

## Color Printing Advancements: Before CMYK

The four-color process using cyan, magenta, yellow and black (CMYK) inks is a relatively new development in the history of printing; it has only been around for about 130 years. Its effectiveness builds on other technological developments like halftoning, offset lithography and modern ink manufacturing techniques that enable wet-on-wet printing.

Before CMYK, reproducing color images was very tedious. In Gutenberg’s time (during the 15th century), artists were sometimes hired to hand color black-only prints, but this work was time-consuming and expensive. Late in the 18th century, Alois Senefelder’s development of lithographic printing opened up new possibilities for high quality (and very detailed) printing, though it was often monochrome only.

Around the middle of the 19th century, pioneering printers began using stone lithography to create multiple colors in a process known as chromolithography. Understanding the tremendous advancements in color printing that took place during that time provides some insight into the technological developments that are happening today.

### A promotional example of chromolithography

Some of the most beautiful examples of chromolithography are contained in the “Album des célébrités contemporaines, publié par Lefevrè-Utile” (circa 1909). Translated, the title reads “Album of Contemporary Celebrities, published by Lefevrè-Utile.” This album is a collection of individual promotional cards produced for the Lefevrè-Utile company of Nantes, France. Founded in 1846, Lefevrè-Utile continues to operate today—but you are more likely to know them as LU, a maker of cookies like Petit Beurre. The individual cards shown in the album were included in packages of cookies as a collector’s item. There are only five of these complete albums in America, and one of them is at the Museum of Printing in Haverhill, Massachusetts.

Figure 1: Promotional cards for Lefevrè-Utile printed using chromolithography



Source: Museum of Printing, Haverhill, Massachusetts

Images like the ones in the LU album were popular as trading cards from the 1870s to the early 1900s. People collected and traded the cards and often saved them in albums. Similar in concept are fancy Victorian chromolithographic prints of romantic and sentimental scenes called “scraps,” which featured birds, butterflies, flowers, hands, hearts, pets, wild animals and many other images. Some of these were also traded or collected in albums.

Figure 2: Victorian-style scraps printed by the George Spencer Vibbert Company using chromolithography



Source: Museum of Printing, Haverhill, Massachusetts

### The birth of the American Christmas card

Chromolithography played a big role in the time-honored tradition of sending Christmas cards. A Boston-based lithographer and publisher named Louis Prang (1824-1909) was instrumental in the development of the chromolithographic color printing process. Born in Prussian Silesia, Prang was the son of a textile manufacturer. He learned engraving, dyeing and printing from his father before emigrating to the United States, ultimately founding a printing company with a partner in 1856.

In 1864, Prang went to Germany to learn about the latest lithographic techniques. When he returned, his company began creating reproductions of well-known art works. He expanded his business into greeting cards for the English market in 1873 and then in America in 1874. He is often referred to as the “Father of the American Christmas card.” You will note that the Prang Christmas cards shown in figure 3 include embossing and gold metallic special effects.

Figure 3: Louis Prang Christmas cards printed using chromolithography



Source: Museum of Printing, Haverhill, Massachusetts

### Advertising and promotion

Some chromolithography prints were used for advertising purposes. In the figure below, an eye-catching image of an egg and a frog titled “Eggspectation” serves as a carrier for the services of “Joseph Pierpoint, Dealer in Groceries, Dry Goods, Drugs & Medicines, Boots, Shoes, Etc.”

From a production perspective, it is worth noting that the printer left room at the top for advertising text. This was added afterwards in a separate step using letterpress. This enabled the advertiser to choose the most suitable image from a printer who purchased the already-printed cards from a dealer. This particular card may have survived because of a print flaw. You can see that the black plate is slightly out of alignment. You can also see stippling in the upper right corner, foreshadowing the use of halftoning.

Figure 4: Advertisement for Joseph Pierpoint printed using chromo-lithography



Source: Museum of Printing, Haverhill, Massachusetts

### The next step toward CMYK

Experimentation with streamlining the color printing process can be traced back to the work of early chromolithographers, though it took until January of 1893 when a man named William Kurtz printed the first widely reproduced image using a three-color process with blue, red and yellow inks. Yet the three-color process did not produce a very satisfactory black, and so eventually a black separation (the “key” color and the K in CMYK) was added to solve that issue while also providing detail and contrast.

### The bottom line

Years from now, what will people remember? Will the inherent beauty or sentimental value of what you print compel them to keep a copy? Unless you’re in the business of book printing or reproducing artists’ work, this may not be the case. Much of what is produced in print today is ephemeral, and that’s okay, but there is still room for attention-grabbing work in printed advertisements, point-of-purchase displays, posters and other promotional items.

When looking at a classic 19th century Currier and Ives print of a railroad train or steamboat, you might think that it was produced using chromolithography—but you’d only be half right. The main image was produced using lithography, but Currier and Ives employed a team of colorists who added color by hand. They resisted automation and instead relied on manual labor. That kind of strategy would certainly not work today.

As one examines the rapid advancements in color reproduction between 1850 and 1950, it parallels the more recent technological developments in desktop publishing and digital printing that have totally transformed the industry. The next wave of technological advancements are less likely to be print-related and more likely to come from artificially intelligent uses of content and robotics for automation.

Source: Jim Hamilton, Consultant Emeritus at Keypoint Intelligence

## BUSINESS MANAGEMENT

## Out of Sight, Out of Mind, Out Looking Elsewhere

The president of a design firm in our building once told me they were “open” to exploring an alternative source for their printing needs. He explained that despite purchasing over \$100,000 in print annually, they no longer felt the same level of appreciation that they did when their relationship began a year ago. He said that they rarely hear from the printer, are always the ones who have to initiate contact to check on job status and that they never get thanked (printing it on the bottom of an invoice doesn’t count!). He further noted that while providing accurate information, the person who takes their calls seemed to lack enthusiasm.

Undoubtedly, many of your competitors offer a quality product and service, with prices and delivery standards that are reasonable or excellent. Given this, how can you continuously attract and win new clients and prevent your current clients from being drawn away by competitors? All things being equal, your clients will naturally go where they consistently feel well-treated and appreciated.

Sure, you care about your clients, but what happens if you need more time to show it? The answer is to do a little more planning and be more thoughtful, attentive and creative about the quality of your communication. Set up a series of “nurturing” mailers throughout the year – a continuous client contact program that will demonstrate, at regular, pre-planned intervals, that you honestly and sincerely care about their well-being.

Start growing the relationship. Marketing is now about giving, not asking. Offer valuable tips, stop by occasionally in person and send press releases, cards and other greetings that remind clients of your commitment to service, value, quality, innovation and loyalty. After all, it’s a lot easier (and less expensive) to keep clients than it is to find new ones. Your growth depends on it!

Source: Patrick Whelan, Great Reach Communications Inc., <https://greatreachinc.com>.



# How to Avoid a Workplace Retaliation Claim

While human resource professionals know the importance of following workplace anti-discrimination laws, they also must ensure that employees who report discrimination do not face retaliation for having done so. The reason for this is simple: The most common type of claim filed with the U.S. Equal Employment Opportunity Commission (EEOC) is retaliation. More than half the charges filed with the EEOC in fiscal year 2021 included a retaliation claim.

As a result, employers must have strong policies to prevent retaliation and document the reasons for taking any disciplinary action against or terminating employees. Employers must consistently apply those policies and practices to all employees. Therefore, employers must consult legal counsel if they need to deviate from a policy.

Employers also can adhere to the following four practices to minimize the risk of retaliation claims.

### Recognize protected activity

Laws that protect employees and applicants from discrimination on various protected characteristics also make it unlawful for employers to retaliate against them for bringing discrimination claims. A formal complaint of discrimination is not the only form of protected activity. Other unspecified acts that oppose discrim-

ination also may be protected activity, as long as the employee was acting on a reasonable belief that discrimination in the workplace occurred. For instance, refusing sexual advances, complaining about perceived discrimination of co-workers and declining to follow instructions that would result in discrimination are also protected activities.

### Train supervisors

Supervisors should undergo training specifically designed to minimize the risk of retaliation claims. For example, they should understand the necessity of consistently applying and enforcing employment policies. They also should not take employment discrimination complaints personally and retaliate with future layoffs or disciplinary action that punishes employees for participating in the complaint process. Supervisors also should not take any actions that could be misconstrued as a deterrent for employees to participate in the complaint process.

### Establish a complaint process

Employers should establish a clear process for handling complaints. For example, employers should designate a staff member to review proposed employment actions and ensure they are non-discriminatory and nonretaliatory. In addition, if employees raise questions about potential EEO



violations, management and human resource personnel should be trained to respond to and manage the complaints properly.

### Create and follow consistent practices

Finally, establishing and following clear and consistent anti-retaliation workplace policies is key to avoiding discrimination and retaliation complaints. Employers should be clear that retaliation is unacceptable, and employees should immediately report it. In addition, any complaints of retaliation should be promptly and thoroughly investigated.

Source: Hall Benefits Law, a national boutique ERISA and employment law firm headquartered in Atlanta, Georgia, [www.hallbenefitslaw.com](http://www.hallbenefitslaw.com).

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## CONTACT US

### Address

5800 S. Eastern Avenue,  
Suite 400  
Los Angeles, CA 90040  
P.O. Box 910936  
Los Angeles, CA 90091  
Phone: 323.728.9500  
[www.piasc.org](http://www.piasc.org)

### Key Contacts

**LOU CARON,**  
**PRESIDENT**  
Ext. 274, [lou@piasc.org](mailto:lou@piasc.org)

**JUSTIN BOURG,**  
**COMMERCIAL INSURANCE**  
Ext. 284, [justin@piascins.com](mailto:justin@piascins.com)

**EVIE BAÑAGA,**  
**EMPLOYEE BENEFITS**  
Ext. 224, [evie@pibt.org](mailto:evie@pibt.org)

**KRISTY VILLANUEVA,**  
**MEMBER SERVICES**  
Ext. 215, [kristy@piasc.org](mailto:kristy@piasc.org)

**RODNEY BOLTON,**  
**HUMAN RESOURCES**  
Ext. 218, [piasc@hrbizz.com](mailto:piasc@hrbizz.com)

## MEMBER NEWS

# Employee Spotlight: Nadine Mora

Nadine Mora’s interest in the marketing field was first sparked by one of her High School teachers. That interest took her to U.C. Irvine, where she earned her Bachelor of Arts in Business Administration with a Marketing Emphasis. While in college Nadine also honed her skills through internships at a private school, where she assisted with recruitment marketing and social media.

After working in the Workers Comp industry immediately following graduation, in May 2022 Nadine was thrilled to join PIA as a Member Services Associate. This position enabled Nadine to get back to the marketing field in a position that connects all of her marketing interests – the creative side, branding, social media and more – while also learning more about print marketing. Today Nadine puts her skills to work as she handles all aspects of marketing for PIA’s Member Services department.

### You are probably familiar with Nadine’s work

If you read the Native.news printed newsletter, eFlash biweekly e-blast or For Owners Only or Referral Rescue emails, you can thank Nadine for ensuring these got out on schedule. If you follow PIA on one of our social media platforms (Facebook, Instagram and Twitter), you have seen her work. If you’ve called the PIA office to place a classified ad or ask questions about our website or any of the discount programs available to you as a

PIA member, chances are you have had the pleasure of speaking with Nadine.

### Nadine stays on top of marketing trends

“One of the many things that Nadine brings to the table,” shares Director of Member Services Kristy Villanueva, “is that she really stays on top of the latest marketing trends, especially regarding social media.”

“I love the fact that social media marketing is always evolving and changing!” Nadine exclaims. “It’s about learning which platforms best fit your target audience and then keeping up with it. PIA’s members, for example, are primarily on Facebook and Instagram. But I’m also looking at newer platforms, such as Tic Toc and the one that Meta just launched on July 5, Threads, to see if these would be better vehicles for connecting with the younger generations – our future workforce – about the printing industry.”

Nadine believes that the new Threads platform is a great example of how social media marketing evolves. “The idea of launching Threads from within Instagram, which is a well-established app, is smart,” she says. “If you are already on Instagram, you technically already have a Threads account – you just need to activate it. When you do, you’re not starting with zero followers on Threads, because all of your Instagram followers essentially come with you.”

The idea of Threads, Nadine explains, is that you are “threading” ideas, informing others within your industry of what’s happening, or joining in conversations to gain and share insight. “I think this will be important for many of our members,” Nadine says. “Threads will be like a more personalized conversation that businesses and their customers can have.”

### Here to support you

PIA exists to support and advocate for the graphic communications industry. As a PIA team member, Nadine is here to support you. You can reach Nadine at (323) 728-9500 ext. 262 or [nadine@piasc.org](mailto:nadine@piasc.org).



5800 S. Eastern Ave., #400  
Los Angeles, CA 90040



## Events CALENDAR

- Krazy Krafts Day for Kids  
**SATURDAY, DECEMBER 9**  
10:00 AM – 4:00 PM PT  
International Printing Museum  
Carson, CA  
[printmuseum.org/kraftsday](http://printmuseum.org/kraftsday)
- O.S.T.S. Free Webinar:  
Planning Your 2024  
Safety Program  
**MONDAY, DECEMBER 11**  
10:00 AM PT  
[confa.cc/451yKPH](mailto:confa.cc/451yKPH)
- Ben Franklin’s  
Birthday Celebration  
**SATURDAY, JANUARY 20**  
10:00 AM – 4:00 PM PT  
International Printing Museum  
Carson, CA  
[bit.ly/FranklinsBirthday2024](http://bit.ly/FranklinsBirthday2024)

## 12 December

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31						

FOR FULL LIST OF EVENTS,  
PLEASE VISIT  
[WWW.PIASC.ORG/EVENTS](http://WWW.PIASC.ORG/EVENTS)

- Paper and Substrate Show  
**THURSDAY, MARCH 28**  
5:30 - 9:00 PM PT  
Irvine, CA  
[www.piasc.org/papershow/](http://www.piasc.org/papershow/)
- Americas Print Show 2024  
**WEDNESDAY - THURSDAY, MAY 8-9**  
Cleveland, Ohio  
[americasprintshow.com](http://americasprintshow.com)

EMPLOYEE SPOTLIGHT:  
**NADINE MORA**

HOW TO AVOID A WORKPLACE  
RETALIATION CLAIM

OUT OF SIGHT, OUT OF MIND,  
OUT LOOKING ELSEWHERE

COLOR PRINTING ADVANCEMENTS:  
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