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Bioanalytical Systems, Inc., 2701 Kent Avenue, West Lafayette, Indiana 47906 USA

There is No Room for Humor in Science!

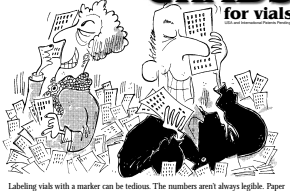
Candice Kissinger keeps bees. Peter Kissinger keeps Candice. Rod Yoder goes fishing a lot and even has his own online bait shop. (tackle.redshad.com)

A history of the use of puns, cartoons and absurd product names from the regulatory archives of Bioanalytical Systems, Inc.

F1.

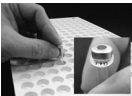
They're BACK...
but with no recounts!

CHADS
for vials



Labeling vials with a marker can be tedious. The numbers aren't always legible. Paper labels may fall off during thawing or prevent vials from fitting into a holder. Labels printed on an inkjet printer can smudge.

Chads are pre-numbered tags which use no adhesives. Just punch a vial into a hole. When you pull it out again, it is labeled. Simple. Takes about 30 microseconds. No dummies. No unwanted pregnancies. Makes no difference if the vial is capped, stoppered, opened or closed. Label a whole rack of 102 vials in one motion (enough for two 96-well plates). The Chad rides along with the vial into freezers, autosamplers, fraction collectors, centrifuges and other popular vial destinations in Florida, and beyond.

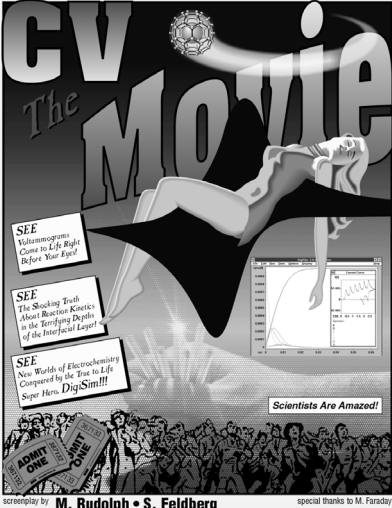


Learn more and request a sample from our website.

BAS www.culex.net
Bioanalytical Systems, Inc. • West Lafayette, Indiana • (800) 845-4248

F2.

CV
The
MOVIE



SEE
Volcanograms
Come to Life Right
Before Your Eyes!

SEE
The Shocking Truth
About Reaction Kinetics
in the Verifying Details
of the Interfacial Layer!

SEE
New World of Electrochemistry
Conveyed by the True to Life
Super Hero, Dig-Sm!!!

ADMIT ONE

ADMIT ONE

ADMIT ONE

Scientists Are Amazed!

screenplay by **M. Rudolph • S. Feldberg** special thanks to M. Faraday
based on a novel by Robinson and Brown

BAS

Our response to the opinion expressed in the title is “Nuts!” (1) From our immaculate conception (or more delicately, inception) as a company, Bioanalytical Systems has followed the notion that life is too short not to have fun at work. Our original abbreviated name was BS, Inc. and our founders got a good laugh out of that one Friday night in Lansing, Michigan in 1974. This was before starting a company was a requirement for tenure in an American university.

It was a time of great cynicism about authority, inculcated by Watergate and the war in Vietnam, and then fueled by hairstyles imported from London, which were not too dissimilar from those popular in the Thirteen Original Colonies. History, indeed, repeats itself.

Our company began with an emphasis on neuroscience. It is very difficult not to get depressed about this field if you don’t approach it with some humor. One of us (PTK) once lectured at a psychiatric hospital in Berlin. A patient had heard about my long-standing interest in Michael Faraday and his pioneering work in electrochemistry. This patient was clearly very ill, but by no means uneducated. He shouted to others on the ward that, “Michael Faraday is here today and I’m Sir Humphrey Davy.” I had no background on this German fellow who knew some things about English, electrochemistry and the

history of science, but I was moved in several ways. It was funny, there were many laughs and yet, this man could not function at all outside of a hospital psychiatric ward. In the intervening 20 years, we and our clients have done so much to help people like that fellow. Although the work is serious, it can be fun as well. It has long been clear that humor is a helpful palliative for hard work of all kinds. Likewise, politics (related to neuroscience) also benefits from this concept, as evidenced by at least 300 years of political cartoons.

While these truths seem very clear to us, we have experienced the wrath of a vocal minority who claim there is no room for either humor or politics in science. Those folks contend that science should deal only with the facts and that matters which might offend some sensibilities have no place. British colleagues have been especially keen to take offense at advertisements for scientific instruments that are anything other than dry lists of specifications. We agree there are dangers in humor. Misinterpretation and taking offense are risks that many large companies prefer to avoid. At BAS we have been willing to take these risks and have used the process to get attention because that is the hardest thing for any small organization to accomplish. We’ve tried to do this with puns, cartoons and unique names for our products. We feel that instruments with names like Petite

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Ampère (after the physicist Jean Marie Ampère) or Culex (after the blood-sucking mosquito, *Culex Pipiens*) or Chads (after the Gore v. Bush debacle in Florida) are more endearing and memorable than something like the BAS LC-17A. See **F1** for a recent advertisement promoting Chads for Vials, a product which flaunts taboos on humor in both politics and science.

Let us now take you on a retrospective tour of devices we have used to help our customers remember we exist and get a chuckle at the same time.

The Forbidden Voltammogram

One of our most popular, and most reviled, efforts is shown in **F2**. This was an advertisement for software that facilitated simulation of voltammetry experiments. We thought this a perfect opportunity to spoof a movie poster typical of the science fiction fare of the 1950s. In the original *Forbidden Planet* movie poster, Robbie the Robot held the supine female. (2) The layout first appeared on the cover of *Current Separations* (Vol. 13, No. 2, 1994) and was later used in posters. The software authors are credited as the screenwriters in the poster, as both an inside joke and acknowledgment of their contribution.

We received many requests for copies, and several well-known faculty used it as a slide to introduce cyclic voltammetry simulations. To some, this represented a fun, sexy image for electrochemistry, a subject not typically described in those terms. Others (mostly men!) objected on the basis that it was somehow demeaning to women. We tested the art on a number of local women prior to publication and they all got the point, enjoyed the spoof or could even imagine themselves draped across a cyclic voltammogram.

The oddest complaint in this case was from a man. He called to tell us how much we offended women and demanded to have his call transferred to


senior management. When he was transferred to a Vice President of our company, a woman, he told her, "I don't want to talk to a secretary; I want to talk to someone in authority." Here was someone without a genuine appreciation for the role of educated women in science and commerce who was self-appointed to take offense on their behalf.

We also borrowed from *Fantastic Voyage*, a movie whose theme was to "journey into the body of a living man" to promote the concept of in vivo microdialysis. (3) In our version, **F3**, the space ship was transiting a blood vessel as we described the way that microdialysis probes eavesdrop on chemical conversations in interstitial fluids. However, we did resist replicating Raquel Welch coated in monoclonal antibodies.

Then there was the pH Boy ad, **F4**, in which we emphasized that "all you need is a drop" to measure pH. We featured the famous Mannikin Pis fountain near the Grande Place in Brussels. Urination was also involved in the product name for an accessory used in our Culex Automated Blood Sampler. A refrigerated container which holds a scintillation vial used to collect rat urine is named the *i-cup* (spell out the letters...).

One of our ads, "9 out of 10 rats prefer the Culex..." (**F5**) was actually banned from a journal. The ad provided excerpts from interviews with nine rats (named Binky, Biff, Fluffy, etc.) who commented on the change in their daily routine now that they were connected to an automated blood sampler. It was submitted and accepted as usual, but while reading the galley of the issue, the editor took offense and demanded that the ad be withdrawn. We appealed, and so the ad was sent to other members of the editorial board who complained that it portrayed a "negative image of laboratory animal personnel who ate garlic or were unhappy to return to a laboratory in the evening," and that it

F3.



BAS Microdialysis System

The outer limit of inner space analysis.

No matter what biological world you're exploring, the BAS Microdialysis System is the quick, clean and most accurate way to capture live animal data in real time. You get more chemical data, faster, because you can take a new sample every 5 minutes (and still maintain fluid balance). The sample is clean, because the molecular weight cutoff in the dialysis membrane leaves behind proteins that confound analysis. Accuracy is improved by eliminating multiple extractions of blood or tissue and exchanging enzymes which degrade the sample. You can inject the sample directly into an LC or MS system. The BAS system can run continuously in an awake, mobile animal, providing a more complete chemical profile. Use the probe to introduce a drug, toxin or inhibitor.

Place probes throughout the body (brain, heart, muscle, fat, skin, etc.) and see pharmacokinetic changes as they happen. Many compounds can be determined down to picomolar levels via BAS High Sensitivity LC-MS.

Reflexion of small molecules across a membrane is continuous and occurs without loss of fluid from either probe or surrounding tissue. Drug (x) is delivered, while analyte (y) is removed continuously.

Chart your course to a new dimension in bioanalytical sampling.

BAS 2701 Kent Avenue, Westborough, MA 01581
 Biobiosystems, Inc. PH (508) 452-7777 FAX (508) 452-7778

F4.



Boy pH Boy

All you need is a drop!

You don't need a beaker (or even a pool) full of sample to measure pH anymore! With the new pH Boy Model P2, just one small drop of liquid will do the job. Monitor the pH of microdialysis samples, chromatography fractions and other small-volume samples. Use the pH Boy in a conventional manner by dipping it into a container, or a tube. This solid-state device uses new ISFET (ion-sensitive field effect transistor) technology eliminating the need for fragile and bulky glass electrodes. Remove the cap, add a drop to the sensor well, and you can measure pH from 2.0 to 12.0 ± 0.1 pH unit. It has an operating temperature range of 5-40 °C so you can make measurements in the lab or in the field. The sensor is stored dry, unlike glass pH electrodes.

Tuck the compact pH Boy into your pocket and go! At 14 cm long, it's no bigger than a pen. A tiny photo sensor automatically turns the pH Boy on when the cap is removed and off when it is replaced. Batteries last for 200 hours with continuous operation. An LED warning light flashes when it's time to replace the pair of standard lithium batteries.

The Model P2 comes in a rugged carrying case with two bottles of calibration standards. Use a one or two-step calibration whenever batteries are changed, or if the pH Boy hasn't been used recently. Convenient calibration buttons and the

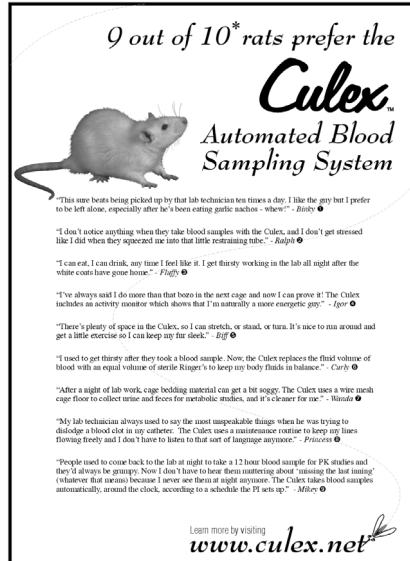
BAS Biobiosystems, Inc. 2701 Kent Ave. W. Westborough, MA 01581 PH (508) 452-7777 FAX (508) 452-7778
 BAS Europe, Dillingstraße, 9-11 D-2600 Medingen-Burgum PH (31) 43 22 21 FAX (31) 43 22 20

F5.

9 out of 10* rats prefer the

Culex.

Automated Blood Sampling System



"This sure beats being picked up by that lab technician ten times a day. I like the guy but I prefer to be left alone, especially after he's been eating garlic nachos - 'where?' - *Binky* ☺

"I don't notice anything when they take blood samples with the Culex, and I don't get stressed like I did when they squeezed me into that little restraining tube." - *Ralph* ☺

"I can eat, I can drink, any time I feel like it. I get thirsty working in the lab all night after the white coats have gone home." - *Fluffy* ☺

"I've always said I do more than that hero in the next cage and now I can prove it! The Culex includes an activity monitor which shows that I'm naturally a more energetic guy!" - *Agor* ☺

"There's plenty of space in the Culex, so I can stretch, or stand, or turn. It's nice to mix around and get a little exercise to I can keep up for sleep." - *Riff* ☺

"I used to get thirsty after they took a blood sample. Now, the Culex replaces the third volume of blood with an equal volume of sterile Ringer's to keep my body fluids in balance." - *Carl* ☺

"After a night of lab work, cage bedding material can get a bit soggy. The Culex uses a wire mesh cage floor to collect urine and feces for metabolic studies, and it's cleaner for me." - *Nitido* ☺

"My lab technician always used to say the most unappealing things when he was trying to dialyze a blood clot in my culture. The Culex uses a maintenance routine to keep my lines flowing freely and I don't have to listen to that sort of language anymore!" - *Proctor* ☺

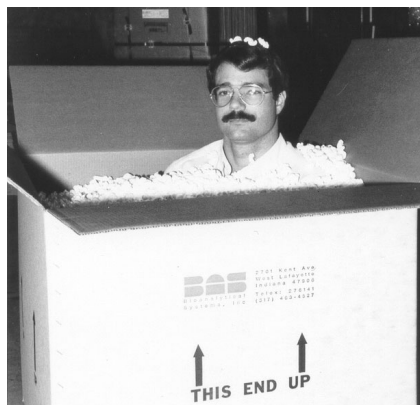
"People used to come back to the lab at night to take a 12 hour blood sample for PK studies and they'd always be grumpy. Now I don't have to hear them snoring about 'missing the last timing' (whatever that means because I never see them at night anymore). The Culex takes blood samples automatically, around the clock, according to a schedule the PI sets up." - *Major* ☺

Learn more by visiting
www.culex.net

Learn more by visiting www.culex.net

was “far too anthropomorphic because clearly rats can’t be interviewed and make such statements.” Amazingly, when the issue was finally published, there was an ad from another company featuring a mouse called Smart Alec, who was depicted dancing and singing about the merits of their product and who seemed quite anthropomorphic to us. There were also several photographs of procedures which appeared highly uncomfortable to the animals being restrained by laboratory personnel. This was ironic, considering that the point of our ad was to offer a far more humane method of sampling blood from an animal that did not involve handling and thus dramatically reduced stress.

F6.



F7.



F8.



Catalog humor

Our first product catalog had several controversial photographs. In **F6** we have a picture of Dr. Jon Howell, now Director of Electrochemistry Research, who agreed in 1988 to sit in a box of Styrofoam peanuts. The caption was, “*You’ll get a chemist as part of the package. Our applications support is a feature of our instruments.*” However Jon’s expression in this photo leads you to think of an alternate caption: “*chemist works for peanuts.*” In **F7** the caption read “*Sometimes manuals get used, but not read!*” as we were suggesting the value of checking the manual before making a phone call. In a section of the catalog devoted to service, we used **F8**, with the caption “*It’s not unusual to be frustrated by tough analytical problems, but don’t take it out on us...we’re trying to help you!*”

In an early manual for one of our electrochemical detectors, we created a character named Murray, **F9**, to illustrate key points and outrageous puns. He was introduced as “Murray, our mercurial mascot” because he looked like an animated blob of mercury, an element traditionally associated with electrochemistry. Some wags have noted his cuteness and suggested a resemblance to Professor Royce Murray of the University of North Carolina. Prof. Murray is now Editor of the journal *Analytical Chemistry* which makes this an extremely inside joke since the majority of our customers are not chemists. Today, Murray is a cartoon emeritus, but it delights his creator to find him pasted on laboratory walls and filing cabinets in far flung corners of the globe.

BAS and the Bees

The honeybee has long been associated with hard work, organization and good performance. Napoleon adopted the bee as a symbol but it was an ancient mascot for the rulers of France, having been

found in royal tombs dating back to the year 457 (4). Our relationship with bees at BAS began with a syringe pump. It was named *Baby Bee*, and its associated controllers were dubbed the drone (one speed only), the Worker Bee (multiple speeds) and the Hive (multiple speeds, multiple Baby Bees). Then there was the Queen (the intelligent one). At the time, we were tired of nondescript, alphanumeric names. Since the engineers refused to let us name the new product Pepe Le Pump, we opted for a bee theme based loosely on the stripes and needle in the syringe. Maintaining our fondness for puns, we named one product the Pollen-8 (an online injector connecting a microdialysis probe to a chromatograph). Our Handbook of Microdialysis is packed with information about microdialysis, and also introduces beekeeping to reinforce the product names. While gathering the beekeeping information for this book, two of us became so fascinated we were led into a new hobby.

We heard that 98% of all species on earth are insects. Thus, on the average, we are all bugs. Our fixation on insects has continued with the Culex Automated Blood Sampler, represented by a mosquito (*Culex pipiens*) in a product logo, **F10**. On our website (www.culex.net) we note the similarities between both forms of *Culex* (they operate painlessly, they use anticoagulants to prevent clotting during transfer of blood) and the differences (our instrument won’t make you itch). Empis is the newest addition to the Culex product line, a programmable syringe pump delivering drug infusions from multiple, automatically-refillable syringes in coordination with blood sampling. We looked for another insect name related to *Culex*. Empis was the name chosen by Aristotle in 350 BC for the mosquito in his *Historia Animalis* (5). Today it is a genus name, applied to creatures commonly called balloon flies which create and tether balloons to attract mates. Learn more at www.empis.net.

Poems

One of us published a poem at the end of a peer-reviewed article in *Analytical Chemistry* in 1976 (2). The article was about ascorbic acid and the rhyme is as follows:

Fortified with Vitamin C
It's a sign we often see
But is it there just like they say,
Or has it oxidized away?

We're not sure whether other poems have been published in the peer-reviewed section of *Analytical Chemistry*, but this should be encouraged.

BAS has a 25-year-old fight song for which we have lyrics, but no melody:

It's my life
It's my dream
To analyze for dopamine
When they write
Or when they phone in
We tell them we do serotonin

At the recent IUPHAR meeting, we were delighted to learn of a song for the Catecholamine Club ("Give me amines that are catecholamines and that bind to the membrane receptor") of which several stanzas were penned by a Purdue University Dean. It is sung with great gusto to the tune of "Stout-Hearted Men." Members of this organization subscribe with great enthusiasm to the notion of science being enriched by humor.

Annual report humor

The one of us not married to the other two, thankfully, is an angler (or, to use a simpler word, a piscatorialist). **F11** shows him as depicted in our 2001 Annual Report, an attempt to hook more stockholders. You will note that Rod (his real name!) holds a stringer of mice, symbolizing his role in producing computer graphics and most of the figures in this article. The mice also represent our interest in the role of animals in research devoted to

understanding how the brain can produce such a twisted set of references to one photograph. The cover art on this issue (as on most issues) was produced by this same catcher of mice, bass, pixels and ideas.

Marriage Humor

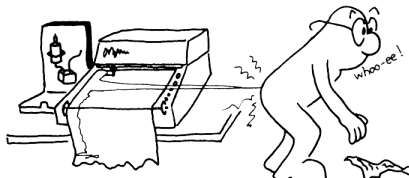
Living together and working together has been interesting for two of us. Our marriage began in 1978, a few years after the founding of BAS. A sense of humor was absolutely necessary for a bride who shared her new home with a young company. Mornings began with the sound of the toilet being flushed repeatedly by employees who had keys to the house. Early customers were puzzled by the new age percussion music they heard when they were put on "hold" during telephone conversations (we didn't have a "hold" button the phone was held to one's chest during these pauses).

Conclusion

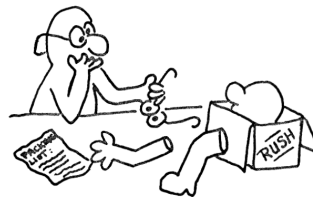
Humor is good therapy, even if it offends some people, some of the time. It is risky, just like research. It may not easily traverse cultural boundaries, or translate as intended. For example, our company logo BAS, translates into French as "low" or "cheap," not exactly a desirable image. Puns are a particular pitfall. Our Ratur product (pronounced Rat-Turn) is often called the Rat-Urn, not at all in keeping with its intended use. Large corporations tend to avoid humor because any risk of offense is unacceptable.

Being able to laugh at yourself is low-cost therapy and does not (yet) require FDA approval. Prisoners of war, cancer patients, neurosurgeons, and others in extreme conditions of stress or distress, all fare better with humor. In science, more than 90% of all experiments fail or take us in unexpected directions. Fewer than 1 out of 10,000 compounds tested will ever

F9.



When you first start up the detector, you may notice a large, off-scale transient.



Check to be sure all of your parts have been received.



Check for leaks.

F10.



become drugs that make it to market. If we focused on these realities without respite, we'd have to find a new profession.

Ogden Nash was an American poet of the last century who created wonderfully witty little poems and aphorisms, including this little ditty:

The ant has made himself illustrious.
Through constant industry industrious.
So what?
Would you be calm and placid,
If you were full of formic acid?

In the last year of his life (1970), he gave a commencement speech at his granddaughter's school in which he defined humor (6). We think Ogden, who in his *Ode to an Ant* combined humor with science, would disagree with the title of this article. In conclusion, offer you his view of humor.

"Humor is not brash, it's not cheap, it's not heartless. Among other things it is a shield, a weapon, a survival kit. So here we are, several million of us, crowded into our global concentration camp for the duration. How are we

to survive? Solemnity is not the answer, any more than witless and irresponsible frivolousness. I think our best chance, the good chance, lies in humor, which in this case means a wry acceptance of our predicament."

References

1. General Anthony McAuliffe, in response to the demand for his surrender of Bastogne, during the Battle of the Bulge (December 22, 1944, 3 days after the birth of author Peter Kissinger).
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4. http://www.napoleon.org/en/essential_napoleon/symbols/index.asp
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F11.

