



taylor'd

ERGO TIMES

3D printing: A new way to fit work to workers

3D printing is an additive process that involves laying down material to create an object, based on a digital design. Recent advances have made this process much more economical and accessible. A variety of materials such as plastic, glass or metal can be used, and 3D printers, or businesses that 3D print, are widely available. From an ergonomics perspective, the potential is exciting. Here are some of the possibilities that we embrace:

- **Lighter-weight tools.** Tools that previously needed to be machined out of metal can now be printed using much lighter weight materials. In fact, 3D printed tools can be built “hollow”, and materials can be used that are chemical and heat resistant, or UV stable.
- **Custom-shaped tools.** We used to purchase heat-moldable material so that employees could customise the grips on their (own) hand tools. Now, we could print handles that fit an employee’s hand, precisely. While you probably can’t imagine paying for a custom-designed hammer or bread knife, I think you might be able to attach value to your surgeon having a set of tools that precisely fit his/her hand. Any time anyone spends hours with a specific tool in hand, it makes sense that the tool should fit the hand perfectly, and should be as lightweight as possible. Many employees (utility service, mechanics, medical professionals, to name a few) own their own tools.
- **Personal supportive devices.** Why can’t we re-purpose the approach used to make prosthetics, to develop supportive, perfectly-customised backrests and seat cushions for office workers and drivers? New 3D printing materials and methods may even allow us to design a “seat” that changes or moves throughout the day, to help us avoid spending hours in the same position. The potential for wheelchairs to be designed to avoid pressure sores is also intriguing.
- **Fixtures and jigs.** These devices, which help to position parts for processing, or guide tools to parts accurately, have always been challenging to build well. Ergonomists often butt heads with engineers over the poor ergonomics that are associated with fixtures and jigs that are designed for manufacturing, at the expense of employee comfort; by the time we are involved it’s too late to influence the design. 3D printing should allow us to have input at the design stage.

When “rapid innovation” takes hold, we run the risk of creating monsters; enthusiasm sometimes causes us to bypass common sense, and to build things to accomplish one or two design improvements, in spite of some glaring deficiencies. For example, the first 3-D printed tool that we encountered in manufacturing was considerably lighter than the metal tool that it was meant to replace (yay!). However, the handle and trigger were rectangular in cross-section, unlike the more “oval” contours of the human palm and fingers. The operators complained of contact pressure in the palm and against the trigger finger. We were there to help, but if we had not been working with that client, then the “innovative” tool might have created a new hazard. **If you are making a change in your workplace that might allow a better fit *between* work and workers, please call us for help!**



Improving work design to exceed your goals for productivity, quality, and employee health.

SAVE A TREE!

You’ll get more info, more often, if you **convert to e-news**. Just send us an email at info@taylordergo.com, call 519 623 7733, or text 905 979 0356, to provide your email address.

When you move, please update our list, **AND** leave our contact info for the person who replaces you!

Our team (shown above, left to right, backstage at Rocky Horror Show in Stratford, December, 2018)

Karen Hoodless
M.Eng., CCPE, CPE
Ergonomist, St. Marys

Josie Blake
B.Sc.(Hon.Kin.), AE
Ergonomist, London

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M.Sc., CCPE, CPE, R.Kin.
Principal Ergonomist

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B.A.(Hon.Kin.), AE
Ergonomist, Mississauga

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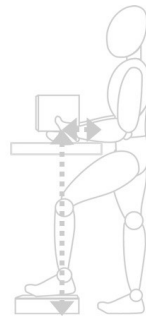
All of our ergonomists are members of:

2019



January

Su	Mo	Tue	We	Th	Fri	Sat
		1 <i>New Year's</i>	2	3	4	5
6	7	8 <i>PDA w/shop</i>	9 <i>PDA w/shop</i>	10	11	12
13	14	15	16	17	18	19
20	21	22	23 <i>Lift T-T-T</i>	24	25	26
27	28	29	30	31		



February

Su	Mo	Tu	We	Th	Fri	Sat
					1	2
3	4	5 <i>Office ergo</i>	6	7	8	9
10	11	12	13	14	15	16
17	18 <i>Family</i>	19	20	21	22	23
24	25	26 <i>101 solutions</i>	27	28		

April

Su	Mo	Tue	We	Th	Fri	Sat
	1	2	3	4	5	6
7	8	9 <i>Return to work</i>	10	11	12	13
14	15	16	17	18	19 <i>Good Friday</i>	20
21	22	23	24	25	26	27
28	29	30				

March

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17	18	19	20	21	22	23
24 31	25	26 <i>Ergo design</i>	27	28	29	30

May

Su	Mo	Tue	We	Th	Fri	Sat
			1 <i>PDA w/shop</i>	2 <i>PDA w/shop</i>	3	4
5	6	7	8	9	10	11
12	13 <i>Driver</i>	14	15	16	17	18
19	20 <i>Victoria</i>	21	22	23	24	25
26	27	28	29	30	31	

June

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22 years at Taylor'd Ergo by Karen Hoodless

In November of 1996, I left a full-time position to join Carrie in her second year in business. I'm sure I never imagined then, that I would still be here in 2018, but I have no regrets. I'm moving on at the end of this year, and we thought that it might be fun to look back at some of my more memorable projects and experiences.

My very first project at Taylor'd Ergo was a risk assessment at a turkey processing plant, running at full capacity for the upcoming Christmas holiday. The job? "Pulling Gut". By the end of the assessment, my notes were a mess, and I had decided on a Christmas dinner menu that centered on ham for that year. (Not because I had any concerns about poultry processing - we still eat lots of turkey in our house. I just needed a couple of weeks for my appetite to return.)

Years later, I worked with turkeys again, this time on a breeding farm. I had never showered five times a day! Stepping into a barn full of large, male birds (standing waist high) was initially scary. The birds collectively turned to look and gobble at me! As I walked through the masses, they cleared a path in front of me, and closed in behind me. I thought that if I made a wrong move, I was going to get attacked, but it turns out that they are very gentle animals.

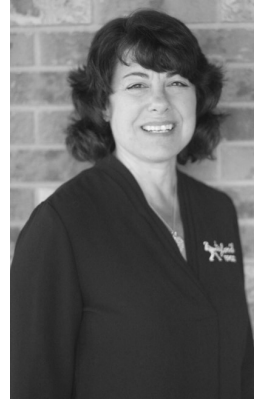
I learned that getting dirty is just part of the ergonomist's job. I have been covered in dust, blood, fat and guts, oil, grease, cement, and carbon. None of this really bothered me, but I did learn to carry a tub of sanitizing wipes in my bag, so I could clean my equipment afterwards. I have accumulated three pairs of safety boots, for different work environments.

This job has allowed me to travel (by plane, train and automobile) all across the province, the country, and the world. I often scheduled vacation around these projects, to visit family or just be a tourist. One project involved remote logging areas of Pennsylvania, Ohio, and West Virginia, naturally over the winter season. No matter how well I had bundled myself, by the end of each day, I was always frozen. A hot bath before dinner was part of my daily travel routine that winter.

One of the most enjoyable aspects of my job was receiving ongoing lessons in "How things are made" (or, occasionally, how things are *dis*-assembled). I can honestly say that I have learned something new every day.

I often taught our ergonomics workshops, which I really enjoyed, as teaching allowed me to educate others about our field, in a fun and interactive way. I always had stories to share with participants, to bring home the point of the discussion.

I could go on forever, but I won't, except to say, thank you, Carrie, for the opportunity to work with you, our clients, and the many team members that have made up Taylor'd Ergonomics over the years. Many of you have left indelible marks on me. (Forgive me, though, if I run into you and I have forgotten your name. I estimate that I have met an average of 10 new people a week in this job.) As I move into the next stage of my life, please wish me luck; it will be hard to match the education and support that I have received during my time at Taylor'd Ergonomics!



Karen

PS from Carrie: I'd have to agree - in 1996, I would not have expected that Karen and I would still be working together more than 20 years later. I know that she is going to revel in this next chapter of her story, and we at Taylor'd Ergo will continue to explore new territories.

Karen, I wish you the very best of luck, and I hope we stay connected throughout the next couple of decades, at least.

Missed our blog?

Here's what we've been talking about lately:

- Ergo and work in the cold
- Two similarities between teaching, and practicing ergonomics
- What our team gained by participating in the Canadian Ergo conference

We are reducing the frequency of our newsletters, and publishing more frequent e-news/blogs. Just ask to be added to our list!

If you change jobs, please let us know, and tell the next person about us. Otherwise, we'll lose touch with both you, and your company.

Free ergo interns

Fanshawe College's Advanced Ergo Studies program requires the graduates to complete an 8-week unpaid internship. If you're interested, please contact Allison at astephens@FanshaweC.ca. Postings will be in January, for the May-June internship.

If you'd like to hire us to select, train and mentor the intern, please contact carrie@taylordergo.com.

Need a speaker?

One of our 2019 goals is to speak at more networking events. If your professional association (HR, Safety, Engineering) is looking for speakers, please consider us! We'd be happy to create a presentation on any "ergo" topic. Recently, we've presented on:

- Best practices for outdoor workers (And also on developing and training on best practices in general)
- Ergonomics and obesity
- Solving the most unsolvable MSD hazards



Shopping at Taylor'd Ergo

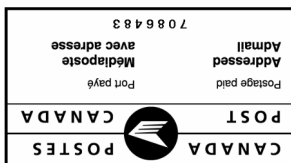
1. Register for any of our **2019 workshops** at www.taylordergo.com/workshop/.
2. Getting an office ergo assessment has never been easier. you can now “order” an **office ergo assessment** completely online, from our store at www.taylordergo.com/store/.
3. **Need in-house ergo training for your employees?** Our hands-on, skill-based one-hour “face-2-face” sessions (driver, office, industrial, or lifting) can be provided for as little as \$275/group (4 sessions in one day), plus materials (\$5 per person), and mileage. We offer similar, 2-hour sessions for supervisors, JHSCs, and outdoor workers. Call, or find more info under the “training” tab at www.taylordergo.com. You can authorise this training through our store.
4. Looking for **posters** to remind employees to stretch, lift safely, or adjust their office or vehicle workstation? Our professionally-drawn graphics will meet your needs, economically! (\$35 for 10 posters)
5. Need **“ergonomic” prizes** to give away for a wellness fair or ergo contest? We can sell you travel mugs, water bottles, jar openers, tape measures, and more....we offer items ranging in price from \$3 to \$10 each. (Need volume pricing and shipping? Please contact our office.)
6. Elevate your safety program’s focus on ergonomics in 2019—purchase a one-year **ergo awareness package**. For \$495, we’ll provide you with 12 slide shows (5 slides each, on a variety of ergo topics), 52 “ergo thoughts”, and 50 pages of handouts (articles and puzzles) on a wide range of topics. The materials are “stamped” with your logo, providing a customised way of communicating important material to your employees in an engaging way. Materials may be printed and displayed, or distributed electronically.
7. Our 2019 **ON-SITE ERGO** program is better than ever—please contact carrie@taylordergo.com for a presentation that you can pitch to your manager. (This program provides everything you need to implement an ergo program at your facility, at discounted rates.)

C O A W A R E N E S S E E
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Search to find all of the words that are printed in bold, blue text, above. Note that “ergo” can be found multiple times, but “ergonomic” is found only once.

The leftover letters, in order, provide a response to those who suggest that ergonomics is just plain common sense.

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