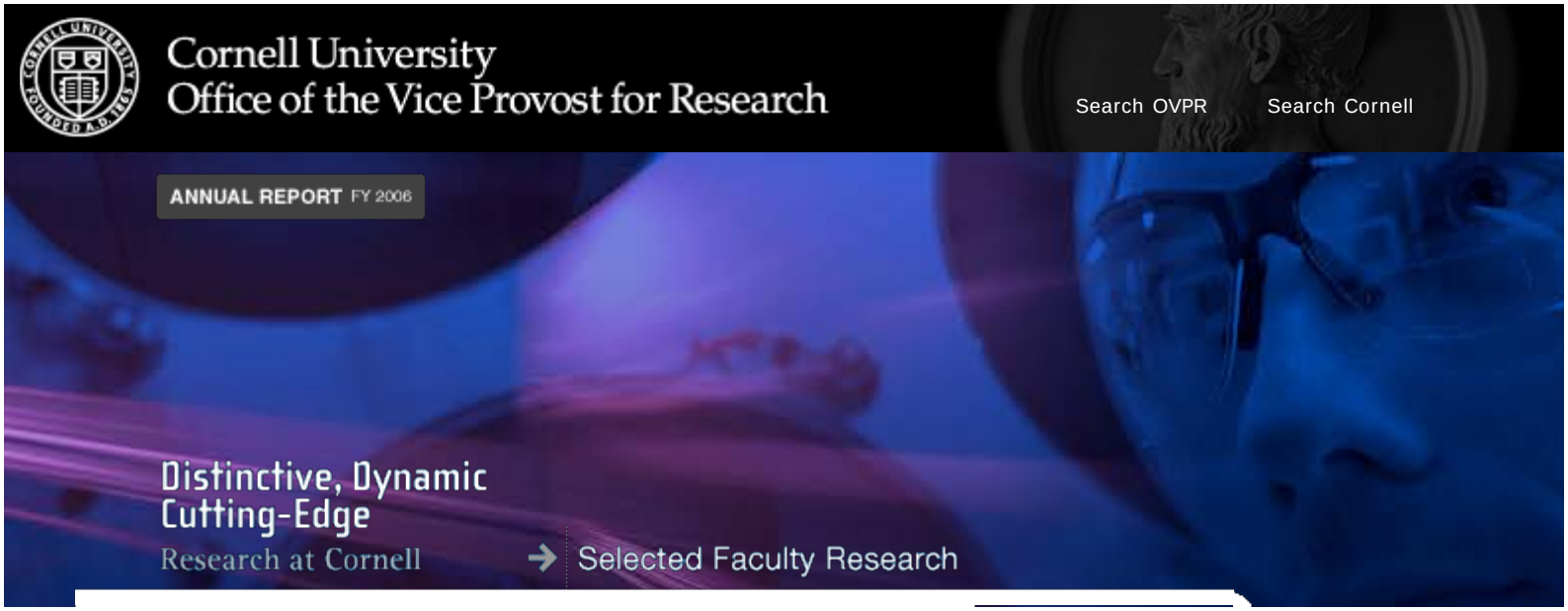

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12. The Split-Second Answer
Melissa J. Ferguson, Psychology

13. A Biodegradable Wipe
Margaret W. Frey, Fiber Science and Apparel Design

14. Strange Fruit
Salah M. Hassan, Africana Studies and Research Center, Brett de Bary, Asian Studies, and Cheryl Finley, History of Art

15. Smokers, Former Smokers, Women Smokers, and Lung Cancer
Claudia I. Henschke, Radiology, Weill Cornell Medical College

16. A Defendant's Blackness and a Death Sentence
Sheri Lynn Johnson, Law

17. Solar Flares
Paul M. Kintner Jr., Electrical and Computer Engineering

18. Hearts with a Glow
Michael I. Kotlikoff, Biomedical Sciences

19. Predicting Alzheimer's
Kelvin H. Lee, Chemical and Biomolecular Engineering, and Norman R. Relkin, Clinical Neurology and Neuroscience, Weill Cornell Medical College

20. Hydrogels from Synthetic DNA
Dan Luo, Biological and Environmental Engineering

21. It's Photovoltaic
George G. Malliaras, Materials Science and Engineering

22. One Hundred Years Sooner for This Volcano!
Sturt W. Manning, Classics

23. Two Clusters of Rubble Near Earth
Jean-Luc Margot, Astronomy

24. An Alzheimer's Preventive Enzyme
Linda K. Nicholson, Molecular Biology and Genetics

25. CHF Risk in Hypertensive Patients
Peter M. Okin, Medicine, Weill Cornell Medical College

26. Daughters as Caregivers
Karl A. Pillemer, Human Development

27. Top 2006 Science Story
Per Pinstrup-Andersen, Nutritional Sciences

28. Noiret™, Corot Noir™, and Valvin Muscat™
Bruce I. Reisch, Horticultural Sciences, Geneva Campus

29. **A Mutant Mouse and Breast Cancer**
John C. Schimenti, Biomedical Sciences

30. **A Device at the Cutting Edge**
Keith C. Schwab, Physics

31. **Swarm Smarts**
Thomas D. Seeley, Neurobiology and Behavior

32. **Seeing Atoms Individually**
John Silcox, Applied and Engineering Physics

33. **A "C" of Scholarship**
Buzz Spector, Art

34. **Clean Hotel Rooms**
Michael C. Sturman, Hotel Administration

35. **Tunes of the Loons**
Charles Walcott, Neurobiology and Behavior

36. **TV Viewing in Early Childhood**
Michael Waldman, Johnson Graduate School of Management, and Sean Nicholson, Policy Analysis and Management

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01. Gregory S. Alexander, Law
The Global Debate over Constitutional Property: Lessons for American Takings Jurisprudence (University of Chicago Press, 2006)

02. Robert Allan, Psychology in Psychiatry, Weill Cornell Medical College
Getting Control of Your Anger: A Clinically Proven, Three-Step Plan for Getting to the Root of Your Anger and Resolving It (McGraw-Hill, 2006)

03. N'Dri T. Assié-Lumumba, Africana Studies and Research Center
Higher Education in Africa: Crises, Reforms, and Transformation (Council for the Development of Social Science Research in Africa, 2006)

04. James F. Bell, Astronomy
Postcards from Mars (Dutton, 2006)

05. David L. Brown, ed., Development Sociology, (with William A. Kandel)
Population Change and Rural Society (Springer, 2006)

06. Stephen J. Ceci and Wendy M. Williams, eds., Human Development
Why Aren't More Women in Science? Top Researchers Debate the Evidence (American Psychological Association, 2007)

07. James E. Cutting, Psychology
Impressionism and Its Canon (University Press of America, 2006)

08. Peter R. Dear, History
The Intelligibility of Nature: How Science Makes Sense of the World (University of Chicago Press, 2006)

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09. Ronald G. Ehrenberg, ed., Industrial and Labor Relations
What's Happening to Public Higher Education? (Greenwood, 2006)

10. Andrew S. Galloway, English
The Penn Commentary on Piers Plowman, Volume I (University of Pennsylvania Press, 2006)

11. Valerie P. Hans, ed., Law
The Jury System: Contemporary Scholarship (Ashgate, 2006)

12. Robert L. Harris Jr., ed., Africana Studies and Research Center, (with Rosalyn Terborg-Penn)
Columbia Guide to African American History Since 1939 (Columbia University Press, 2006)

13. Michael G. Kammen, History
Visual Shock: A History of Art Controversies in American Culture (Knopf, 2006)

14. Ravi Kanbur, ed., Applied Economics and Management, (with David B. Grusky)
Poverty and Inequality (Stanford University Press, 2006)

15. Peter J. Katzenstein, ed., Government, (with Robert O. Keohane)
Anti-Americanisms in World Politics (Cornell University Press, 2006)

16. Stephen L. Morgan, Sociology, and Gary S. Fields, Industrial and Labor Relations, eds., (with David B. Grusky)
Mobility and Inequality (Stanford University Press, 2006)

17. Moshen Mostafavi, ed., Architecture
Structure as Space: Engineering and Architecture in the Works of Jürg Conzett and His Partners (Architectural Association, 2006)

18. Judith A. Peraino, Music
Listening to the Sirens: Musical Technologies of Queer Identity from Homer to Hedwig (University of California Press, 2006)

19. Annette Richards, ed., Music
C. P. E. Bach Studies (Cambridge University Press, 2006)

20. Annelise Riles, ed., Law / Anthropology
Documents: Artifacts of Modern Knowledge (University of Michigan Press, 2006)

21. Barry S. Strauss, History
The Trojan War: A New History (Simon and Schuster, 2006)

22. Brian Wansink, Applied Economics and

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Mindless Eating: Why We Eat More than We Think (Bantam Books, 2006)

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01. **The Green Technology of e2e**
Amid concerns about growing landfills, global warming, and the political costs of oil dependence, visionary companies such as e2e offer manufacturers hope of a more sustainable future.

02. **A Diagnostic Test for Effective Antidepressant Drugs**
When a drug is prescribed for a depressed or anxious person, it can take weeks to find out if the drug works.

03. **Transferring Technology, FY 2006**
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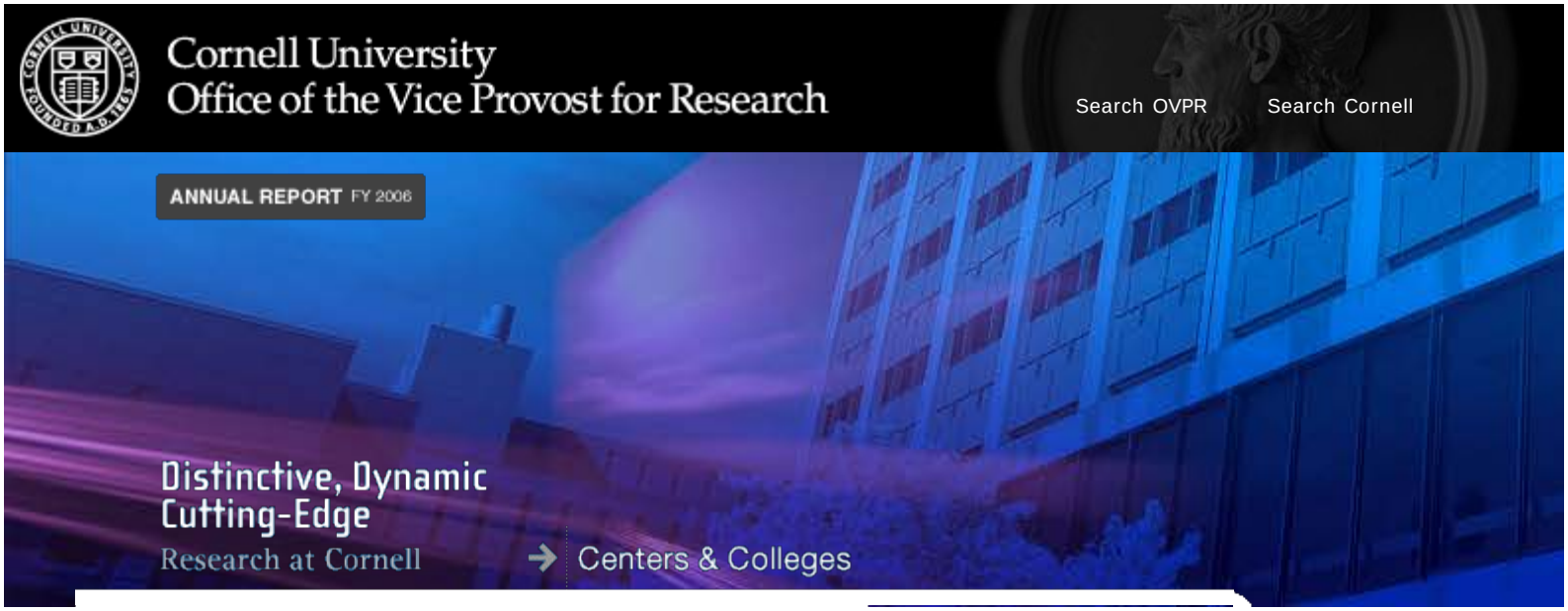

01. Crossing Disciplines
Selected Research Centers at Cornell

02. Cornell's Colleges & Divisions

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