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Neuroscientists to share expertise in summer course

Assistant Professor Robert Darnell has organized a contingent of Rockefeller faculty to teach a course in July at Cold Spring Harbor Laboratory (CSH) on "Molecular Cloning and Expression of Neural Genes."

"This course reflects the growing spirit of collaboration among neuroscientists, both on campus and in the New York region," said Darnell, who is codirecting the course with Professor Nat Heintz and the previous director, James Boulter of The Salk Institute. "As an introduction to advanced techniques in molecular neurobiology, the course may serve neuroscientists at all levels."

The course has three components. Daily laboratory exercises will cover gene cloning and in vitro and in vivo analyses of neural gene expression. Seminar discussions will address the practice of

See **Neuroscientists**, page 2

Courtesy of Cold Spring Harbor Laboratory



Eight members of the RU community will teach a three-week course at Cold Spring Harbor Laboratory in July.

2 Making dolls

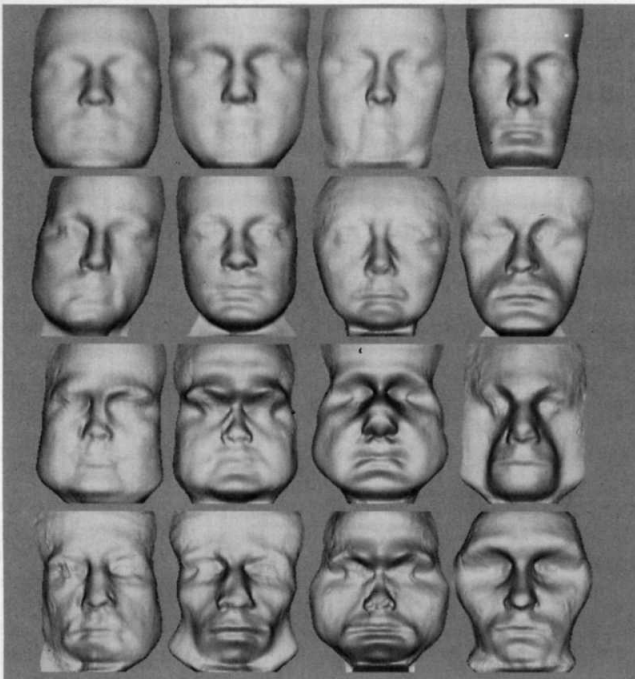
3 Screening blood

4 Handling divorce

At the Friday lecture

Atick discusses application of information theory to perception

Courtesy of Joseph Atick



Variations on a theme. These are the top 16 principal shapes for human heads. RU Assistant Professor Joseph Atick and co-workers created these eigenheads with linear equations called eigenfunctions and scans of human heads. The brain may combine a few dozen eigenheads to represent any one of the infinite variety of human faces. Atick will discuss this research at the Friday lecture today (Feb. 9).

Assistant Professor Joseph Atick, head of the Laboratory of Computational Neuroscience, discusses "The Ecological Theory of Vision: Understanding High-level Vision!" at the Friday lecture today (Feb. 9).

Atick studies the basic processes of sensory perception. Using a branch of mathematics called information theory, Atick focuses on how the brain identifies and gives meaning to an image by sifting through the information transmitted by the retina. He and his co-workers developed the ecological theory of vision, which states that the brain can only be understood in the context of the environment and that measurable physical properties of the environment dictate much of the detail of the neural processing.

"Joseph is making fundamental contributions to our understanding of visual processing in the brain," said Professor Mitchell Feigenbaum, who will introduce Atick today. "His work provides an interesting and novel approach to high-

level vision."

Atick and colleagues have begun exploring the theory's implications to high-level vision, object recognition, and perception. According to Atick, the brain has evolved a specialized "visual shape vocabulary" that is matched to properties of three-dimensional objects. For any class of objects, such as human heads, the vocabulary comprises a few dozen principal shapes, which can be combined in different ways to produce a seemingly infinite number of different shapes. He will discuss the implications of these principal shapes, called eigenheads, to the processing in the brain's inferior temporal cortex.

Atick received his doctoral degree from Stanford University in 1987. He went to the Institute for Advanced Study in Princeton in 1987 as a member and became principal investigator of the institute's Neural Cybernetics group in 1989. He joined the Rockefeller

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From Scotland to California, from chemistry to biology

New lab head crosses miles and scientific boundaries

Leaving the sunny warmth of southern California, new Assistant Professor Thomas Muir was welcomed by the bitter cold of a New York winter.

Muir, who spent the last three years at the Scripps Research Institute in La Jolla, moved here at the end of December. Reflecting on the change in climate and the blizzard of '96, Muir said, "In California, I missed the seasons, but this was the first time my girlfriend, Rosalind, ever saw snow."

Muir describes himself as a "chemist with the audacity to dabble with biology." He applies synthetic chemistry to the construction and study of proteins. One of his latest projects, recently submitted for publication, uses a novel technique called protein signature analysis to decipher how the primary sequence of a protein dictates its structure and biological function.

Temporarily housed on the first floor of Smith Hall, Muir hopes to move his lab—currently two post-docs and a technician—to the third floor of Flexner Hall by the end of February, along with the machinery that he uses in his

See **Muir**, page 4



New Assistant Professor Tom Muir is a bioorganic chemist who studies protein structure and function.

Portrait of a perennial research volunteer

by Kay Locitzer

For the past 10 years, about three times a year, Mark Heskin has volunteered to participate in a medical research study. "There aren't many jobs that have a lasting impact, that might make a difference in the long run, but this is one of them," he explained.

Now at the Rockefeller University Hospital for the fourth time, Heskin is a paid subject in Assistant Professor Steven Shiff's clinical research project studying the effects of fat and fiber on proliferation of the colon's epithelial cells. The protocol requires adhering to a monotonous diet, giving weekly samples of blood and stool, and enduring five biopsies of colon tissue, taken with a flexible tube placed inside the intestine.

Shiff commented, "It's not an easy regimen, but Mark is one of the best subjects one can have. He has the tenacity to persevere through the strict requirements of the study, and he's easygoing about it all."

During the month-long study, Heskin stays busy making dolls. Commissioned as gifts, the soft sculptures stand three feet high and caricature destined recipients. Heskin, who asks \$300 per doll, works from photographs as well as descriptions of people's interests. For a businessman who golfs, he might create a figure bedecked in a suit and tasseled loafers, toting a putter. A Florida snowbird might sport a neon bikini, a triple strand of pearls, and the kind of floppy sun hat one would buy solely in desperate last-minute fear of sunburn.

Heskin shapes the heads from

fiberfill stuffed into worn-out dancers' nylons. "When I began, I asked the Rockettes to save their used tights. They were happy to cooperate. Many other dancers on Broadway contributed. A lot of my materials are recycled. Clothes and props are from thrift stores and garage sales. I stuff bodies with newspaper. I'm taking garbage and making good gifts."

Heskin has been at this since 1982. At first, he displayed his dolls—then imitations of *The Wizard of Oz* characters—in an East Side laundry service window. One day, a woman asked him to design a semblance of her niece, and a business was born.

He persuaded several opticians to display their eyeglasses on his dolls' noses. "They'd get a free eye-catching window exhibit while I'd get a free showcase for my work. Business boomed." Eventually, *The New York Times* featured his work. "I've been riding on that since 1992." Heskin also appears as an extra on television shows and films.

"What's very nice about this particular study is that I can pursue my acting and exercising," Heskin said. "They'll pack a lunch for me if I need to be away for a full day of shooting."

Shiff said, "We try to make our subjects' stays here as comfortable as possible. And Hospital staff do everything they can to ensure that these volunteers will actually enjoy their time here."

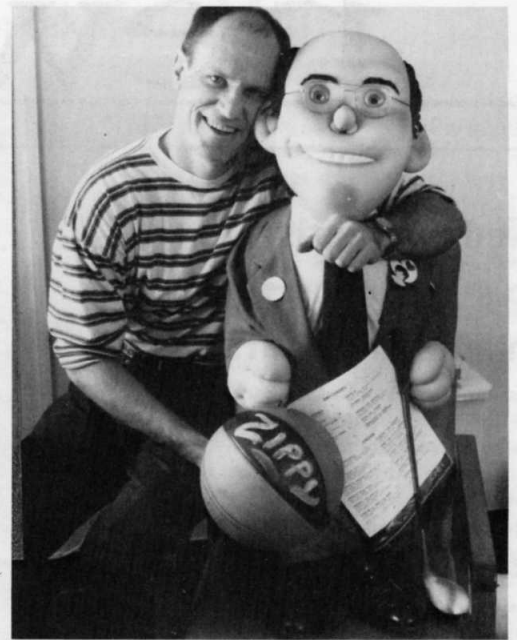
Heskin said, "This is quite a place. We have a good video library, great ceramics equipment, and we go on outings. It's like summer camp. But the research is important. And you do have to be

pretty tough and trusting to do it."

Trust comes somewhat naturally to Heskin, who grew up in a church-going family in North Dakota. Recently, Heskin bought a house in his hometown, Portland, population, 500. It is the only brick house in town, and he has crafted gingerbread trim for it and window boxes.

While he's renting it out now, he plans to move there someday.

But even if he gives up his credentials as a Manhattanite,



Mark Heskin makes dolls, portrays blue-collar workers in films and on tv, and regularly volunteers as a subject in clinical research projects.

Heskin would return to the Big Apple every now and then—as a subject in an experiment that furthers science.

Neuroscientists to teach on Long Island

(continued from page 1)

molecular biology generally, and, in the evenings, invited speakers will discuss ways in which molecular techniques contribute to the successful study of neural genes.

Last summer, Darnell lectured at the course. This year, he will serve as the main resource for students during their 12-hour daily lab sessions and will teach in the evening. In addition to Darnell and Heintz, participating members of the RU community are Assistant Professors Ulrike Gaul, Ali Hemmati-Brivanlou, and Peter Mombaerts,

Professor Fernando Nottebohm, and, as teaching assistants, post-docs James Okano and Don Arnold.

To enroll in the course, which runs from Mon., July 1 through Sun., July 21, contact CSH, (516) 367-8346, World Wide Web site <http://www.cshl.org/>, or e-mail meetings@cshl.org. Room and board are \$2,255, and scholarship funds are available for qualified applicants. CSH is located approximately two hours from Manhattan, on Long Island.

The cloning project achieves its wildest dreams

Leslie Atchison



"OK, people. Looks like we'll need double the funding next year."

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Blood center director chronicles, predicts cleansing of blood supply

John Adamson, president of the New York Blood Center, spoke on "Maintaining the Safety of the Blood Supply—The New York Blood Center in the Age of AIDS" at the Cohn Forum Tues., Jan. 30. News&Notes presents a synopsis of his talk.

When I was a house officer in the 1960s at the University of Washington, icteric hepatitis was common among posttransfusion surgical patients. In those days, perhaps one-quarter of all surgical patients suffered complications as a result of receiving blood transfusions.

This statistic improved with the introduction of testing for hepatitis B antibodies, but then not much changed until the appearance of AIDS. By 1981 and 1982, we were beginning to understand that blood and blood products contained a transmissible agent that led to this disease. This area is controversial, as you know. The issues were chronicled in *As the Band Played On*, by Randy Shilts.

In the early 1980s, blood centers took a variety of actions to reduce the risk of transmission of this agent. The New York Blood Center introduced confidential self-exclusion as we began to question donors about possible exposure to HIV. In 1985, the landmark introduction of the first test for HIV antibodies dramatically improved the safety of the blood supply. The next few years saw the introduction of additional tests, including hepatitis B core antigen, the HTLV test, and the first generation test for hepatitis C antibodies.

At each step, transfusion safety progressed. At the New York Blood Center, like every other U.S. center, we now screen donations for seven infectious diseases—for HIV-1 and -2, hepatitis B and C, HTLV-1 and -2, and syphilis. Taking donor histories has also been important to increasing safety.

Antibody tests reduce risk

So what is the current risk of infection? According to the Centers for Disease Control and Prevention, if you receive a red-cell or platelet transfusion, the likelihood of contracting HIV is now estimated to be 1 in approximately 500,000 units.

You may well ask why, if we have all these antibody tests, do we still have transfusion transmission of disease? The answer lies in the window of time between the infection and the appearance of detectable antibodies. Estimates of the 1985 window were about two months. By 1992, improved tests shrank that window to about 22 days. Today,

the 1 infected unit in 500,000 we speak of is carrying HIV that is undetectable by current tests.

In a position paper released at the September 1994 conference sponsored by the NIH and the FDA, FDA Commissioner David Kessler said, "We need to close the HIV window. The FDA is presiding over nothing less than a change in the culture of the nation's blood banking system."

FDA regulates amid confusion

The FDA now holds blood banks and blood centers to the same standards as pharmaceutical manufacturers. Regulation by the FDA affects what we do on a day-to-day basis as well as our planning.

But the FDA works in a crucible, bombarded by Congress, media, the public, patient advocate groups, and lobbyists. The agency receives scientific data from the NIH and CDC. It also has a blood-products advisory committee that is supposed to help with decision making, but the Institute of Medicine deemed the composition of the last committee too favorable to industry. It was disbanded last spring.

Many of these sources of input conflict, and hewing to a rational decision-making process is difficult for the FDA. Scientific data may suggest one course of action while patient advocacy groups support another. But in all of this—and I've heard this from members of the advisory committee—the specter of HIV or a similar disease that may one day appear drives decisions. However, some decisions bring marginal improvements in safety while carrying considerable costs.

Cold analysis, kindest results

A recent *NEJM* editorial suggested that if a cost-benefit analysis can lead to more effective use of economic resources, which can save more lives, it is perhaps immoral not to address the crucial tradeoffs between costs and statistical deaths.

And yet individual tragedies, such as the death of tennis star Arthur Ashe, who died of AIDS contracted through a transfusion he received before HIV antibody screening existed, transcend statistics. Statistics do not matter in

the human reaction to AIDS and the threat of AIDS. This is a cautionary example as we consider p24 antigen testing.

p24 antigen testing will reduce the window of detectability for HIV infection from 22 to 16 days. The technology is straightforward. The FDA has mandated its introduction and is working with manufacturers of test kits. The costs are known. The decision to implement is largely fact based.

What are the facts? Given the current level of infection of blood units, one researcher estimated that in the United States the test would



John Adamson told the Cohn Forum, "I believe that by the end of the millennium we will dispense blood and blood products that are entirely free of infectious disease."

annually prevent four to six HIV transmissions. People who receive transfusions have only a 50 percent chance of being alive 18 months later because most of them suffer serious underlying conditions. So the number of HIV transmissions does not equal the number of individuals who develop AIDS.

Taking into account the current level of risk of transfusion-transmitted disease, it has been argued that the \$60 million to \$80 million a year applied to p24 antigen testing would be better spent on research designed to inactivate infectious agents in the cellular components of blood or on caring for the few individuals who suffer transfusion-related illness.

Fortunately, technology exists to inactivate lipid-enveloped viruses such as HIV and hepatitis C in plasma and plasma derivatives. What is now needed are virus-inactivation technologies that can be applied to

the cellular components of blood.

A second controversial topic in the transfusion medicine community is Kreutzfeld-Jacob (K-J) disease, an untreatable and fatal malady that has been transmitted through dura matter, corneal implants, and human-derived pituitary growth hormone. It has never been reported to be transmitted through blood products.

Nevertheless, concern for blood safety has resulted in the quarantine of large batches of plasma or derivatives because a plasma donor—whose donation is put into a pool with thousands of other donations—has developed K-J disease. This triggers the so-called lookback process.

Patients who receive a plasma product from a pool containing, we subsequently learned, a contribution from a donor who developed Kreutzfeld-Jacob disease (and there may be hundreds of such patients) must be notified. But we don't know who the patients are, so we notify the hospital, and the hospital notifies the patients' physicians. Physicians then notify the patients and encourage counseling.

But we would not know how to counsel them. Has it been transmitted? Will it appear? Product removal would clearly be called for, but at present, there is no evidence for transfusion transmission of this disease. The CDC has begun a study that may provide an answer.

In the meantime, in response to the uncertainty, the FDA's blood products advisory committee decided last spring to recall cellular but not plasma products that come from a donor with K-J disease. This is not a fact-based decision. It is the kind of uneasy recommendation resulting from deeply split votes that creates havoc in the public's view and among patient advocate groups.

Kill viruses, kill danger

Technology to inactivate viruses and other life forms that can contaminate the cellular products of blood is well under way. These generally involve photoactivatable dyes and exposure to light at selected wavelengths. So far, the technology does not seem to compromise the function of red cells or platelets. Within the next two years, I believe, early clinical trials will test virus-inactivated cells produced this way.

Through the application of science and technology, it is entirely possible, I believe, that by the end of the millennium we will dispense blood and blood products that are entirely free of infectious disease.

Support group to address difficulties of marital breakup

An eight-session support group will offer 12 recently separated or divorced people a forum for "safe discussion of all the difficulties of marital separation, everything from loneliness to guilt and relief," said Lori Urov, a certified social worker on staff at the Employee Assistance Program Consortium (EAPC). The free support group begins Mon., Mar. 4 and will meet at the same time for eight consecutive weeks.

"Many individuals come in to the EAPC to discuss marital problems, and there is a marked increase nationwide in separation and divorce," said Sonia Austrian, EAPC director and adjunct professor at the Columbia University School of Social Work. "The EAPC exists because, while we all try to leave our personal lives at home, some life issues, like divorce, influence how we feel all day long. We work better when we feel better."

Established more than 10 years ago by Robert Millman, now Saul Steinberg Distinguished Professor

of Psychiatry and Public Health at Cornell University Medical College (CUMC), the EAPC is a counseling service for the employees, and dependents of employees, of CUMC, the Hospital for Special Surgery, Memorial Sloan-Kettering Cancer Center, and RU. The EAPC treats some 500 people a year individually as well as offering groups and workshops on such topics as stress, parenting, and eldercare.

"Support groups differ from group therapy," said Urov, who will co-lead the sessions with Columbia social-work intern Martha Lee Joseph. "We do not push people to talk about their difficulties. The idea is to identify common concerns and have the group assist each other with ideas and advice on coping."

"We set certain ground rules to create a safe place for sharing feelings and problems," added Joseph. "Before the group begins, we talk to those who are interested to make sure they are all in roughly



Lori Urov will co-lead an EAPC support group on divorce.

the same stage of coping with the breakup of their marriage."

The group will meet from 11:45 A.M. to 12:45 P.M. at 411 East 69th Street, Room 229. Participants may bring lunch. Contact Urov or Joseph, 746-5890, to arrange a prescreening.

Muir

(continued from page 1)

research. "We use a variety of spectroscopies," said Muir. He and his colleagues are designing a custom-made protein synthesizer, which will soon be assembled. "The first protein synthesizer was built here," said Muir, recalling Professor Emeritus Bruce Merrifield's Nobel Prize-winning peptide synthesis procedure. "There's no finer place to do it."

Muir looks forward to working with other chemists and structural biologists at RU. While at Scripps, Muir worked with members of the Chait lab, and he is now pursuing a collaboration with the Cowburn lab.

Born in Scotland, Muir received his doctoral degree from the University of Edinburgh in 1992. He left for the States shortly thereafter, joining Scripps as a postdoctoral fellow. In 1994, he became a senior research associate, and in the spring of 1995, he accepted his Rockefeller appointment.

Muir has returned to Scotland only once, but the move to the East coast brings him closer to home, in sheer mileage at least. He said, "One of my friends told me I'm moving back to Scotland in increments."

In addition to Rockefeller's scientific and geographic lure, New York City itself attracted Muir. After living in California, "I decided it was time to get some urban reality." And his girlfriend is a graduate student at Columbia University, in psychology.

Atick

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faculty in 1991 as an assistant professor and head of lab.

Atick, who was a Seaver Institute fellow, is editor-in-chief of the journal *Network: Computation in Neural Systems*.

The lecture will be held at 3:45 P.M. in Caspary Auditorium and preceded by tea. All are welcome.



Joseph Atick gives today's Friday lecture (Feb. 9).

Potpourri

Christian Steiner



Carol Wincenc, flute (above), Steve Gosling, piano, and Eric Bartlett, cello, perform works by Bach and modern composers at the noon recital today (Feb. 9). The concert, to be held in Caspary Auditorium at noon, is free. All are welcome.

Friday film

Vive le tour! (France, 1962), directed by Louis Malle, will be shown today (Feb. 9) at 8:00 P.M. in Caspary. The short film, an intense study of the grueling Tour de France, precedes *Zazie*, also directed by Malle. This New Wave film follows a foul-mouthed 11-year-old girl on a visit to her drag-queen uncle in Paris. Admission is free.

Patient-oriented Research Seminars

Assistant Professor Robert Darnell discusses "Clinical Studies of the Paraneoplastic Neurologic Diseases" and Ronald Crystal, Bruce Webster Professor of Internal Medicine and chief of Division of Pulmonary and Critical Care Medicine at New York Hospital, discusses "In Vivo 'Pro-drug' Gene Therapy for Metastatic Colon Cancer" Wed., Feb. 14 at 9:30 A.M. in Nurses Residence 110B.

Clinical Research Seminar

Harold S. Ginsberg, senior scientist and Eugene Higgins Professor of Microbiology at the National Institute of Allergy and Infectious Diseases, discusses "A New Look at an Old Virus: Molecular Pathogenesis of Adenovirus Pneumonia" at the Clinical Research Seminar Wed., Feb. 14 at noon in Nurses Residence 110B.

Bake sale

A Valentine's Day bake sale, offering chocolate confections, gifts, and foods, will be held Wed., Feb. 14 from 8:30 A.M. to 3:30 P.M. in Weiss lobby. The sale benefits the Children's School and Infant-Toddler Center.

President's House exhibit

Nineteenth- and twentieth-century Chinese paintings from the Mirsky collection and early views of the Peking Medical College are on display in the President's house Wed., Feb. 14 from 12:30 P.M. to 1:30

P.M. Members of the university community who wish to visit the exhibit may leave a message for Cynthia Altman, x8162.

Valentine's Day raffle

The dining room in Abby Aldrich Rockefeller Hall will hold a Valentine's Day drawing for a box of chocolates Wed., Feb. 14 at 3:00 P.M. Raffle forms are available in the dining room and may be filled out until an hour before the drawing.

RU concert

Dmitri Ratser, piano, performs works by Liszt, Chopin, and Rachmaninov at the Rockefeller University Concert Wed., Feb. 14 at 8:00 P.M. in Caspary. For ticket availability and prices, contact Cathy Rogers, x8437. The concert program is on the World Wide Web at <http://www.rockefeller.edu/pubinfo/ratser.html>.

Choral Symphony Society

The Choral Symphony Society rehearses for Mozart's *Die Zauberflöte* and Handel's *Acis and Galatea* Tuesdays from 7:20 P.M. to 9:30 P.M. in the Caspary music room. To audition, contact David Labovitz at 864-7541.

Special evening concert

Paul Groves, tenor, and James Levine, piano, will perform Mon., Mar. 11 at 8:00 P.M. in Caspary. Ticket order forms may be requested by facsimile only from Cathy Rogers at 327-7876. Phone reservations are not accepted. The concert benefits the student ticket fund.