

"Treesigners" -- Tree-Shaped Designers

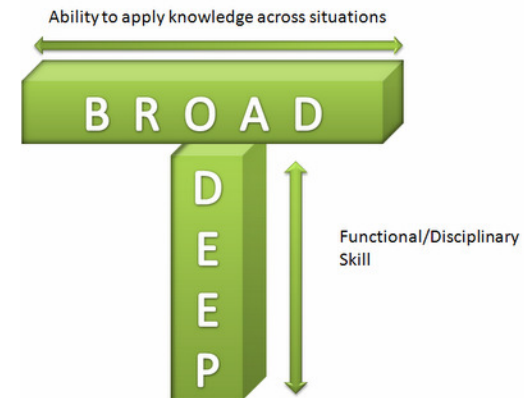


Steve Mann, (Eng.+ArtSci+Forestry, UofT)

2013 December 5, 10:30am, Keynote Address, eLeo Symposium, OCAD University

Acknowledgements: Thanks to S. Diamond (Banff 2002!!!) and T. Barker for invitation... Ongoing

T-Shaped Skills and T-Shaped Designers

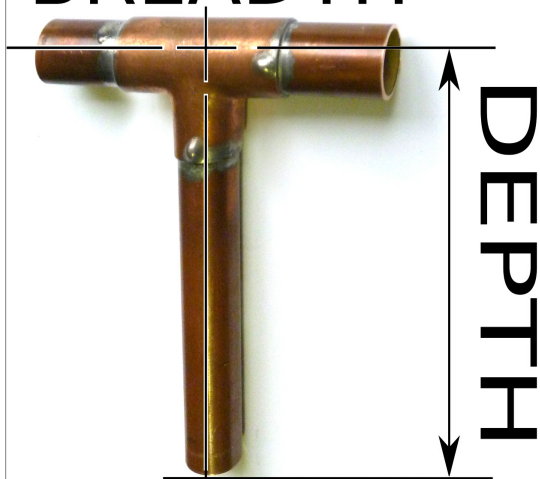


Conceived by David Guest in 1991

[*"The hunt is on for the Renaissance Man of computing,"* The Independent, September 17, 1991.]

Popularized by Tim Brown, CEO and president of IDEO

BREADTH

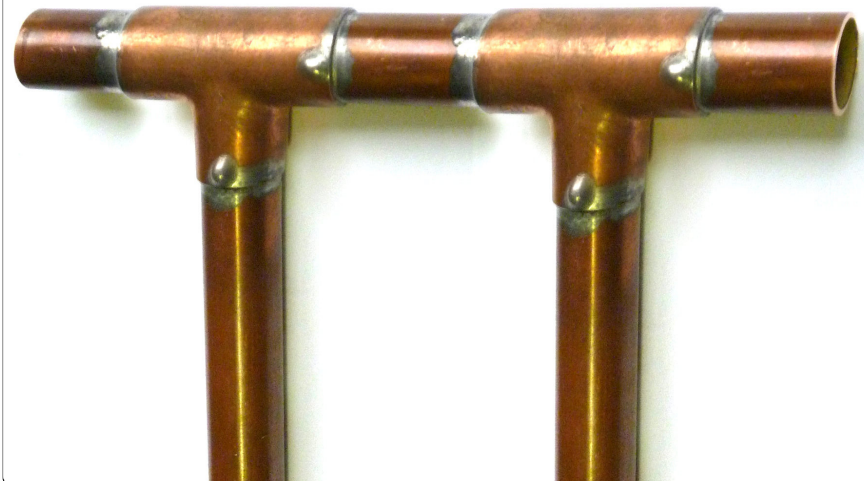


Tee-Shaped Skills, and Tee-Shaped Designers.

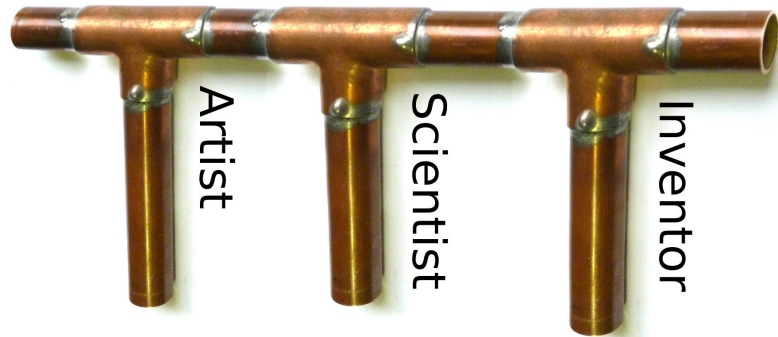
Creativity Flows!

S. Mann
2005

Pi-Shaped Design Team, ... University as a design factory.
Buy and sell people like commodities: assemble for productivity.



Could we re-create Leonardo da Vinci with a team of 3 people?
It would be like composing a symphony orchestra by committee!



Let me introduce something I call the *-shaped designer.
The "*" symbol in UNIX is a symbol for anything
Shapeshifters -- -- Any-Shaped Designers...

The X-Shaped Designer

Introduced by Rooke&Torbert. 2005. Refined by Smith 2008.

- I-Shaped 36% of designers: 1 area of speciality.
 - T-Shaped 30% of designers: Broad + Deep in 1 area.
 - H-Shaped 11% of designers: 2 areas of speciality.
 - X-Shaped 03% of designers: "Me" at the center.
Art, Science, Engineering, and Business.
- Rooke, Torbert, and Smith define X-Shaped People as loners and sociopaths.

Allege that X-shaped people are not a good fit for
Western society!

[Harvard Business Review 2005, Interkonnections 2008.]

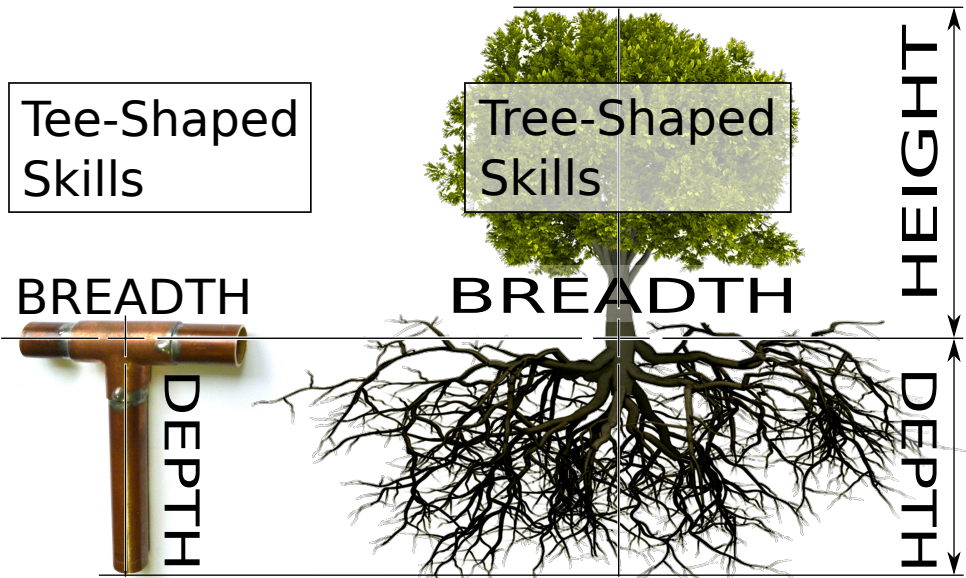
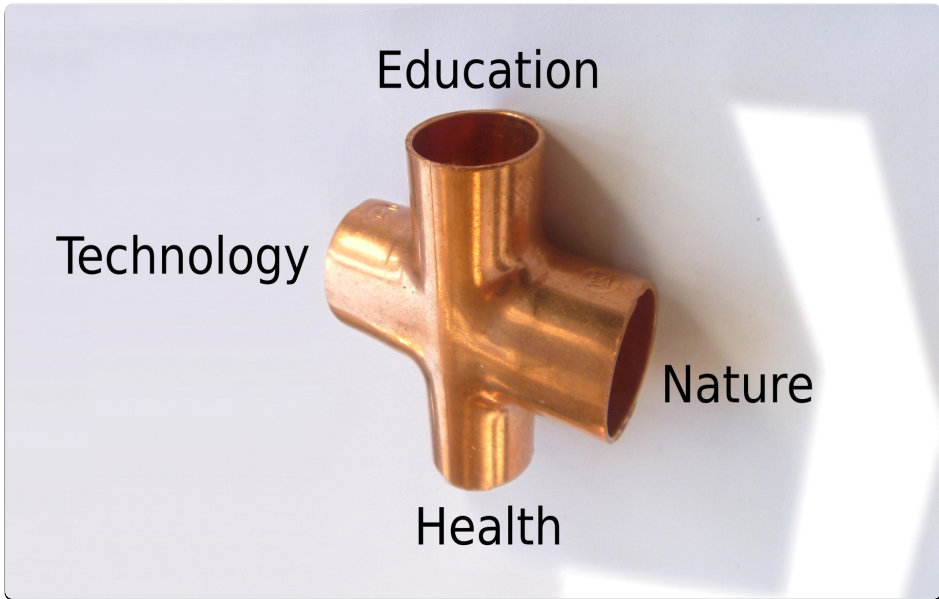
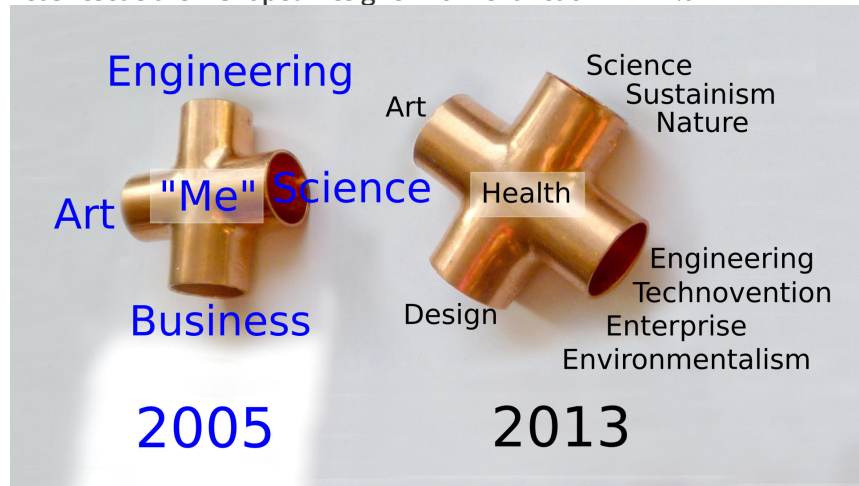
Collaborative effort to "revive" the X-Shaped Designer:
T. Barker, S. Diamond, and S. Mann



"Cross fittings" are useful for connecting work flow among people



Let's rescue the X-Shaped Designer from extinction -- X2.0



To cite this diagram: "Tree-Shaped Designers", by Steve Mann, e-Leo Symposium, Keynote Address, 2013 December 5th, Toronto, Ontario, Canada. Tree image adapted from Shutterstock Image ID: 65729302 by Orla

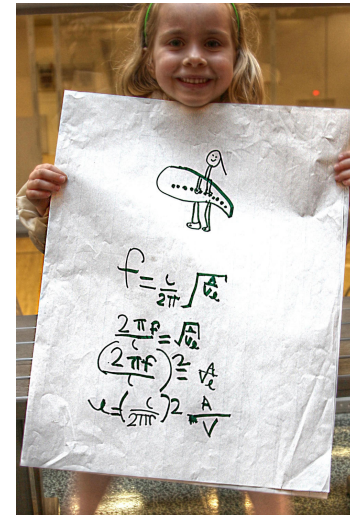
T inquiry and Praxistemology

Educational framework for Tree-Shaped Designers

Praxistemology = Praxis of Existential Technology: Self-determination, Authenticity, ...

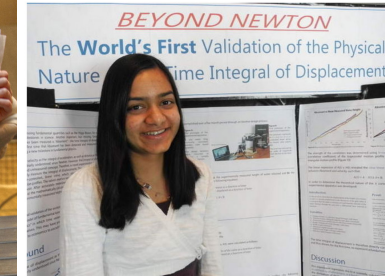
T inquiry = Tinkering as a form of Inquiry: Maktivism...

Grant proposals, ongoing collaboration, etc..



14-year-old from Oro-Medonte sets her sights on Isaac Newton's theories

By ROBINA SIKI, CHRIS MCKEL & TIM
Tuesday, March 26, 2023 6:45:03 EDT PST



Fourteen-year-old Maya Burhanpurkar of Oro-Medonte has come up with a method of measuring the time integral of displacement and developed a project that proves it has a significance. She will be competing at the Intel International Science and Engineering Fair in Phoenix, Ariz., in May ROBERTA BELL - THE PACKET & TIMES

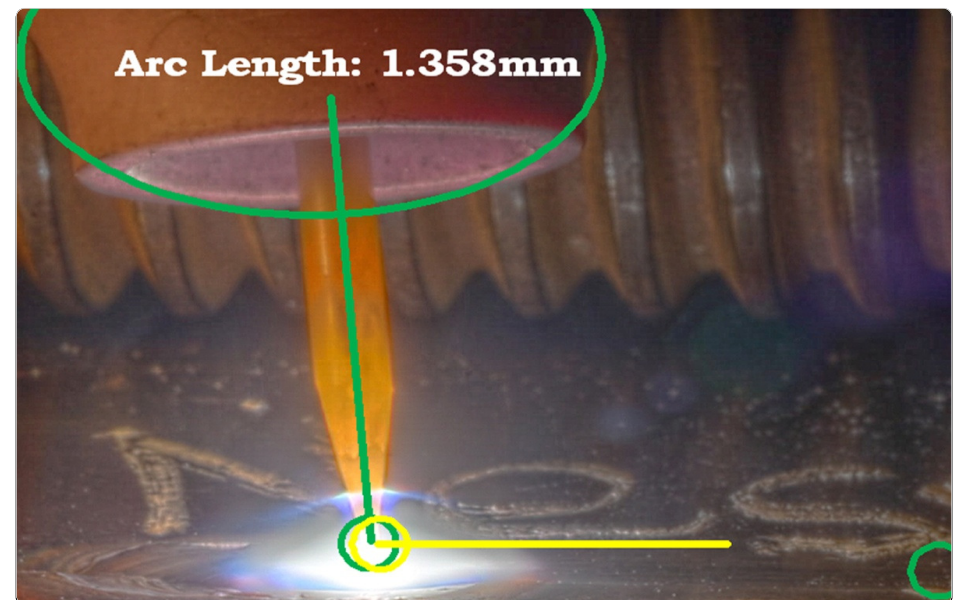
For more than 300 years, the base of fundamental physics laid by Isaac Newton has remained more or less unchallenged.

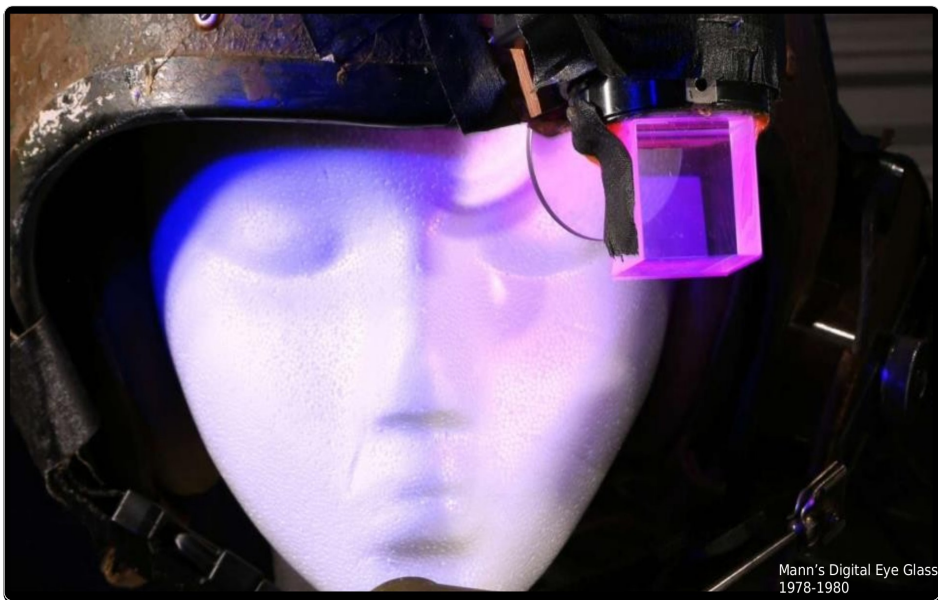
Then Oro-Medonte's 14-year-old Maya Burhanpurkar looked into it.

Until now, scientists have only really been considering derivatives of distance, as outlined by Newton, said Burhanpurkar, who has come up with a project validating the last fundamentally unknown quantity in his model.

"Distance, velocity, acceleration — those are all things we're able to measure, but the integral of displacement is something that hasn't ever been investigated before."

WearComp/WearCam... When I was 4 years old...





MannGlas 1980



SpeedGlas 1981

(acquired by 3M in 2004)



Speedglas™

Quantigraphic camera promises HDR eyesight from Father of AR

Chris Davies, Sep 12th 2012 [Discuss \[1\]](#)

[+1](#) 6

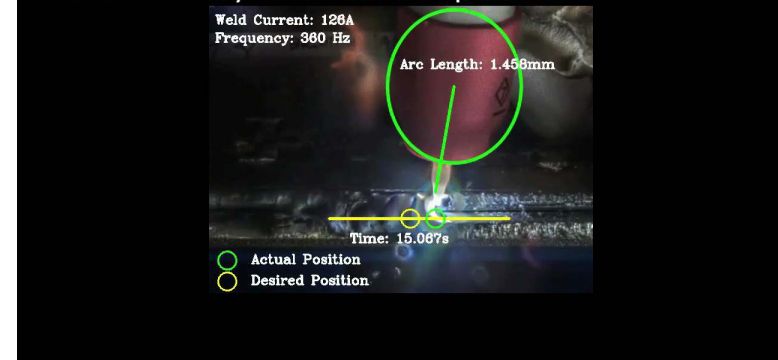
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Digital Welding Glass to help people SEE BETTER!...

Augmented Reality in Quantigraphic Lightspace and Mediated Reality with remote expert



“The first report of digitally combining multiple pictures of the same scene to improve dynamic range appears to be Mann.³” — M. A. Robertson et al.

Journal of Electronic Imaging / April 2003 / Vol. 12(2) / 219–228

References

1. S. Mann and R. W. Picard, “Video orbits of the projective group: A simple approach to featureless estimation of parameters,” *IEEE Trans. Image Process.* 6(9), 1281–1295 (Sep. 1997).
2. C. W. Wyckoff, “An experimental extended exposure response film,” in *SPIE Newsletter*, pp. 16–20 (June/July 1962).
3. S. Mann, “Compositing multiple pictures of the same scene,” *Proc. 46th Annual IS&T Conf.*, Boston, MA, pp. 50–52, May 9–14, 1993.
4. S. Mann and R. W. Picard, “On being ‘undigital’ with digital cameras: Extending dynamic range by combining differently exposed pictures,” *IS&T’s 48th Annual Conf.* Washington, D.C., pp. 422–428, May 7–11, 1995.

United States Patent 5,828,793

Mann

[54] METHOD AND APPARATUS FOR PRODUCING DIGITAL IMAGES HAVING EXTENDED DYNAMIC RANGES

[75] Inventor: Steve Mann, Cambridge, Mass.

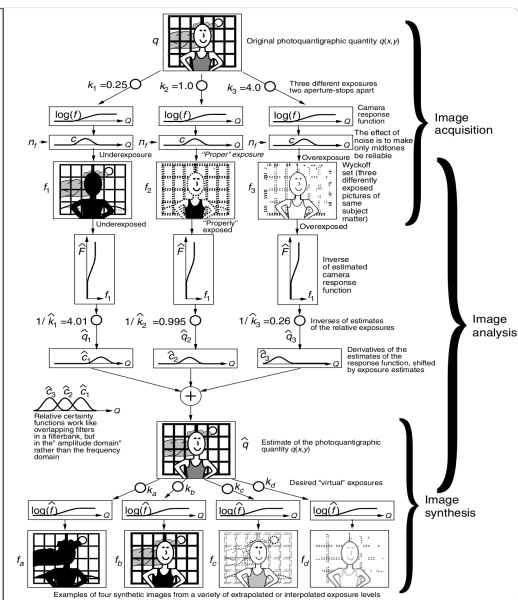
[73] Assignee: Massachusetts Institute of Technology, Cambridge, Mass.

[22] Filed: May 6, 1996

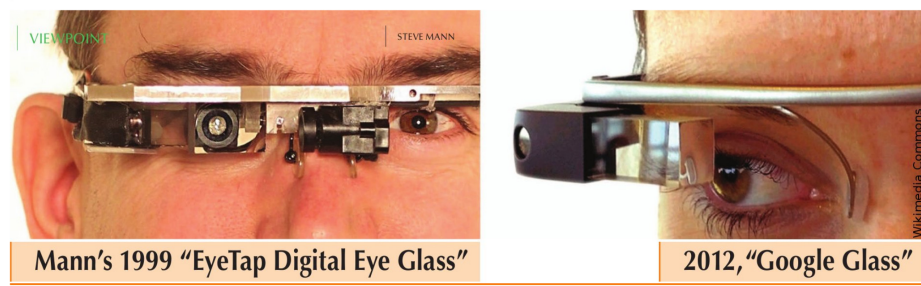
OTHER PUBLICATIONS

Mann, Steve; “Compositing Pictures of the Same Scene,” Massachusetts Institute of Technology, Cambridge, MA 02139.

Mann, Steve; “Lightspace,” MIT Media Laboratory, Information and Entertainment Systems Group, Dec. 1992.



Founding of the MIT Wearable Computing Project: Early 1990s

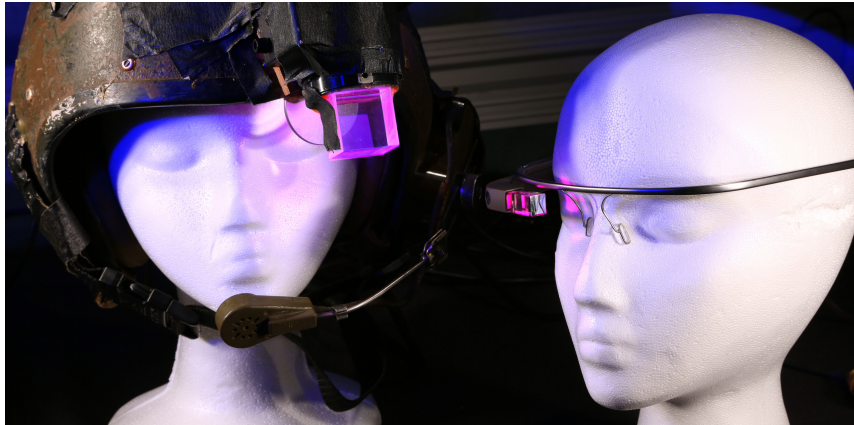


MannGlass 1998 (15 years ago):



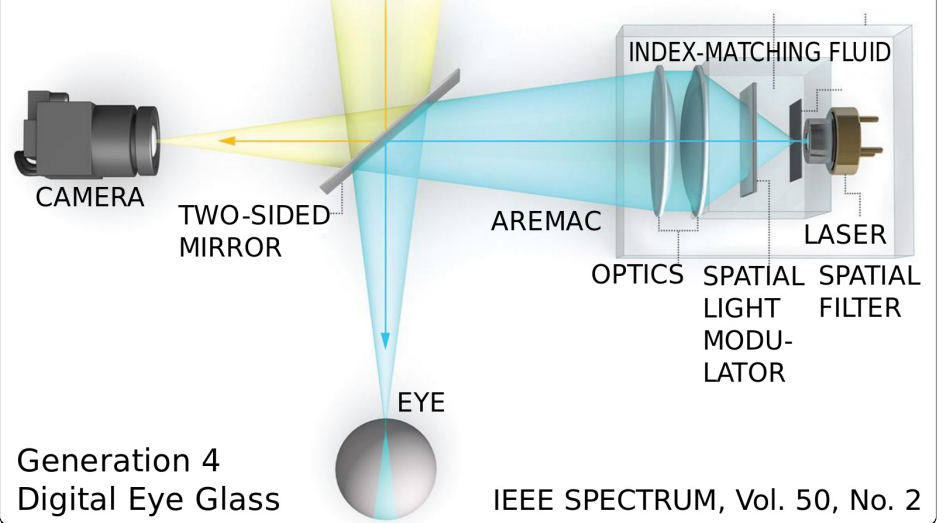
Thin strip of metal wraps around the head; No hinges: 1-piece construction.

35 years of Digital Eye Glass

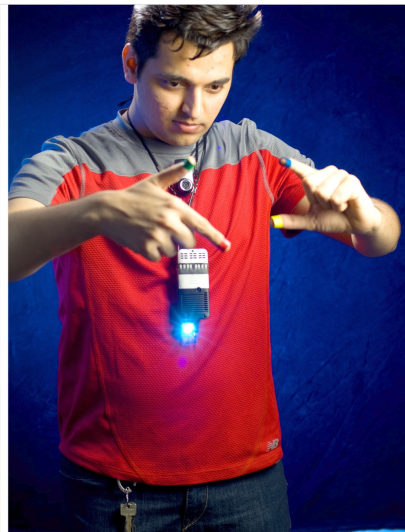


MannGlass 1978 and GOOGlass 2013
Both of these are Generation-1 DEG

The EyeTap Principle



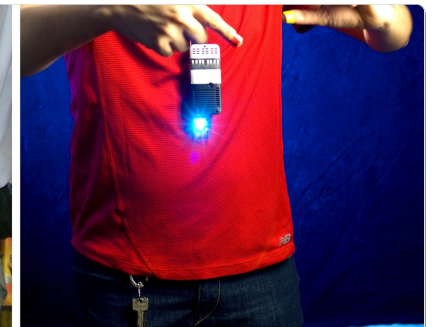
Mann 1998



Mistry 2009



Mann 1998



Mistry 2009





Many inventions come from research labs.

But WearComp, DEG, SixthSense, HDR, etc., are inventions that came from my everyday life.

In this respect these technologies are very much **in and of the real world**, not just the lab!



IEEE

*Advancing Technology
for Humanity*

The world's largest professional association
for the advancement of technology

Hunched over a desktop metaphor.



<http://gokaleo.com/>



Hydraulophone



Hydraulophone



Toronto: Home of the world's largest hydraulophone!!!

- Main centerpiece in front of landmark architecture site;
- Water conservation: sophisticated recirculation system;
- Permanent public art installation open 24 hours a day.



Universal access: Age, Ability... Outdoor Classroom: Forest of Tree-Shaped Designers! Alumni news

CATHY MCFEE: CNIB OPENS INNOVATIVE OUTDOOR CLASSROOM FOR CHILDREN

BY SARAH FABBRI

A young boy in a playground giggles when he discovers that a special water fountain he is playing with makes different sounds when he moves his fingers – like a keyboard. The boy is blind and he's playing on something called a hydraulophone which is helping him learn more about the world around him. He's in the CNIB's (Canadian National Institute for the Blind) recently opened Outdoor Classroom in Calgary its first facility of its kind in Canada.

"We have created something that has tremendous meaning for these children and their families," says Cathy McFee, Director of Services and Operations, CNIB – Alberta HWI Division. McFee received her Leadership Development Certificate of Excellence last spring and says her Bariff Centre experience played an important role in the development of the Outdoor Classroom.

The idea for the classroom started more than two years ago when employees at Urban Systems, a Calgary consulting

about developing a sensory playground to better meet the needs of children with vision loss," she says. Currently CNIB Calgary has about 80 preschool children registered with its services.

"We started to ask ourselves questions such as: Who uses this space? How is it used? How does it complement the services of the CNIB program?" says Leighton Ginther of Urban Systems.

There was a lot of enthusiasm and creativity, recalls McFee. "We pulled together an exciting plan. We designed an educational facility where children with vision loss could explore, develop skills, and build confidence in a safe, interactive and accessible environment."

Plans featured a tactile map at the entrance to help children mentally map the outdoor space, a looped pathway system to give children the opportunity to develop their orienteering skills, a xylophone, and a sound bench.



Leadership Development program, *Leading Teams for High Performance*.

During *Leading Teams*, McFee says she had a chance to present the Outdoor Classroom plans to her learning group. "I gained more confidence about how to communicate a plan to our national office, highlighting the benefits and outcomes to the organization. (Also) learned about staying focused, connecting with my own sense of values, and leading others with both purpose and passion."

The national office gave McFee the nod of approval to go ahead with the project.

McFee and her project team then secured additional partners in addition to Urban Systems, including WestJet. The tasks expanded, from creating a fundraising strategy to organizing volunteers.

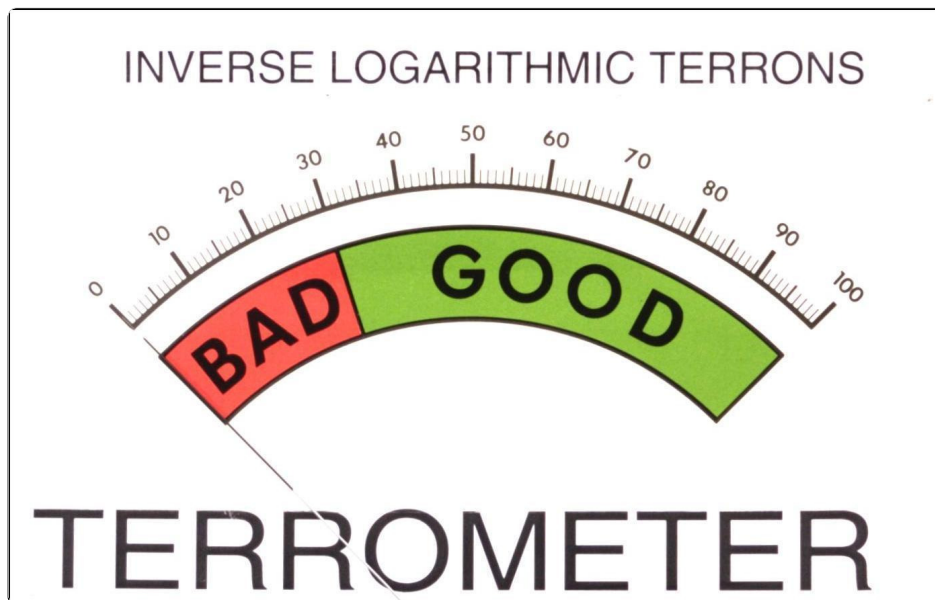
"I learned about facilitating a new team that involved both

for nonprofit organizations to be competitive and successful you need to be innovative and mobilize every sector of society."

On October 3, 2008 McFee's shared vision became a reality and the CNIB Outdoor Classroom officially opened. The most memorable moment for McFee was watching several of the young children with vision loss engaged in play with the many components of the Outdoor Classroom.

"One very small child stood quietly – head bowed, eyes closed, tiny hands grasping onto the smooth xylophone bars – enjoying the calming vibrations of sound as his father delicately struck the instrument," McFee says.

McFee says she is grateful for the support she has received along her 10-year learning journey, one made possible thanks to the generosity of others. "I happened because of the Centre's scholarships for non-profit leaders and I want to express my gratitude and appreciation."



Pierre Bataille with Terrometer



Previously unpublished work...
 Body of work: SeatSale, Griefcase, DECONference 2002, etc..



Conclusions: "Treesign"

- Both rhizomic AND deeply-rooted;
- A "Forest" of Treesigners!
- Create new fields or new BRANCHES of existing fields...
- Centre for Nature+Tech.+Health; Join me in grantwriting...

For more information, see: <http://eyetap.org/publications/>

•WearComp: http://www.interaction-design.org/encyclopedia/wearable_computing.html

•Spaceglasses: spaceglasses.com