

# Intake

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The Newsletter of the Society for the Study of Ingestive Behavior  
[www.ssib.org](http://www.ssib.org)

## A Message from the President

As incoming President of SSIB, I would like to devote most of my first message to the membership to allocating thanks to several of the folks who have been doing a lot for you recently. In addition, I would like to describe my view of a few aspects of SSIB's operation, with the goal of stimulating discussion and feedback from the membership that may help me better serve the community this year.

The climax of the SSIB year is, of course, the Annual Meeting, and the 2003 Meeting in Groningen was certainly one of our best. In terms of registration it was our second largest, and was by far larger than any other meeting held outside the U.S. (or, to put the latter point in a way that perhaps better emphasizes our goal of being a **truly international society**, it was the meeting with the largest number of participants traveling from their home country). The folks who deserve the first mention of thanks for the success of the Meeting are the Local Organizing Committee in Groningen, led by Anton Scheurink and Jan Strubbe. They and their colleagues – from Professor Anton Steffens, whose retirement as Director of the Department more or less coincided with the Meeting, to the all the students and staff who helped out – combined creativity, energy, and attention to detail in attempting to anticipate our needs (from backpacks to bicycles) before the Meeting and to make us feel at home in every way during it. The obvious hospitality and sin-

cere warmth with which this was done created a memorable ambience.

Nothing ever works perfectly, however, and one shortcoming of the Groningen Meeting needs to be mentioned. That was the poster venue, which was hot, crowded, and rushed. I can personally take a large part of the blame for this, as I participated in the planning meeting last spring in Groningen where the venue and schedule were finalized.

We simply bet that the weather would not be so beautiful and underestimated the crowding problem by assuming that more people would visit the posters outside the lunch break. That we discussed the very issues that turned into a serious shortcoming is perhaps ironic, but not very helpful. More

generally, this seems to exemplify the kind of problem that is almost impossible to avoid when meetings are held in very different kinds of venues, each with what in retrospect turn out to have idiosyncrasies that present new or unexpected difficulties.

It goes without saying that the main purpose of the Annual Meeting is science, and this year the science was, I think, excellent. Especially impressive

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Nori Geary, SSIB President, 2003-04

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## SSIB New Investigators Rule!

Before you break out the mullet (for those not in the know, this is correctly pronounced moo-lay), or the SSIB charter, let me clarify my title. SSIB, as an international scientific society, is dedicated to attracting talented scientists to our field, and thus to the support of interested young and new investigators. This dedication is abundantly clear at the annual meeting, where special recognition is given to exemplary scientific work presented by New Investigators (NIs). The program, a dedicated symposium, and festivities at the banquet honor and welcome New Investigators. Thus SSIB NIs experience a warm reception that is sometimes elusive at larger scientific meetings, and a chance to converse with colleagues, New and Old. SSIB puts its money where its mouth is; Travel Awards to New Investigators are a long-

standing, and growing SSIB tradition. And the dues for students and post-docs are just \$10 a year - that's a great deal! If you are interested in ingestive behavior, SSIB is a great place to start.

*Continued on p. 8.*

**The climax of the SSIB year is, of course, the Annual Meeting, and the 2003 Meeting in Groningen was certainly one of our best.**

### ***President's Message*** (Con't. from p. 1)

were the large number of beautiful, multi-faceted experiments enthusiastically and professionally presented by younger members. Equally impressive was the breadth of the areas covered. These seem to me to be two sure signs of a prospering scientific field!

The scientific program included several innovations introduced over the past few years. Our abstracts were again published in *Appetite*, so are now an archival scientific resource. Furthermore, many of the symposium presentations from the 2002 meeting were assembled in a special issue of *Physiology and Behavior*, which was distributed to the members at the Groningen, and the same process is underway for next year. Again among the Symposium speakers were several non-members, whom we invited (and whose expenses we paid) with the goals of broadening our own perspectives and of attracting new members. We also made awards for scientific achievement in 2003 to a senior investigator, Stelios Nicolaidis, and to an early-career investigator, Linda Rina-man. A new initiative at this Meeting was a series of plenary lectures with financial sponsorship from Masterfoods. John de Castro deserves special thanks for putting this initiative together and working with the program Committee to select speakers. This lecture series seemed to be very well received, and as Masterfoods has offered to sponsor it again, it will be part of the 2004 meeting as well.

Clearly, SSIB's operation is not in stasis! I would like to turn to some consequences of these developments that deserve consideration. I will mention four aspects:

First, the combination of larger meetings plus more plenary sessions increasingly limits the time available for regular oral and poster contributions. There are many possible responses to this. I can think of no more important area for membership feedback than evaluation of the scientific format of the annual meetings.

Second, and closely linked to the first, is the issue of spending. Formerly, corporate donations were devoted entirely to New Investigator

Travel Awards (NITA). We continue to be very successful in attracting donors, and NITA are still the primary use of donations. But it is no longer a hard rule. As

described above, we now make several other kinds of scientific expenditures, such as paying the meeting expenses of non-member symposium speakers. At the same time, many corporations are interested in other forms of donation, such as sponsoring symposia. What kinds and how much of these various sorts of donation do we want? Again, this is an area whose importance is too great not to have the membership at large involved in guiding the Society's actions.

A third point relates to the scientific content of the meetings per se. There are two recurring issues: Should the Society somehow evaluate the quality of submissions in selecting the content of the Annual Meetings? And, should the Society consciously monitor the types of research presented at the meetings and attempt to increase the representation of some areas? In both cases, if something is to be done, what criteria should be used and what is it that should be done?

Fourth is the point that conducting the Society's business takes a lot more effort than in former years. As has always been the case, the members donate much of this effort. But many functions have increased markedly in scope. The work of

the Program Committee is perhaps the outstanding example. This committee has been chaired by Wolfgang Langhans for the past four years. In that time, he has played a major role in most of the innovations which I described above -- publication of the abstracts (a job that involves correcting the proofs!); selection, review, and

**Especially impressive were the large number of beautiful, multi-faceted experiments enthusiastically and professionally presented by younger members. Equally impressive was the breadth of the areas covered. These seem to me to be two sure signs of a prospering scientific field!**

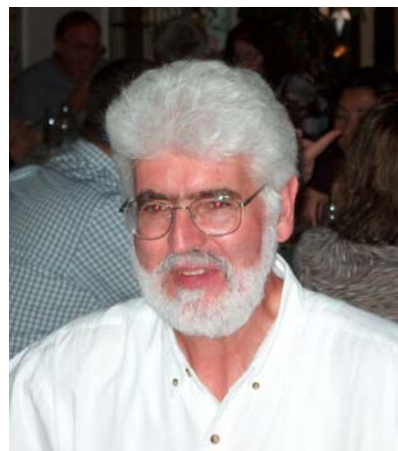
publication of some symposium presentations; instituting the new procedures for selection and reimbursement of symposium speakers; and adjusting the meeting format to include the new features of the program. Indeed, although similar changes have occurred in the Treasurer's job and other Society functions, I believe that Program Committee Chair has become one of the most crucial and probably the single most difficult and time consuming job in SSIB. In short, the Society asks increasingly more of its membership. We owe Wolfgang many thanks for doing this so well for several years. We should also be grateful that the job now falls into another set of capable hands, those of Hans-Rudi Berthoud.

Over and above the members' administrative contributions are the many administrative tasks that the

Society now contracts out to our Executive Coordinator, Marianne Van Wagner. This is our second largest single expense and, in my view, an excellent one. The services she provides, not to mention her experience and personal engagement, greatly facilitate almost every aspect of the Society's operations.

For example, a

novel initiative that she is now organizing is the operation of an Exhibitor's Booth at the Society for Neuroscience Meeting this November. We hope that this experiment will attract some new members to the organization. In the context of the present discussion, the issue is, should the Society further centralize and standardize



**Hans-Rudi Berthoud,**  
Program Chair, 2004

its operations, and if so which ones and at what expense?

In conclusion, I believe that ongoing improvements in SSIB's activities mark our continued evolution as a professional organization. My goal as President is to continue this momentum in several ways. One pressing organizational challenge is to further minimize the idiosyncratic nature of the Annual Meeting planning so as to insure that all members have the best possible venue to present their re-

search. A vital longer term scientific challenge is to identify areas of ingestive behavior research that are under-represented in SSIB and to develop initiatives to correct this. For example, over the last few years we have actively increased the strength of molecular genetic aspects of ingestive science within SSIB. I believe we should make similar efforts toward other lively ingestive research areas whose fuller inclusion in SSIB would bring mutual benefits. In my view,

such under-represented areas include ingestive aspects of obesity research and diabetology, human food choice, and alcohol and drug ingestion. I hope by means of this message initiate an open discussion of issues such as those I have described and thereby to us fulfill SSIB's vision to be **"the leading scientific organization for the study of ingestive behavior."**

Nori Geary

## INTRODUCING the TECHNIQUES CORNER

When Claire Cannon was appointed editor recently, we discussed ways in which we could make our newsletter more attractive and valuable. The Techniques Corner was one of them, and I am happy to introduce it to our readers. The goal is to present brief articles covering the basics and potential uses of new methodologies impacting our field. Here is the first of these on the emerging technology of noninvasive brain imaging by Dr. Antonio Tataranni, one of the leading researchers in this area. We would like to encourage our members to submit or solicit similar articles of potential interest to our readers from the many disciplines which contribute to our field.

*Joe Vasselli*

Obesity is a chronically relapsing disease caused in part by overeating, a behavior for which there is no unequivocal neurophysiological explanation. Complex hypothalamic neuropeptidergic pathways are known to control food intake in a homeostatic manner, with most of this knowledge derived from studies in experimental animals. Consistent with the principle that pathways regulating energy homeostasis are well conserved across species, some of the key peptides causing weight gain in animals have also been found to be responsible for rare forms of human obesity. However, recent experiments in humans indicate that several other regions of the brain, which may or may not have direct neuronal connections with the hypothalamus, participate in the conscious regulation of eating through perception of the reinforcing properties of food, as a stimulus for pleasure and/or reward. At this time we have very little knowledge of the neurophysiological abnormalities that may contribute to excess eating and weight gain in the majority of obese people.

Functional neuroimaging techniques, such as positron emission tomography (PET) and functional magnetic resonance imaging (fMRI), have recently emerged as non-invasive tools for discovering regions of the human brain involved in the regulation of eating behavior, as well as those involved in the pathophysiology of obesity (1).

PET is an imaging technique that depends on the use of a positron-emitting radiotracer (such as  $^{15}\text{O}$ ,  $^{11}\text{C}$ , and  $^{18}\text{F}$ ) which is typically generated using a cyclotron, has an unstable nucleus, and decays by emitting positrons that travel a short distance from the nucleus before colliding with an electron in the surrounding tissue. This results in an annihilation of the two particles and generation of two  $\gamma$ -rays at  $180^\circ$  from one another. The site of the annihilation is recorded as the site of the signal by one pair of the collinear detectors encircling the subject's head. In brain mapping studies, a change in local neural activity is inferred from measurement of regional cerebral blood flow (using the radiotracer  $^{15}\text{O}$ -water) or measurement of the cerebral metabolic rate for glucose (using the radioactive analogue of glucose  $^{18}\text{F}$ -fluorodeoxyglucose). fMRI also provides information about changes in local neural activity, but through a very different mechanism. fMRI measures changes in the blood oxygen level dependent (BOLD) signal, which reflects concentrations of deoxyhemoglobin, an intrinsic paramagnetic contrast agent. Increases in local neuronal activity are associated with a greater increase in regional CBF than is needed to supply cells with oxygen; for this reason, increases in local neuronal activity result in a lower concentration of deoxyhemoglobin, which can be detected using MRI.

Using these techniques, a limited number of studies have provided the first in vivo images of the human hypothalamic response to nutritional stimuli and revealed the complexity of the human brain's response to hunger, taste and satiation (1,2). More importantly, it has been demonstrated that in obese individuals the decrease in hypothalamic activity following a meal is significantly reduced compared to lean individuals (Fig.1). Whether this, in turn, explains associated differential responses in limbic/paralimbic areas and the

### NEUROIMAGING AND OBESITY

#### **P. Antonio Tataranni**

Obesity, Diabetes & Energy Metabolism Unit

**CDNS, NIDDK-NIH-DHHS**

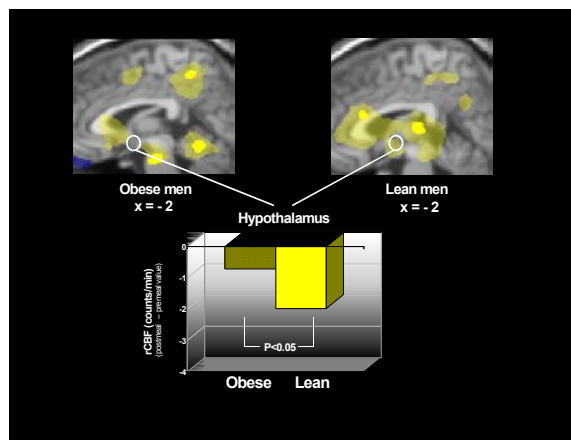
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prefrontal cortex remains to be further examined (1,3). These early attempts will likely be followed by more studies that should establish the pathophysiological relevance of these findings and possibly unravel the underlying neurochemical mechanisms.



**Figure.** Differential brain response to a meal in obese (n=11) vs. lean (n=11) men. *Upper panels:* sagittal sections passing through the hypothalamus 2 mm left to the midline. The color-coded areas (blue for increases, yellow for decreases in regional cerebral blood flow (rCBF), a marker of neural activity), are regions of the brain in which significant changes were detected by statistical parametric mapping. *Lower panel:* average data extracted from the hypothalamic area (white circles) indicate that the decrease in hypothalamic activity following a meal was significantly reduced in obese compared to lean individuals (adapted from Ref. 3)

### References

1. Tataranni PA, Del Parigi A. Functional Neuroimaging: a new generation of human brain studies in obesity research. *Obes Rev* (in press)
2. Tataranni PA, Gautier J-F, Chen K, Uecker A, Bandy D, Salbe AD, Pratley RE, Lawson M, Reiman EM, Ravussin E. Neuroanatomical correlates of

hunger and satiation in humans using positron emission tomography. *PNAS* 1999; 96:4569-74 Gautier JF, Chen K, Salbe AD, Bandy D, Pratley RE, Heiman M, Ravussin E., Reiman EM, Tataranni PA. Differential brain responses to satiation in obese and lean men. *Diabetes* 2000; 49:838-46



**Nutrition Manager:** This position serves as Pepsi-Cola's primary expert in nutrition with a special focus in the areas of fortification, functional ingredients, and obesity. Expertise in areas of nutrition and bone or dental health is also desirable. This individual would need to be comfortable in managing database systems, information/knowledge management and leading business processes regarding nutrition data, food labeling and claims substantiation as well as providing general regulatory compliance support to new product teams. For more information, please contact: Mary Beth Fritz, Group Manager, Scientific & Regulatory Affairs, 700 Anderson Hill Road, 3/1 Purchase NY 10577, Tel 914-253-3204, Fax 914-249-8023, e-mail: [marybeth.fritz@pepsi.com](mailto:marybeth.fritz@pepsi.com).

**Behavioral Neuroscientist/Psychobiologist:** The Department of Psychology at Florida Atlantic University invites applications for a tenure track position at the Assistant Professor level in Behavioral Neuroscience/Psychobiology beginning August 2004. A Ph.D. in Behavioral Neuroscience, Psychobiology or a related field is required and postdoctoral experience is strongly preferred. Although the area of expertise is open, the successful candidate will be expected to have a record of productive research and possess laboratory skills that span multiple levels of analysis. He or she will be expected to teach courses and contribute to program development in the undergraduate and graduate programs in Psychobiology and to establish an independent, externally funded research program. The Department of Psychology has excellent research facilities in its newly renovated building and provides generous start-up funding for new faculty. In addition, opportunities for collaborative ties with Neuroscience faculty in the Center for Complex Systems and Brain Sciences as well as the Departments of Biomedical Sciences and Biological Sciences are also available. Send CV, statement of research and teaching interests, reprints and three letters of recommendation to Chair, Behavioral Neuroscience Search Committee, Dept. of Psychology, Florida Atlantic University, 777 Glades Road, Boca Raton, FL 33431. Deadline for applications is December 31, 2003. FAU is an Equal Opportunity/ Equal Access Institution.

The "Second National Conference on Diabetes® in America" sponsored by the Rutgers University Department of Nutritional Sciences, Shape Up America! and the New Jersey Obesity Group, will take place November 21-22, 2003 at the Cook Campus Center of Rutgers University. This 1 ½ day conference will include more than 20 speakers and focuses on the connection between obesity and type 2 diabetes. Speakers will cover basic, clinical and public policy topics in both obesity and diabetes and will be useful to both researchers and health care professionals in clinical practice. The campus is located conveniently in New Brunswick, NJ, halfway between New York City and Philadelphia, and can be easily reached by train from Washington DC or Boston. The agenda is available on the website -- <http://nutrition.rutgers.edu> -- along with continuing education and registration information.



The **International Behavioral Neuroscience Society (IBNS)** will hold its annual meeting in Key West, Florida, June 16-20, 2004. The major goal of the meeting is to bring together scientists whose interests are in the broad area of understanding the neural control of behavior. We cordially invite members and nonmembers alike to attend our Annual Meeting. The program will include sessions of plenary lectures, paper presentations and posters, with only one session occurring at a time. Topics will focus on a number of themes including, but not limited to: Biology of Emotion; Learning, Memory, and Neuronal Plasticity; Sexual Behavior; Aggressive Behavior; **Ingestive Behavior**; Psychopharmacology & Drugs of Abuse; Behavioral Endocrinology; Behavioral Genetics; Stress Effects; and Psychoneuroimmunology. For additional information, please visit our website at <http://www.ibnshomepage.org>.

# 2004—Cincinnati, July 20-24 2005—Pittsburgh, July 12-16 2006—Calling all SSIBlings

## *SSIB 2004: Randall Sakai Reports...*

The progress of SSIB 2004 in Cincinnati is going well. We have secured the Marriot Kingsgate Hotel on the University of Cincinnati Medical School campus for our meeting venue. The hotel is approximately 3 years old and this past summer the Society for Behavioral Neuroendocrinology had its annual meeting at this site with well over 400 attendees. For more information about the hotel, please visit: <http://www.marriott.com/EPP/default.asp?MarshaCode=CVGKG>

Steve Woods and I are in the process of accruing outside funds to help offset some of the costs for the meeting. We are also looking forward to work with Hans Rudi Berthoud and the other members of the program committee. Steve and I have also looked into options for the final banquet; either a Riverboat cruise or at the Cincinnati Zoo. We would welcome suggestions from the SSIB membership. Any questions about the meeting may be directed to [steve.woods@uc.edu](mailto:steve.woods@uc.edu), [randall.sakai@uc.edu](mailto:randall.sakai@uc.edu) or [bedelj@ucmail.uc.edu](mailto:bedelj@ucmail.uc.edu).

### Program Committee

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 Diana Williams (NI) ( [dianalw@u.washington.edu](mailto:dianalw@u.washington.edu) )

### *From Hans-Rudi Berthoud and the Program Committee...*

The program committee plays an important role in shaping the annual SSIB meetings. It evaluates the candidates suggested for the new Masterfood plenary lectures. It selects and, if necessary, modifies symposia proposals. The program committee also organizes the submitted abstracts into coherent oral and poster sessions and helps planning the overall schedule of events at the annual meeting. The current roster of eight members is as follows: Lisa Eckel and Barry Levin are the newly appointed regular members of the committee (replacing Susan Johnson and Wolfgang Langhans), and Diana Williams is the newly appointed New Investigator representative (replacing Susan Aja).

As you can see the committee is well-balanced regarding type of research, gender, age, and geography, and should represent the interests of a large majority of SSIB members. Randall Sakai is also part of the local organizer team and will be particularly helpful in coordinating the wishes and concerns of the Program Committee and the local organizers.

My first act as newly appointed chair of the Program Committee was to evaluate the Groningen meeting, and you should all have received that report. It is fair to say that the Groningen meeting was considered excellent or good in most aspects, except for the poster sessions.

The larger committee also has already done some work, as it selected a short-list of candidates for the Masterfood lecture series. The candidates on top of the list are currently being invited by John DeCastro, our liaison with Masterfoods.

The committee's next task is the selection of symposia. Because the symposia are a major determining factor of the quality of our Annual Meeting, it is clear that we need your help again to create a list of attractive and timely topics (presented by excellent speakers) for top quality symposia next year in Cincinnati. A call for symposia proposals has been sent to all members a while ago, and the most important points to remember when submitting a proposal are as follows:

Successful topics should summarize recent advances or conflicting concepts in rapidly developing areas within our field. Several closely related talks, which together tell a story, usually make for a better symposium than a loosely related collection of single talks. Other potential criteria of a good symposium are that it should try to bridge the gap between basic science and application, and/or that it may not be limited to a single species. Unless some really new developments have occurred, topics that were covered last year are less desirable. Each symposium will consist of four talks and will provide ample time for discussion. If you have suggestions for timely topics and/ or are willing to organize a symposium, please let the Program Committee know and send me (1) The tentative title of the proposed symposium. (2) A brief description of the general scope and aim, and why it is timely. (3) The name of a chairperson (perhaps yourself) who has already agreed to be responsible for the event. (4) The names of 3 or 4 speakers who are willing and able to participate, and the tentative titles as well as short abstracts for each talk.

Please put this information in a WORD file and incorporate or attach it to an e-mail to [berthohr@pbrc.edu](mailto:berthohr@pbrc.edu), or any other committee member.

*Continued on p. 8.*



# The faces of SSIB



- Groningen

*The Ingest Staff greatly appreciates these photos contributed by SSIB members.*





***New Investigator Awards***  
*Listed alphabetically.*

Dr. Elsa Addressi, *CNR, ITALY*  
 Dr. Claire A. Cannon, *University of Washington, USA*  
 Ms. Samantha J. Caton, *University of Liverpool, ENGLAND*  
 Mr. Michael M. Chi, *Purdue University, USA*  
 Dr. Young K. Cho, *Penn State College of Medicine, USA*  
 Ms. Diane E. Day, *Georgia State University, USA*  
 Ms. Marleen HM de Groot, *Dalhousie University, CANADA*  
 Ms. Deann P. Dixon, *Florida State University, USA*  
 Ms. Alicia M. Doerflinger, *Purdue University, USA*  
 Dr. Deborah Drazen, *University of Cincinnati College of Medicine, USA*  
 Dr. Catherine A. Forestell, *Monell Chemical Senses Center, USA*  
 Ms. Elizabeth R. Garduno, *Columbia University, USA*  
 Dr. Suriyaphun S. Mungarndee, *The Pennsylvania State University, College of Medicine, USA*  
 Ms. Mary M. Nguyen, *University of Cincinnati, USA*  
 Ms. Caroline Patten, *University of Pennsylvania, USA*  
 Mr. James H. Peters, *Washington State University, USA*  
 Ms. Heidi Rivera, *Florida State University, USA*  
 Dr. Nicole M. Sanders, *VAMC, USA*  
 Mr. Derek J. Snyder, *Yale University School of Medicine, USA*  
 Dr. April Strader, *University of Cincinnati Medical School, USA*  
 Dr. Gregory M. Sutton, *Pennington Biomedical Research Center, USA*  
 Ms. Kellie Tamashiro, *University of Cincinnati, USA*  
 Ms. Andrea L. Tracy, *Purdue University, USA*  
 Ms. Sandrine Wetzler, *INRA, FRANCE*



**Stelios Nicolaïdis**, recipient of the SSIB's Distinguished Career Award, pictured with his wife, José. Stelios received his award during the SSIB Banquet in Groningen. Dr. Nicolaïdis was honored for his contributions to the study of feeding behavior, metabolism, thirst, and sodium appetite spanning almost 40 years. In addition to his direct, scientific efforts and all of his students, Dr. Nicolaïdis fostered our field through the conferences that he organized in Paris, on the slopes of the French Alps, and near the beaches of the Cote d'Azur, year after wonderful year. The award is sponsored by Johnson & Johnson Pharmaceutical Research & Development.

### ***Program Committee Report (Con't. from p. 5.)***

The Program Committee needs this information as soon as possible, but not later than January 5, 2004. Please note that the Program Committee will not deal with incomplete proposals, which do not provide all the requested information. Our overarching goal is to select a reasonable number of the most interesting symposia from your suggestions, consistent with what we think best serves the interests of our society.

This year, the time slot for each speaker will be 30 minutes in total. Thus, with three or four speakers we will have 90 and 120-minute symposia. One goal of the symposia is to attract outside people to our society. To this end, SSIB will again waive registration fees and reimburse travel expenses (Economy class fares based on Saturday night stay over and advanced booking) as well as expenses for on-site accommodation for invited symposium speakers who are not members of SSIB. Please make sure that these limitations are understood, if you invite non-members. We also trust that you understand that funding cannot be provided for Society members.

Our final task for this cycle will be the grouping of abstracts into oral and poster sessions and uniform editing for publication in *Physiology & Behavior*. As the deadline for the submission of abstracts is set for February 15, 2004, and the publisher needs the edited abstracts by early April, the program committee has only a few weeks to do this.

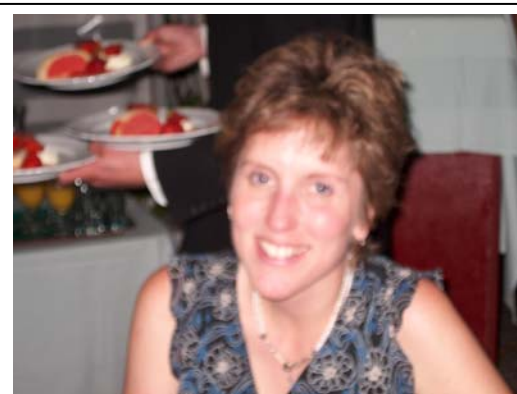
The Program Committee looks forward to receiving many interesting symposia proposals and lots of

excellent abstracts. After the poster-debacle in Groningen, we will bend over backwards to provide the best possible avenue for poster presentations. There will be finger foods and drinks near the posters, and enough time, space and light to view the posters optimally (what else is there to do in the evening in Cincinnati?). So, if your abstract is not scheduled for oral presentation, be happy, because you will likely be able to respond to many more than the two quick questions that have become standard for fifteen-minute orals. You will be able to go home and write that manuscript with the benefit of a thorough discussion at the poster board.

### ***A Look into the Future from the LRPC, Linda Rinaman...***

We all are looking forward to visiting Cincinnati in July 2004! The following year, we will move eastward along the Ohio River to convene in Pittsburgh, PA (July 12-16, 2005). Modern-day Pittsburgh is an exciting city that will offer SSIB members and their families great restaurants, jazz and dance clubs and other nightlife, world-class dinosaur, art, and science museums, roller coaster and water slide theme parks, top-rated golf courses, and many other cultural amenities. Check it out at <http://www.pitt.edu/pittsburgh>. The 2005 meeting will be held at the Sheraton Station Square hotel, located on the river directly across from downtown Pittsburgh.

Other future meeting sites under consideration include Florida, Sweden, Quebec, and the beautiful mountains of Colorado and Wyoming (near Laramie). How about YOUR home city? The principle mission of the SSIB Long-Range Planning Committee (LRPC) is to evaluate proposals and make recommendations to the Board regarding future annual meeting sites. If you'd like to propose a future meeting site, please contact the LRPC Chair (Linda Rinaman; [Rinaman@pitt.edu](mailto:Rinaman@pitt.edu)).



**Linda Rinaman**, LRPC Chairperson and recipient of the Alan N. Epstein Research Award. The Epstein award honors an individual for a specific research discovery that has advanced the understanding of ingestive behavior. Rinaman was honored for her developmental research, in particular the demonstrations that the transition from immature to mature ingestive responsiveness requires maturation of specific, chemically distinct neural connections among identified brainstem and forebrain subregions, as exemplified in her studies of the functional organization and postnatal development of ascending noradrenergic projections from the hindbrain dorsal vagal complex to the hypothalamus and of descending oxytocinergic projections from the hypothalamus to the dorsal vagal complex.



**Note from the Editor:** The sole purpose of this article is for amusement and a little stress relief during a time that many of us are struggling with grant deadlines...This imaginative and entertaining article is the official publication of October 31!

## Regulation of Blood Lust in Vampires

By Douglas A. Fitts

### Specific Aims

The main hypothesis of the proposal is that blood lust in vampires is organized by known homeostatic principles. The specific aims are to determine:

- The volume of distribution and disposition of ingested blood.
- The neural and phenomenological correlates of blood deprivation and satiation.
- The characteristics of the blood that maintain the behavior.
- The effects of blood deprivation and satiation on vampiric strength.
- The reward systems in the brain that maintain the behavior.

### Background and significance

Little is known of the physiology of vampirism, perhaps because of the stigma attached to this blood drinking disorder. Yet it claims uncounted lives annually. Vampirism was among the most underreported causes of morbidity and mortality in Europe and the United States from 1190-1996. Victims of vampirism have been confused with such disparate occurrences as anemia, snake bites, Gothism, and high school. It threatens the Public Health from a standpoint of blood-borne diseases, death, dismemberment, and dental health. It is crucial that we advance our knowledge of this terrible disorder before it spreads to Hollywood.

The literature concerning vampirism is rife with conflicting assertions and contradictions, and is based entirely on anecdotal evidence. Debates have raged whether vampirists are visible in mirrors, are allergic to garlic, or cringe in the presence of crucifixes, and these issues are beyond the scope of this review. The one constant feature in all accounts of vampirism is a lust for blood, and this indeed, along with immortality, appears to be a unique and defining feature of the disorder.

Case studies and other anecdotal reports suggest that vampires have an intense motivation for consuming blood products. However, the same accounts imply that the vampires may continue to exist in the complete absence of this nutrient for eons. Thus, it may represent one of the most intense forms of need-free ingestion ever documented. Although the ingested blood may not be essential for survival, there are indications, however, that the lack of blood may weaken -- and ingesting blood may strengthen -- the vampire. This is an important issue, because the strengthening may contribute to the reinforcement of the behavior.

Ingestion of blood by vampires may occur as often as several times a day, but no vampire has ever been documented to excrete anything, and the only suggested loss of body substance occurs during a ritual return of blood to an unfortunate novitiate to the disorder. This loss is always preceded by at least an equal ingestion of body fluid from the novitiate. This fact, and the fact that novices are inducted only rarely compared to the daily feeding on prey where no blood is returned, raises serious questions about the homeostasis of body mass. How is it that vampires can feed so extensively without excreting?

The main goal of this application is to determine the homeostatic organization of blood lust in vampires. Major questions to be considered are: (a) What is the volume of distribution of ingested blood and what is its fate or metabolism? (b) What are the neural and phenomenological correlates of blood deprivation and satiation? (c) What are the qualities of the blood that vampirists seek? (d) How does blood deprivation and satiation affect the strength of vampires? (e) Can the behavior be interrupted by interference with the dopaminergic or opioid reward systems?

### Preliminary Results

None. This is a high concept proposal.

### Experimental Design

**Participants.** Volunteers will be recruited from fliers posted in blood banks, singles bars, and the internet. Each subject will undergo a thorough screening to determine that he or she is indeed a vampire. This will consist of oral questioning, PCR, and, to be safe, testing with mirrors, garlic, and crucifixes. Control volunteers will be recruited and treated in the same manner, except that the word "vampire" in the advertisement will be substituted with the phrase "advertising copy writer". The vampire and control subjects will be matched on height, weight, apparent age, blood type, and criminal record. All personal data will be tabulated.

**Experiment 1.** Volume of distribution and disposition of ingested blood. Five vampires and 5 control subjects will be fed 1.0 L human blood spiked with erythrocytes tagged with radioactive Cr. The subjects will be placed into a metabolic chamber and an intravenous line will be established. Blood samples will be drawn at 10 min intervals for 6 h and counted in a scintillation counter to determine the appearance and disappearance of the ingested Cr in the circulation. Subjects will wear masks that allow collection of all expired air, and this will also be sampled and counted



**Drac Fittsula, Author**

for expired Cr. Urine and feces, if any, will be collected and analyzed. "Insensible" losses of Cr will be measured by collecting samples of all air and moisture circulated through the metabolic chamber. If they lose any Cr, we will find it.

Experiment 2. Neural and phenomenological correlates of blood deprivation and satiation. Both vampires and control subjects will be recruited for the paper-and-pencil part of the test, but, of necessity, only vampire will be used for the neural correlates part. Changes will be determined in repeated measures fashion, as described.

2.a. Phenomenology. All subjects will be asked to answer a raft of questions about their lust for blood before, during, and after a 3-week period of blood deprivation. Distractor questions will be included on the topics of Britney Spears, earthquakes, and muscular dystrophy. All subjects will be housed in seclusion during this period and will have ad lib access to water, the entire Burger King menu, and beer. No "rare or raw" meat order will be processed even if they want it their way.

2.b. Neurology. This study will be longitudinal, and accounts for the request for 100 years of funding. The prolonged sampling time will be more than compensated by the quality of data acquired using a within-sample technique. Six ad lib-fed vampires will be decapitated for measurement of c-Fos expression by in situ hybridization in 100 relevant brain regions (the long intersample time allows us plenty of time to analyze most of the brain). This will serve as a baseline measurement. The parts of the vampire will then be placed into a standard sarcophagus for 10 years to allow complete regeneration. The vampire will be allowed to feed on volunteers from a Psychology 101 class until he or she has attained an asymptotic level of vigor and satiation (we estimate 1 year to be conservative). All access to blood will then be removed for 3 weeks, and the vampires will again be decapitated for measurement of c-Fos expression in the same 100 brain regions. After a second regeneration, the vampires will be deprived of blood for 3 weeks, then allowed to refeed on Psychology 101 volunteers for 1 h before a third decapitation and analysis of c-Fos expression.

There is a small possibility that differences in c-Fos activation will occur between these repeated samples because of the repeated decapitation instead of the deprivation and refeeding. For this reason, another six vampires will serve as time controls. They will be allowed to feed on Psychology 101 volunteers ad libitum and will never experience the experimental deprivation of blood. However, they will undergo the decapitations on the same schedule.

Experiment 3. The characteristics of the blood that maintain the behavior. Just what is it that vampires seek in the blood of their victims? If the critical factor could be isolated, then alternative sources of this nutrient may be provided at low cost so that vampires would not have to resort to antisocial activities in order to obtain the substance they crave.

3.a. Vampire and control subjects will be deprived of blood for 3 weeks (as above) and then will be fed whole blood (group A), the cellular fraction (group B), or the plasma fraction (group C). They will then be asked to rate their satisfaction with the meal on a multidimensional scale.

3.b. Vampire and control subjects will be deprived of blood for 3 weeks and then will be given access to a variety of blood products including whole blood, blood cells, and blood plasma. We will record the latency to ingest each nutrient and also the volume of each consumed every 15 s for 1 h. Preference scores will be calculated as the percentage of a target nutrient to total intake.

3.c. Based on the findings of experiments 3 a and b, further experiments will be planned to distinguish among the components of the blood cells or plasma that was most favored by the vampires. For instance, vampires may be given a choice between red and white cells if the cellular fraction was deemed most attractive.

Experiment 4. The effects of blood deprivation and satiation on vampiric strength. The strength of vampires may vary with the time since the last meal. A battery of tests of physical strength will be administered to 10 vampires at 0, 3, 6, 9, 13, 26, 52, 104, 260, 520, 1300, and 2600 weeks after the last meal. The vampires will then be allowed to refeed ad libitum for 1 h on Psychology 101 volunteers, and the tests will be repeated. The tests will consist of (1) time to fly 1 km; (2) speed of transformation from human to bat form; (3) time to scale a standard 4-story Brownstone housing unit; (4) maximum weight that can be removed from the top of the sarcophagus; (5) latency to escape the light of the early morning sun. If the blood provides a rapid revitalization of the vampires, then it is probable that this effect contributes to a conditioned blood preference that helps to maintain the behavior.

Experiment 5. The reward systems in the brain that maintain the behavior. In an effort to determine whether the blood lust of vampires results from an activation of known reward circuits in the brain, and possibly to provide an avenue for future therapy of blood lust, groups of six vampires each will be fitted with chronic intracerebroventricular cannulas for delivery of receptor blocking agents. All vampires will be deprived of blood for 3 weeks, after which they will be administered a blocking agent icv. A control group will receive only a 0.2 ml injection of plasma vehicle. The vampires will then be allowed to feed ad libitum and blood intake will be measured by weighing the Psychology 101 volunteers before and after the meal. The agents to be administered, one blocker per group, will consist of specific antagonists of 15 opioid and 21 dopaminergic receptor subtypes.

Potential pitfalls. We acknowledge that recruiting a sufficient number of genuine vampires may pose problems. Trouble recruiting subjects would especially affect experiment 5. If we are unable to recruit the 222 vampires for that study, we will use a smaller N and test the effects of the blockers in a within subjects design after repeated deprivations. This is less desirable because it may introduce confounds owing to the order of administration of the various agents and because it will require 148 weeks to complete assuming a 1-week repletion between tests.

Timetable. A potential drawback of the present studies is the publication lag. How can we justify spending so much money when the experiments will not be complete until our grandchildren's time? However, we fully expect that the next 100 years will see the development of the technology for time travel. We will take advantage of this technology to return in time and to schedule the publication of our results for 1 week after the funds are awarded.

Vertebrate Animals and Human Subjects. No. Although the vampires are known to take form as bats, wolves and humans, it is also well known that they are dead. Thus, this puts them in the same category as in vitro experiments with cell cultures, animal tissues, and human cadavers. Nevertheless, we will obtain the permission of any vampire who decides to volunteer for the study. Equal numbers of males and females will be recruited if possible. They will be thoroughly debriefed at the end of the experiment, and no deception will be involved.

Environmental Health and Safety. One obvious potential hazard is the risk of communicating viruses through the blood products and feeding studies. All participants will be screened for HIV and hepatitis virus before and at regular intervals during the experiment. All experimenters, psychology students, and vampires will participate in the University's serum banking program. Fang pricks will be treated the same as any needle stick in a typical biohazard unit.



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### 2003-2004

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## The Columbia University Seminar on Appetitive Behavior

Scheduled Speakers for the Academic Year 2002-2003

All meetings are on Thursday evenings at 7:30 PM in the Faculty House  
(Revised August 30, 2002)

September 11, 2003

Stephan Rossner, Huddinge University Hospital, Stockholm, Sweden.  
"Eating Behaviours in Normal Weight and Obese Subjects."

October 9, 2003

A. J. Stunkard, University of Pennsylvania.  
"The Night Eating Syndrome."

November 6, 2003

Linda Bartohsuk honorary symposium "Taste, Food Intake and Obesity."  
Speakers are:

G.P. Smith, Bourne Laboratory. "Sweet Taste and the Motivation to Eat."  
Anthony Sclafani, Brooklyn College. "The Sixth Taste"  
Valery Duffy, Univ. of Connecticut. "Associations Between Oral  
Sensation, Dietary Behaviors and Health Outcomes."

December 11, 2003

Herbert L. Meiselman, U.S. Army Natick Labs.  
"Contextual Factors in Eating-Where You Eat is Important (Subtopic-You  
Can't Study Eating in the Laboratory)."

January 22, 2004

Hans-Rudolf Bertoud. (Tentative)

February 19, 2004

Emanuel Pothos. (Tentative)

March 11, 2004

Andras Hajnal, Penn State University, Hershey.  
"Do Sweet Meals Alter the Mesoaccumbens Dopamine System?"

April 15, 2004

Special symposium in conjunction with NY Obesity Research Center,  
to be announced.

May 13, 2004

Katarina T. Borer, Ph.D. University of Michigan.  
"Is There Exercise-Induced Appetite Suppression?"

June 10, 2004

Michael Lowe, Drexel University.  
"Binge Eating in Bulimia Nervosa: The Role of Current Dietary Restraint  
Versus Past Weight Suppression."

**Sponsored in part by the New York Obesity Research Center  
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**Harry R. Kissileff, Ph.D., Chair  
Dr. Kathleen Keller, Rapporteur  
Contact: [APSEM@columbia.edu](mailto:APSEM@columbia.edu)**

## IMPORTANT DATES

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**Abstracts due  
February 15, 2004**

**NI Travel Award  
Applications due  
February 15, 2004**

**Notification of  
Travel Awards  
March 15, 2004**

**Call for Nominations  
Annual Election  
of Officers  
April 30, 2004**

**Early Registration  
deadline  
May 3, 2004**

**Meeting dates  
July 20-24, 2004**