

THE VORTEX

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CALIFORNIA SECTION
SEPTEMBER 2018



Professor Monica C. So, Speaker at June WCC meeting, Report on page 5

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California Section
American Chemical Society



All are welcome

Friday, October 12, 2018

Dominican University of California
Angelico Hall
50 Acacia Avenue
San Rafael, CA 94901

Time

3:30PM

Saturday, October 13, 2018

Mills College
Rothwell Center Theater
5000 MacArthur Blvd.
Oakland, CA 94613

Time

2:30PM

Reservation Required

Please register by:

1. Email office@calacs.org, or
2. phone 510.351.9922, or
3. Eventbrite: go to www.calacs.org and click desired date.

For either option #1 or #2, send a check for the desired number of tickets (indicating student or regular) made payable to: CA Section ACS, 2950 Merced St., #225, San Leandro, CA 94577, postmarked no later than September 29, 2018. Individuals needing special assistance (ADA, allergies, etc.) should notify CA Section ACS.

Cost

\$15 (\$8 for students and the unemployed)



Marie Curie–Nobel Laureate twice!

About No Belles

No Belles is a dramatic production about women scientists and the Nobel Prize. Portal Theatre is a theater company based in Portland, OR, whose play "No Belles" focuses on the lives of women scientists who won Nobel Prizes and some who did not. It was performed at the Fall 2017 ACS meeting in Washington, DC, and the CA Section WCC have arranged for it to be shown in the San Francisco Bay Area to benefit and inspire young women STEM students, in particular, and be accessible to all students aspiring to become the scientists of tomorrow.

From the Actors

"Portal Theatre is a group of artists dedicated to making exciting, challenging and eclectic new theatre on a variety of topics that are socially and culturally relevant. Through our company-created works, we engage in conversation with our audiences in ways that are both illuminating and entertaining."

About your Role

As attendees, you will be invited to participate in a survey immediately following the play, as well as a networking event that allows students to meet Bay Area scientists to learn about their careers. Don't be shy!

Directions

Dominican University of California:

Go to the website to chart the most suitable route
Parking: The preferred location for events parking is the Conlan Recreation Center Lot / Grand Avenue Lot. This location does not require a parking permit. This lot is located at the intersection of Grand and Acacia Avenues.

Mills College:

From I-580 E: Follow I-580 E to MacArthur Boulevard. Take exit 25B.
From I-580 W: Follow I-580 W to exit 25, which connects to MacArthur Boulevard.
Parking: Free visitor parking is available on campus.

In Partnership With

Gifts & Donations

A gift of \$25 to our High School Chemistry Teachers programs helps support the teacher and school with Chemistry supplies and equipment. Call or email and find out how your valued contribution can be used. Donations to the California Section are tax deductible.

Lou Rigali, LR101898@aol.com

THE VORTEX

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California Section Web Site: <http://www.calacs.org>

Chair's Message



Welcome to our early fall VORTEX Newsletter.

It has been a good summer for our California section.

Our most cordial congratulations go to Dr. Attila Pavlath, past ACS president

and member of our section, for receiving the 2018 Charles Lathrop Parsons Award. This award recognizes outstanding public service by a member of the ACS. Our congratulations also go to Prof. Teresa Head-Gordon on becoming an ACS fellow. We were glad to have her as our section meeting speaker last year.

We were very pleased that our California Section was nominated as one of the candidates for the Outstanding Performance Awards – Very Large Size Category for the 2018 ChemLuminary Awards.

Our section has been awarded two ACS mini grants this year, one for a science cafe in Chico, CA, and another to fund the No Belles event. We will participate at two public outreach events in September: Our section will have a booth, with hands-on activities, at the Solano Stroll in Berkeley, on Sunday, Sept. 9, 10am – 4pm. And on Thursday, September 27, 5 PM - 7 PM,

we will participate for more activities at the Family Science Night at United for Success Academy in the Oakland Unified School District. Contact Alex Madonik, alexmadonik@sonic.net, if you would like to help at one of these events.

Our September Section Meeting, at the USDA in Albany, will feature a talk by Dr. Eva Nogales, UC Berkeley, on “Cryo-EM to visualize the molecular machinery involved in regulation of gene expression”.

Our Women Chemists Committee is working hard to prepare for performances of No Belles, by the Portal Theatre of Oregon; the troupe will present their No Belles play about deserving women scientists who have (and have not) received the Nobel Prize. Look out for the announcements of the performances at Dominican University and Mills College in October in the VORTEX. We are partnering with the Silicon Valley Section for these exciting events.

Also, check out our renovated, mobile-friendly website, at calacs.org, as we keep adding our events to the site. The calendar on it allows one to quickly survey our section events. We hope you can join us at some of these events!

Margareta Séquin



ACS SACRAMENTO PRESENTS:

FLAVORS OF CHEMISTRY: BEER AND CHEESE

SAT. SEPT. 29 2018

1:00 PM – 4:00 PM

UC DAVIS ARC BALLROOM (232 ARC ONE SHIELDS AVENUE, DAVIS)



Prof. Charlie Bamforth

Anheuser-Busch Endowed Professor of Malting and Brewing Sciences at UC Davis will speak about the flavor of beer.



Prof. David Everett

Food Endowed Professor and Director of the Dairy Innovation Institute at Cal Poly will speak about the flavor of cheese.

FOR MORE INFORMATION CONTACT: CARLA SAUNDERS AT CMSAUNDERS@UCDAVIS.EDU

SEE [HTTPS://FLAVORS-OF-CHEMISTRY-2018.BROWNPAPERTICKETS.COM/](https://flavors-of-chemistry-2018.brownpapertickets.com/)

California Section Election – 2018

The California Section, will hold an election this fall for the following positions: Chair-elect, Secretary, Director, two Councilors, two Alternate Councilors, and three Members-at-Large. All these positions are members of the Section's Executive Committee, and the first three positions are members of the Section's Board of Directors. If you have an interest in being a candidate for one of these positions or would like more information,

please contact Michael Cheng [(510) 527-8998, michaeltcheng@gmail.com], Secretary, and member of the Nominations and Election Committee, or Jim Postma [jpostma@csuchico.edu], the chair of the committee, by Sept.15. While the first five elected positions may be filled only by full members of the ACS, the positions of Member-at-large are open to both members and student members of the Society.

*Report from the California Section Women Chemists June 2, 2018
Committee Meeting at UC Berkeley, "Becoming an Assistant Pro-
fessor at a Primarily Undergraduate Institution:
Past, Present and Future"*

At a recent lecture by Dr. Monica C. So, from California State University, Chico (CSUC), presented a different approach to doing state-of-the-art research at a University where teaching is typically job number one. Initially Dr. So gave us a brief overview of her training and what led her to choosing her field of research. Starting with an undergraduate degree at UCLA, she traveled to Northwestern University and obtained her PhD in Inorganic Solid-State Chemistry, where her interest and enthusiasm grew for this field of study. From there she was given an assistant professor position at CSUC where she is currently teaching and does solid state research with undergraduates and graduate students as an Assistant Professor. She stated that she has come full circle, from being the mentee to now being the mentor.

Monica's unique approach is that she uses upper division undergraduates as her research team to expand her research efforts. She has developed a solid-state laboratory experiment (Fabrication and Characterization of Perovskite Solar Cells¹) where she has her undergraduates (and graduate students) building solar cells and testing them for increased efficiency. By changing the various organic and inorganic components of these cells, her group has demonstrated improvements to this low-cost type of solar cell. She stated that these Perovskite Solar cells could be a future low-cost and less polluting alternative to generating power in the United States and presented some data to demonstrate the potential of this technology to replace fossil fuels in the future.

Monica talked about the challenges of dividing her academic employment time in teaching (67%), in doing research (23%) and service (10%). In order to spend more time

doing her solid-state research, she uses her grant money to buy back her teaching time. Her group also found ways to adapt existing analytical equipment for their needs, rather than purchasing a very expensive spectrophotometer. In addition to the work on solar cells, she is investigating the use of synthetic parameters in looking at structural changes in the properties of 2D and 3D nanomaterials. She has a very active ongoing research effort at CSUC, where she gets financial support from the Department of Energy, California State University Program for Education and other funding organizations.

She finished her talk with slides from the thermoelectric project she and her group did in Livermore at Sandia National Laboratories in the summer of 2017, and slides of the people in her group as well as collaborators that helped on her projects. This collaboration with Sandia gave her and her students access to advanced instrumentation and the opportunity to interact on a daily basis with leaders in the field of solid state materials.

It was an impressive talk by Dr. Monica C. So, for such a young professor to put together a strong research effort with such enthusiasm. She is well on her way to having a bright future in this field. If you would like to learn more about Dr. So's research efforts at CSUC, go to the following internet page: <https://www.csuchico.edu/chem/facultystaff/mso.shtml>.

Respectfully submitted,
Lynnette Campbell and Dr. Kent Campbell,
audience participants and Vivien L. Cherrette†, Connor J. Hutcherson†, Jeremy L. Barnett†, and Monica C. So*,
J. Chem. Educ., 2018, 95 (4), pp
631–635.



Erythritol, et al.

(Part 1)



In continuing our search for natural noncaloric sweeteners, the market for such substances continues growing. In previous columns, I have described artificial (manufactured) sweeteners such as sucralose (see Splenda in the Water, November 2010 Vortex) and natural sweeteners such as stevia (see Studying Stevia: October, November, and December 2017 Vortex). In this series, I will investigate the sugar alcohols, particularly the sweetener erythritol.

Sugar alcohols, also known as polyols, occur naturally in many fruits and vegetables. Despite the name sugar alcohols, they contain neither sugar nor alcohol. They are carbohydrates, with similar structures to sugars and alcohols that are classified as: (1) monosaccharide-derived (e.g., erythritol, sorbitol, mannitol, and xylitol), (2) disaccharide-derived (e.g., isomalt, lactitol, maltitol), and (3) polysaccharide-derived mixtures (e.g., maltitol syrup and hydrogenated starch hydrolysates). These substances are now used as sucrose (sugar) substitutes for sugar-free and low-sugar foods and the polyols summarized below are regulated by the Food and Drug Administration (FDA) as either GRAS (Generally Recognized as Safe) or as approved food additives.

Sugar alcohols are not commonly used in home food preparation; many are used in processed foods because they add sweetness, perform functions such as adding bulk and texture, provide a cooling effect or taste, inhibit browning that occurs during heating, and retain moisture.

One gram of table sugar (sucrose), fructose, or lactose contains about 4 calories per gram (cal/g) whereas one gram of a polyol contains from 0 to 3 cal/g (generally averaging 1.5 cal/g). Most sugar alcohols contain fewer calories than sugar and therefore may be labeled as “sugar free.”

Manufactured/processed food products include hard candies, cookies, chewing gums, soft drinks and throat lozenges. Sugar alcohols can also be labeled as “reduced calorie sweeteners” or sugar substitutes.

Forms of Sugar Alcohol

Erythritol (0 to 0.2 cal/g) has 25 to 50 percent (%) of sugar’s sweetness occurring naturally in minor amounts (up to 0.2 g per serving) in pears, melons, grapes and mushrooms and in yeast-derived foods such as wine, beer, sake, soy sauce, and cheese; it also occurs naturally in the human body. Because it essentially has zero calories (Japan and the U.S. label it as a zero-calorie product), erythritol is used in low calories foods providing sweetness, texture and bulk for many sugarless products. When ingested, 60 to 90% is absorbed in the small intestines into the blood to be mostly excreted in urine with minor excretions in feces resulting in much less intestinal colon distress than other sugar alcohols (see below). Industrially, erythritol is produced by the enzymatic hydrolysis of genetically modified corn starch that generates glucose, which is then subsequently fermented with yeast or another fungus.

Isomalt (2.0 cal/g) is 45 to 65% as sweet as sugar. Because it tends not to losing its sweetness or decompose during heating and absorbs very little water, it is useful as a sweetener in hard candies, lollipops, toffee, cough drops, and throat lozenges.

Maltitol (2.1 cal/g) has 75% sugar’s sweetness. It is used in sugar-free hard candies, chewing gum, chocolate-flavored desserts, baked goods and ice cream because it gives a creamy texture to foods.

Mannitol (1.6 cal/g) has 50 to 70% of sugar’s relative sweetness, thereby requiring greater amounts to equal sugar’s sweetness. It occurs naturally in pineapples, olives, asparagus, sweet potatoes, and carrots. It is used as a dusting powder for chewing gum, and as a chocolate-flavored coating agent for ice cream and confections. In food manufacturing, it is extracted from seaweed. Mannitol tends to remain in the lower intestines for extended periods often causing bloating and diar-

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A Story Behind The Monsanto Cancer Trial

EXCERPT: How many ghostwritten papers declaring pesticide safety are littering the scientific literature? And given the evidence of misconduct in this instance, why are these papers still in publication? Why has there been no retraction, no clarification, no correction to the obviously deceptive disclosure?

What “ghostwriting” by Monsanto means, how it has influenced, and still is influencing, material found in peer-reviewed scientific journals

Consumers and journalists around the world were stunned earlier this month when Monsanto, after being forced in a court of law for the first time to defend the safety of its popular weed killer Roundup, was found liable for the terminal cancer of California groundskeeper Dewayne Johnson.

The unanimous 12-member jury found that Mr. Johnson’s exposure to Monsanto’s weedkiller was a “substantial” contributing factor to his disease and that there was “clear and convincing” evidence that Monsanto acted with “malice or oppression” because the risks were evident and Monsanto failed to warn of those known risks. Aside from dueling expert testimony on both sides, the jury was provided with internal company emails and work plans indicating that Monsanto had been corrupting the scientific record by ghostwriting literature asserting safety.

As the jury’s decision sets in, and thousands of additional plaintiffs who have filed similar suits wait for their day in court, it is worth taking time to understand exactly what “ghostwriting” by Monsanto means, how it has influenced, and still is influencing, material found in peer-reviewed scientific journals.

We offer this example:

When the scientific journal *Critical Reviews in Toxicology* (CRT) published a series of papers reviewing the carcinogenic potential of weed-killing agent glyphosate, the main ingredient in Monsanto’s Roundup, in September 2016, the findings were

so significant that they were widely reported by media outlets around the world.

The papers, published in a special issue of CRT entitled “An Independent Review of the Carcinogenic Potential of Glyphosate”, directly contradicted the findings of the World Health Organization’s International Agency for Research on Cancer (IARC), which in 2015 found glyphosate to be a probable human carcinogen. The authors of the 2016 review found that the weight of evidence showed the weed killer was unlikely to pose any carcinogenic risk to people.

The findings were critical to Monsanto – the company was facing doubts by European regulators about allowing glyphosate to remain on the market. As well, Monsanto was facing a growing mass of lawsuits claiming its weed killer caused people to develop non-Hodgkin lymphoma.

Sixteen scientists from “four independent panels” signed their names to the published work, declaring to readers that their conclusions were free of Monsanto’s intervention. Underscoring the supposed independence of the work, the declaration of interest section stated, “Neither any Monsanto company employees nor any attorneys reviewed any of the Expert Panel’s manuscripts prior to submission to the journal.”

It has since become evident that these papers were anything but independent. Internal Monsanto documents forced into the public spotlight through litigation show that the papers were conceptualized from the outset as a deceptive strategy for Monsanto. One of Monsanto’s top scientists not only reviewed the manuscripts but had a hand in drafting and editing them. The finished papers were aimed directly at discrediting IARC’s classification.

In one internal email, Monsanto’s chief of regulatory science, William Heydens, told the organizer of the panel, “I have gone through the entire document and indicated what I think should stay, what can go, and in a couple spots I did a little editing.”

The internal documents show that Hey-

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dens even argued over statements that he wanted included but that author John Acquavella deemed “inflammatory” and “not necessary” criticisms of IARC. Draft documents show Heydens’ edits contradicted Acquavella’s edits even though Heydens was not supposed to have even reviewed the papers. Heydens went so far as to state, “I would ignore John’s comment” and “I don’t see a reason for deleting the text that John did below.”

Other edits show Heydens attempting to control the tone of the manuscript, stating, “The deleted statement below has nothing to do with IARC criticism and should be put back in, John over-stepped the bounds here” and “I can live with deleting the text below, assuming that exposure text above ... is added back in.” He also argued for putting a deleted phrase back in because it gave “clarity about IARC’s approach”. “This is not inflammatory, it is descriptive,” he wrote.

The importance of the papers to Monsanto as a tool to counter IARC’s classification of glyphosate as a probable carcinogen was laid out in a confidential document dated May 11, 2015, naming several of the scientists who could be used as authors to give the papers credibility. The internal documents speak of “ghost-writing” strategies aimed at using non-company scientists as authors to lend credibility to the findings.

When placed under oath in a deposition, Heydens acknowledged that the manuscripts were sent to him and he read “parts of some of them”, prior to their submission to the journal. He said he did not “recall” whether or not he made the 28 edits that plaintiffs’ attorneys counted in the internal records.

All of this was among the evidence presented to jurors in San Francisco Superior Court as they considered Johnson’s claims. But the evidence of ghostwriting and misconduct have far broader implications than one lawsuit.

How many ghostwritten papers declaring pesticide safety are littering the scientific literature? And given the evidence of misconduct in this instance, why are these

papers still in publication? Why has there been no retraction, no clarification, no correction to the obviously deceptive disclosure?

Last August, after the documents gained media attention CRT editor Roger McClellan said the “serious accusations” deserved “careful investigation”, and he and CRT publisher Taylor & Francis would take “appropriate action”.

Shortly thereafter the Center for Biological Diversity and three other national environmental-health organizations sent a letter to CRT and Taylor & Francis detailing the ethical misconduct and formally asking for a retraction. It’s been more than a year since this investigation was begun and, despite multiple follow-up requests by the organizations, no action has been taken.

With Taylor & Francis’s own policy being to issue a retraction for misconduct “when there has been an infringement of publishing ethics”, the case for retraction couldn’t be more clear.

Monsanto’s fingerprints are all over this “independent” review, as laid out in Monsanto’s own internal documents.

Taylor & Francis must determine the standards to which it is willing to hold scientists who publish in its journals – if not for the reputation of the journals themselves, then for the sake of scientific integrity itself and the public’s right to the truth.

Carey Gillam is a journalist and author, and a public interest researcher for US Right to Know, a non-profit food industry research group

Nathan Donley, Ph.D, is a former cancer researcher who now works as senior scientist in the Center for Biological Diversity’s environmental health program.

https://www.ehn.org/monsanto-science-ghostwriting-2597869694.html?utm_source=EHN&utm_campaign=8eefd9dfad-RSS_EMAIL_CAMPAIGN&utm_medium=email&utm_term=0_8573f35474-8eefd9dfad-99474345
[links to sources are at the URL above]



Drug Maker Pfizer Agrees to Pay \$23.85 Million to Resolve False Claims Act Liability for Paying Kickbacks

Pharmaceutical company Pfizer, Inc. (Pfizer), based in New York, NY, has agreed to pay \$23.85 million to resolve claims that it used a foundation as a conduit to pay the copays of Medicare patients taking three Pfizer drugs, in violation of the False Claims Act, the Justice Department announced today.

When a Medicare beneficiary obtains a prescription drug covered by Medicare Part B or Part D, the beneficiary may be required to make a partial payment, which may take the form of a copayment, coinsurance, or deductible (collectively copays). Congress included copay requirements in the Medicare program, in part, to encourage market forces to serve as a check on health care costs, including the prices that pharmaceutical manufacturers can demand for their drugs. Under the Anti-Kickback Statute, a pharmaceutical company is prohibited from offering, directly or indirectly, any remuneration—which includes paying patients' copay obligations—to induce Medicare patients to purchase the company's drugs.

As part of today's settlement, the government alleged that Pfizer used a foundation as a conduit to pay the copay obligations of Medicare patients taking three Pfizer drugs: Sutent and Inlyta, which both treat renal cell carcinoma, and Tikosyn, which treats arrhythmia in patients with atrial fibrillation or atrial flutter. The government alleged that, in order to generate revenue, and instead of giving Sutent and Inlyta to Medicare patients who met the financial qualifications of Pfizer's existing free drug program, Pfizer used a third-party specialty pharmacy to transition certain patients to the foundation, which covered the patients' Medicare copays. Pfizer allegedly made donations to the foundation to enable it to cover the copays of these patients and received confirmation from the foundation, via the specialty pharmacy, that the foundation funded the copays.

With respect to Tikosyn, Pfizer raised the wholesale acquisition cost of a package of forty .125 mg capsules of the drug by over 40 percent in the last three months of 2015. Pfizer allegedly knew that the price increase would also increase Medicare beneficiaries' copay obligations for Tikosyn, and potentially prevent some patients from being able to afford the drug. Pfizer allegedly worked with the foundation to create and finance a fund for Medicare patients suffering from the condition treated by Tikosyn, coordinated the opening of the fund with the implementation of its price increase for the drug, and referred patients to the fund. For the next nine months, Tikosyn patients accounted for virtually all of the beneficiaries whose copayments were paid by the fund.

"Kickbacks undermine the independence of physician and patient decision-making, and raise healthcare costs," said Acting Assistant Attorney General Chad A. Readler of the Justice Department's Civil Division. "As today's settlement makes clear, the Department will hold accountable drug companies that pay illegal kickbacks—whether directly or indirectly—to undermine taxpayer funded healthcare programs, including Medicare."

"Pfizer used a third party to saddle Medicare with extra costs," said United States Attorney Andrew E. Lelling. "According to the allegations in today's settlement agreement, Pfizer knew that the third-party foundation was using Pfizer's money to cover the co-pays of patients taking Pfizer drugs, thus generating more revenue for Pfizer and masking the effect of Pfizer's price increases. The Anti-Kickback Statute exists to protect Medicare, and the taxpayers who fund it, from schemes like these. At the same time, we commend Pfizer for stepping forward to resolve these issues in a responsible manner."

"Today's settlement demonstrates the FBI's commitment to making sure patients receive, and the government pays for, health care that is not compromised by kickbacks," said Harold H. Shaw, Special Agent in Charge, FBI Boston Division.

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continued from page 6)

Lactitol (2.0 cal/g) has approximately 30 to 40% of sugar's sweetness. However, because its taste and solubility closely resemble sugar, it's commonly used in sugar-free ice cream, chocolate, hard and soft candies, baked goods, sugar-reduced preserves and chewing gums.

Sorbitol (2.6 cal/g) has only 50 to 70% of sugar's relative sweetness, requiring twice as much to deliver the same amount of sweetness to a product. It's often an ingredient in sugar-free chewing gums, candies, frozen desserts, and baked goods. Although it occurs naturally in fruits and vegetables, for food production, it is manufactured from corn syrup. When compared to mannitol, it has less tendency to cause intestinal problems.

Xylitol (2.4 cal/g) with the same sweet-

ness as sugar is also known as "wood sugar," because it occurs naturally in straw, corncobs, fruits, vegetables, cereals, mushrooms, and some cereals. It is used as a sweetener for some chewing gums, gum drops, hard candy, pharmaceuticals and oral health products (i.e. throat lozenges, cough syrups, children's chewable multi-vitamins, toothpastes, and mouth washes). It is also used in foods requiring special dietary purposes. A major detraction is that it may have laxative effect causing upset stomach and diarrhea. It's manufactured using hydrogenation processes.

Hydrogenated starch hydrolysates (HSH) (3 cal/g) provide 25 to 90% of sugar's sweetness. HSH do not crystallize and therefore are used in confections, baked goods and mouth washes. HSH are manufactured by partial hydrolysis of corn.

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"What Pfizer is accused of doing in this case—masking charitable contributions to increase company profits—violates the basic trust patients extend to the healthcare system and threatens the financial integrity of the Medicare program."

Pfizer has also entered into a corporate integrity agreement (CIA) with the Department of Health and Human Services Office of Inspector General (HHS-OIG). The five-year CIA requires, among other things, that Pfizer implement measures designed to ensure that arrangements and interactions with third-party patient assistance programs are compliant with the law. In addition, the CIA requires reviews by an independent review organization, compliance-related certifications from company executives and Board members, and the implementation of a risk assessment and mitigation process.

"Our corporate integrity agreement promotes independence between Pfizer and any patient assistance programs to which it may donate," said Gregory E. Demske, Chief Counsel to the Inspector General for the United States Department of Health and Human Services. "Without true in-

dependence, as we have seen in this case, drug companies may use patient assistance programs as conduits for improper payments that harm Medicare."

The government's resolution of this matter illustrates the government's emphasis on combating healthcare fraud. One of the most powerful tools in this effort is the False Claims Act. Tips and complaints from all sources about potential fraud, waste, abuse, and mismanagement, can be reported to the Department of Health and Human Services at 800-HHS-TIPS (800-447-8477).

The investigation was conducted by the Justice Department's Civil Division and the U.S. Attorney's Office for the District of Massachusetts, in conjunction with the Department of Health and Human Services, Office of Inspector General; the Federal Bureau of Investigation; the Department of Veterans Affairs, Office of Inspector General; and the United States Postal Inspection Service.

The claims resolved by the settlement are allegations only; there has been no determination of liability.



BUSINESS DIRECTORY

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There are several web sites that may help you search for these open positions.

- www.mboservices.net
- <http://www.calacs.org/page.asp?id=22>

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