Connecting With Your Audience
DELIVERING YOUR BEST

John Bandler, Rachelle Ho, Michelle Ogrodnik,
and Daniel Tajik

Presented via Zoom at
McMaster University, February 18, 2021

ATTENDEES PLEASE:

THIS MEETING IS BEING RECORDED

CAMERAS OFF ALWAYS

MICROPHONES MUTE
UNLESS ASKING QUESTION

“If I am to speak for ten minutes, I need a week for preparation; if an hour, I am ready now.”

—Various historical figures

Bandler and Kovacevic, 2017

“Do you dread presentations? Don’t let yours be one of them.”

—John Bandler, 2020

Bandler, 2020

“Do you dread Zoom presentations? Don’t let yours be one of them.”

—John Bandler, 2020

Bandler, 2020

Speakers

Photo: Beth Bandler

John Bandler

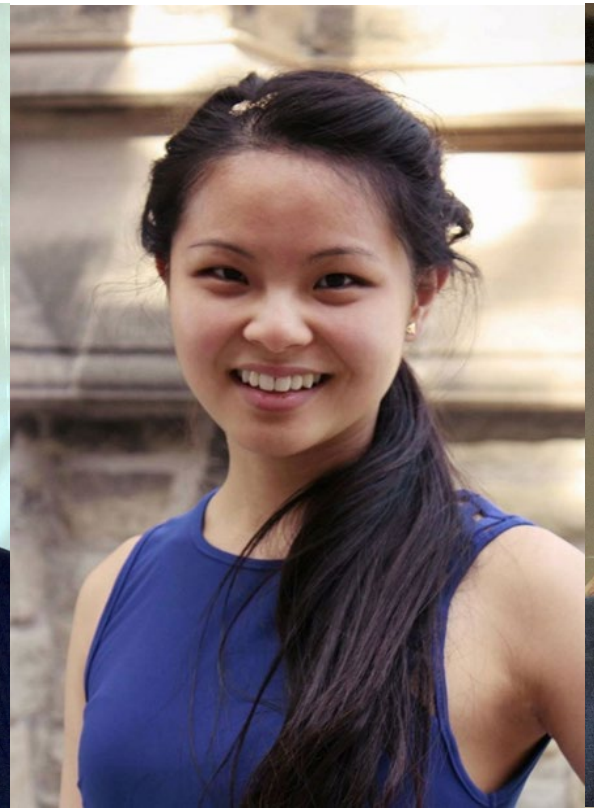
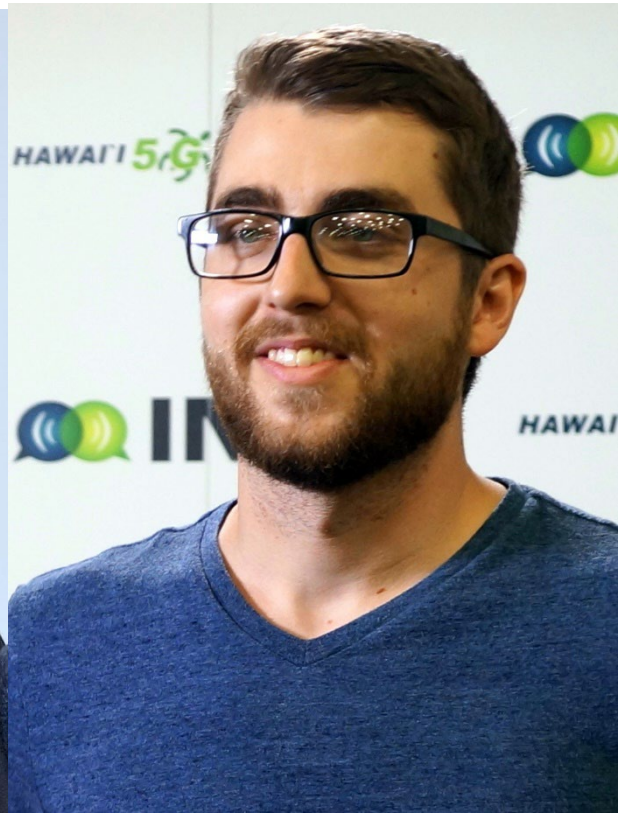


Photo: Lin Ho

Rachelle Ho

Photos: John Bandler

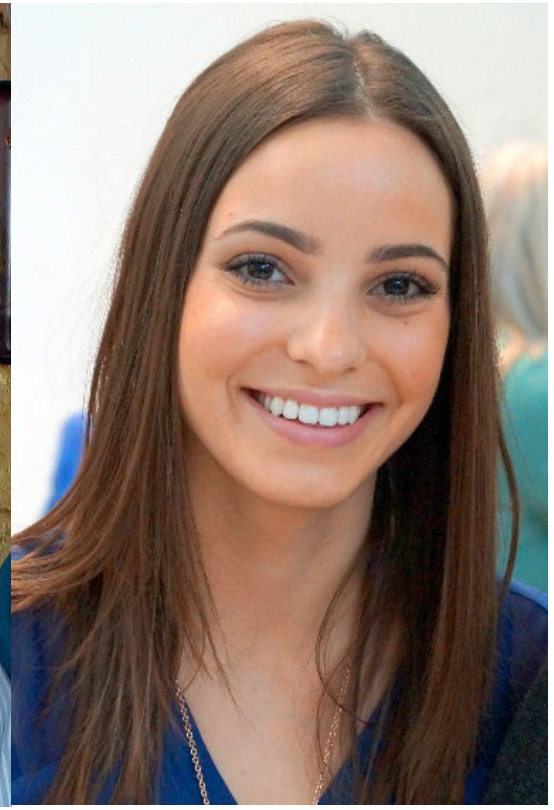
Michelle Ogrodnik



Daniel Tajik

Bandler, 2020

Special Acknowledgements



Photos: John Bandler

Erica Dao

Erin Kiley

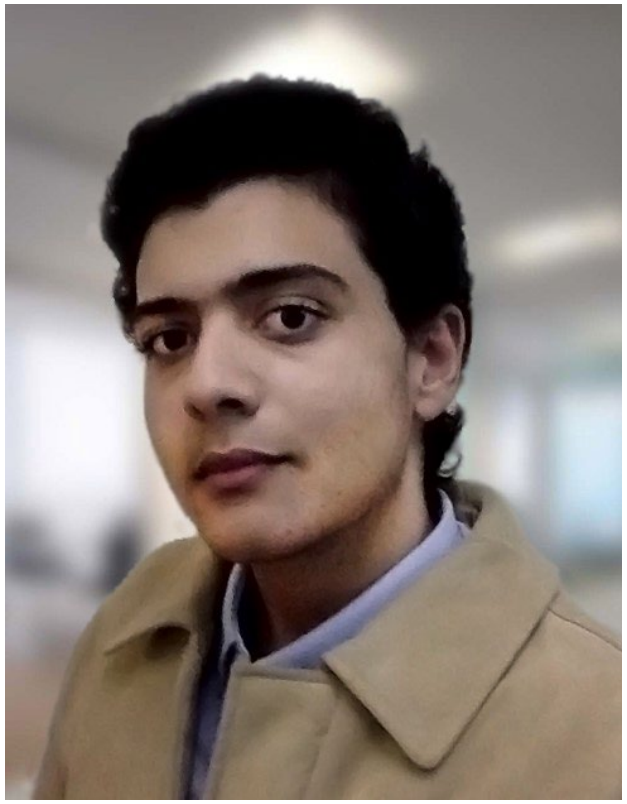
Ana Kovacevic

Bandler, 2020

Our 3MT® Guest

Aline Eid is a PhD candidate in Electrical Engineering at Georgia Tech, receiver of 16 awards during her masters and PhD studies, inventor in 4 patents, and author/co-author of more than 25 conference and journal papers. Her goal is to develop the next generation of 5G/mm-wave-powered consumer devices.

Aline Eid
Ph.D. Candidate, Georgia Tech



Our 3MT® Guest

Mahmoud Wagih is a researcher and PhD candidate at the University of Southampton (UoS). His research is on wearable antennas and RF energy harvesting. He received the Best Student Paper Award at IEEE WPTC'19, Best Oral Presentation at PowerMEMS'19, and the 2nd Best 3MT® at the IEEE Microwave Week'20 and at UoS'20.

Mahmoud Wagih

Ph.D. Candidate, University of Southampton

Zoom Meeting Attendee Display Suggestions

avoid virtual backgrounds

“Hide non-video participants”

in gallery view, side-by-side mode, scale speaker & slide windows by moving the partition between them left-right

Bandler, 2020

Acknowledgements

Peter Aaen, Robin Aiello, Gregory Atkinson, Beth Bandler, Ian Bruce, CFMU, Erica Dao, Tim Davidson, Owen Dawson, Aline Eid, Adam Fortais, Cheryl Gies, Teng Guo, Don Harmsen, Shawn Hercules, Sherry Hess, Rachelle Ho, Jamie Kaushal, Christine Kennedy, Erin Kiley, Ana Kovacevic, Correen Mascotto, McMaster Alumni Association, McMaster Sci GSA, McMaster WISE, Michelle Ogrodnik, Liam O'Leary, Sawayra Owais, Jesse Park, Judi Pattison, Aaron Pitcher, Madeline Simpson, Colette Steer, Daniel Tajik, Megan Vierhout, John Vlachopoulos, Mahmoud Wagih, Jennifer Williams, Canxiu Zhang + many more

Agenda

welcome guest speakers

problems with technical presentations

presentation do’s, presentation don’ts

do’s & don’ts “virtual” vs. “digital” vs. “in person”

3MT® and GRADflix case studies

images, slide composition, title formulation

authenticity vs. theatricality

recollections, experiences

further analysis and discussion

Overview

story, persuasion, bias, trust, impact, fear, first impressions, citation, subtext, metaphor, theatricality, authenticity, articulation, etiquette, awareness, being remembered, slide composition, theme, respecting your audience, the elevator pitch, ethics, admitting setbacks . . .

Bandler, 2020

What Is Not (Explicitly) Covered

poster presentations
exhibitor presentations
regular technical presentations
the elevator pitch
multi-slide presentations
business plans
written presentations
technical papers/reports
thesis presentations

Bandler, 2020

Images, Slides, Clips, Crammed With . . .

fine-print text

multiple tiny images

incomprehensible tables

a tsunami of symbols

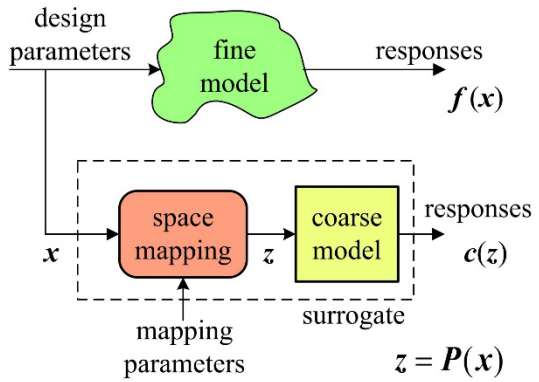
forests of equations

small graphs with illegible axes

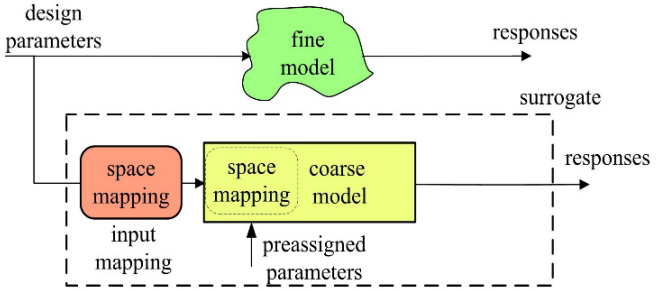
. . . flashing by at blistering speed!

Bandler, 2017, 2020, 2021

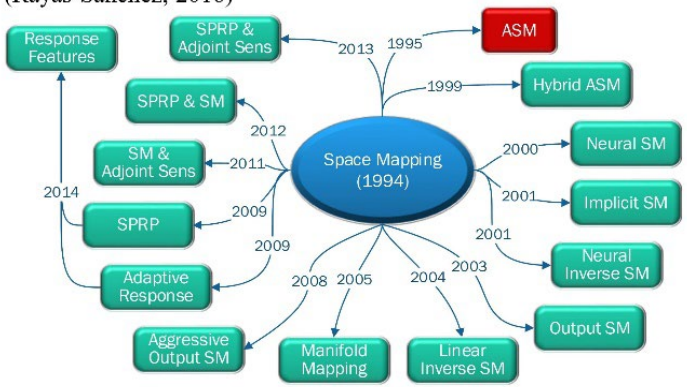
The Space Mapping Concept
(Bandler *et al.*, 1994-)



Implicit and Input Space Mappings
(Bandler *et al.*, 2003-)



Design Optimization Approaches Spawned By Space Mapping
(Rayas-Sánchez, 2016)



Courtesy: J.E. Rayas-Sánchez, ITESO, 2016

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Generalized Implicit Space Mapping
(Koziel, Bandler, and Madsen, 2006)

define the ith surrogate $\boldsymbol{R}_s^{(i)}$ as

$$\boldsymbol{R}_s^{(i)}(\boldsymbol{x}) = \boldsymbol{A}^{(i)} \cdot \boldsymbol{R}_c(\boldsymbol{B}^{(i)} \cdot \boldsymbol{x} + \boldsymbol{c}^{(i)}, \boldsymbol{x}_p^{(i)} + \boldsymbol{G} \cdot \boldsymbol{x}) + \boldsymbol{d}^{(i)} + \boldsymbol{E}^{(i)} \cdot (\boldsymbol{x} - \boldsymbol{x}^{(i)})$$

with $\boldsymbol{A}^{(i)}$, $\boldsymbol{B}^{(i)}$, $\boldsymbol{c}^{(i)}$, $\boldsymbol{x}_p^{(i)}$ and $\boldsymbol{G}$ determined using parameter extraction

$$(\boldsymbol{A}^{(i)}, \boldsymbol{B}^{(i)}, \boldsymbol{c}^{(i)}, \boldsymbol{x}_p^{(i)}, \boldsymbol{G}) = \arg \min_{(\boldsymbol{A},\boldsymbol{B},\boldsymbol{c},\boldsymbol{x}_p)} \left(\sum_{k=0}^{i} w_k \| \boldsymbol{R}_f(\boldsymbol{x}^{(k)}) - \boldsymbol{A} \cdot \boldsymbol{R}_c(\boldsymbol{B} \cdot \boldsymbol{x}^{(k)} + \boldsymbol{c}, \boldsymbol{x}_p + \boldsymbol{G} \cdot \boldsymbol{x}^{(k)}) \| + \right.$$
$$\left. + \sum_{k=0}^{i} v_k \| \boldsymbol{J}_{R_f}(\boldsymbol{x}^{(k)}) - \boldsymbol{J}_{R_c}(\boldsymbol{B} \cdot \boldsymbol{x}^{(k)} + \boldsymbol{c}, \boldsymbol{x}_p + \boldsymbol{G} \cdot \boldsymbol{x}^{(k)}) \| \right)$$

and

$$\boldsymbol{d}^{(i)} = \boldsymbol{R}_f(\boldsymbol{x}^{(i)}) - \boldsymbol{A}^{(i)} \cdot \boldsymbol{R}_c(\boldsymbol{B}^{(i)} \cdot \boldsymbol{x}^{(i)} + \boldsymbol{c}^{(i)}, \boldsymbol{x}_p^{(i)} + \boldsymbol{G} \cdot \boldsymbol{x}^{(i)})$$

$$\boldsymbol{E}^{(i)} = \boldsymbol{J}_{R_f}(\boldsymbol{x}^{(i)}) - \boldsymbol{J}_{R_c}(\boldsymbol{B}^{(i)} \cdot \boldsymbol{x}^{(i)} + \boldsymbol{c}^{(i)}, \boldsymbol{x}_p^{(i)} + \boldsymbol{G} \cdot \boldsymbol{x}^{(i)})$$

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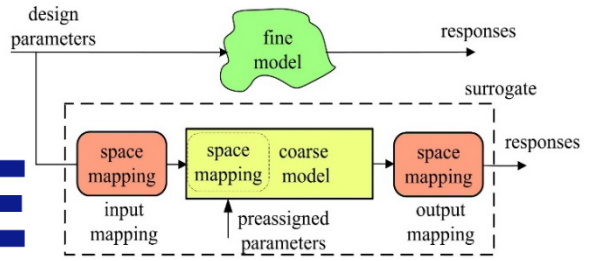
Implicit, Input and Output Space Mappings
(Bandler *et al.*, 2003-)



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Aggressive Space Mapping Optimization
(Bandler *et al.*, 1995-, Madsen, 1995-)

iteratively solves the nonlinear system

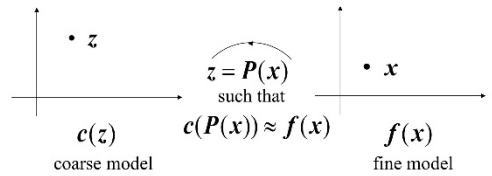
$$\boldsymbol{f}(\boldsymbol{x}_f) = \boldsymbol{0}$$

the quasi-Newton step $\boldsymbol{h}^{(j)}$ in the fine space is given by

$$\boldsymbol{B}^{(j)}\boldsymbol{h}^{(j)} = -\boldsymbol{f}^{(j)}$$

the next iterate

Original Space Mapping Optimization
(Bandler *et al.*, 1994-, Madsen, 1995-)



compute a mapping to match the models (parameter extraction):

$$z = P(x) \equiv \arg\min_z \| f(x) - c(z) \|$$

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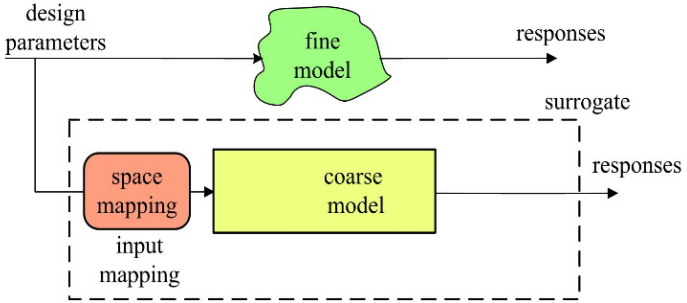
Input Space Mappings
(Bandler *et al.*, 1994-)



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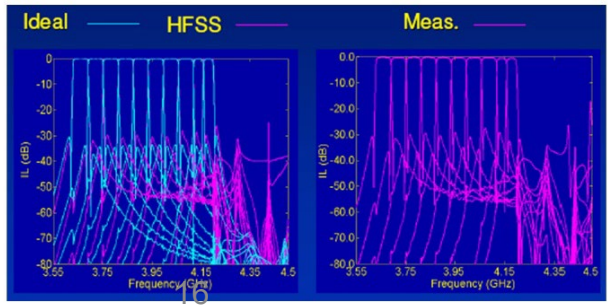
Aggressive Space Mapping Design Of Dielectric Resonator Multiplexers
(Ismail *et al.*, 2003, Com Dev, Canada)

10-channel output multiplexer, 140 variables



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Bandler, 2017

Don’t . . .

be ill-prepared, rush

run out of time

speak in a monotone

seem distant

swallow words

sabotage your name

sabotage your first impression

Bandler, 2020

Are You Presenting . . .

in a physical classroom or auditorium?

to an online meeting?

one-on-one, in person?

one-on-one, online?

to a (recording) camera?

to an **off-camera** interviewer?

to an **on-camera** interviewer?

voiceover?

Bandler, 2021

MAKING YOUR AUDIENCE WANT **MORE** **TAKES PRACTICE, AWARENESS, EMPATHY**

COMPETITIVE PRESENTATIONS FOR BROAD AUDIENCES

e.g., GRADflix, 3MT®, U21 RISE

You Have Just Minute(s)…

…to present years of complex research

…to kindle excitement and curiosity

…to make “them” want to hear more

Bandler and Kovacevic, 2017

What Will You Sharpen?

research communication skills

confidence

ability to engage non-specialists

an opportunity to share your work

ca$h

Bandler and Kovacevic, 2017

What Else Will You Sharpen?

awareness

creativity

creative thinking

Bandler and Kiley, 2017

Cut The Jargon!

extreme jargon	misunderstood	general usage
Fourier transform	spectrum	laser
quantum	functional	frequency
induction	deterministic	cognitive
permittivity	resonator	radiation
permeability	dimensional	gain
Kriging	statistical	Bluetooth
reduced order	femtosecond	metadata
Krylov subspace	rectification	polarized
polynomial chaos	efficiency	surrogate
avoid, reject …	**ensure takeaway**	**a sales job?**

Bandler, 2020, 2021

Do’s and Don’ts

no jargon
avoid acronyms
don’t get stuck in the weeds
use metaphors
include human stories
memorize (authenticity at risk)
give audience tangible takeaways

Bandler, 2016-2018, 2020

Pacing, Staging, Engaging

- 120 words per minute absolute max. No (few) exceptions.
- Start early on slides/images and integrate them with your speech.
- Indicate your qualifications.
- Consider story format: once upon a time . . . and finally?
- Avoid generalities. Be specific.
- Rehearse afresh with people who haven't heard you or about your work.
- Don't be satisfied with kindness.
- Don't look like you're reading a script. Make "eye contact."
- Articulate every single word clearly, including your name.
- *Pause*. The "floor" is yours. You will not be interrupted.
- Be "in the moment:" you'll recover if things go wrong.
- Be kind to judges/viewers: they'll thank you!

Bandler, 2017, 2021

Virtual (& Video) Presentations

- Start early on your title & slide(s); make them work with your speech.
- You may need (a few) captions on your stand-alone slide(s).
- Don’t look at the screen; don’t read your script from the screen.
- Look into the camera.
- Look away only to signal thinking in real time.
- Acknowledge a distraction in real time.
- Sit (stand) away from the camera to reveal hand gestures.
- Be “in the moment:” you’ll recover if things go wrong.
- Connect to your slide(s) with relevant words & gestures.
- *Note: left (right) side of slide is reversed to your audience!*
- Rehearse. Record. Watch. Rehearse. Record. Watch.

Bandler, 2020

Video (&Virtual) Presentations

- Decision: to look at camera, or at off-camera “interviewer”?
- “Listen” to your “audience”! “Listen” to yourself!
- Keep camera at eye level, even when standing.
- Stand, move around, while memorizing script.
- Use Bluetooth mic for freedom of movement.
- Let hands be visible. Be upright, look excited.
- Don’t rush.
- Remember: your backdrop is a prop!
- Compose your space.
- Face and eye movements are important.
- Dress is important. Authenticity vs. informality.

Bandler, 2020

Online Technical Issues and Limitations

medium fraught with
- technical limitations
- physical limitations
- wrong assumptions, surprises

internet bandwidth
camera resolution
microphone quality
presence/absence of a “virtual” background
etc.

Bandler and Kiley, 2020

University of Waterloo GRADflix

“GRADflix is a research communication opportunity for graduate students. Participants will create a video, moving slide show, or animation of no longer than 60 seconds (one minute) in length that describes their research.”

Bandler, 2021

GRADflix Training Session, University of Waterloo

https://www.youtube.com/watch?v=K4dtIsNU-aU

John Bandler With CFMU's Adam Fortais
where we discuss virtual and video presentation do's and don'ts, as well as delivery of scientific research to a broad audience
https://www.youtube.com/watch?v=qYcN8KAqdIM

Bandler, 2021

GRADflix Judging Criteria (Waterloo)

50% Communication

explain complex ideas to non-specialist

…

30% Creativity and visual impact

20% Technical quality

Bandler, 2021

GRADflix Dangers And Don’ts

- too little story
- too many images
- irrelevant images
- needless animations
- attention-splitting content
- overlooked citations?
- fake graphs
- too much “data”
- too many statistics
- too many words (more than 120)
- rushed
- too close to 1 minute

Bandler, 2021

CASE STUDIES

In Our Case Studies Look For. . .

metaphor
believability
purposeful gestures
engaging with the slide or images
dramatic pauses
making it relatable
humor
storytelling
audience takeaways

Bandler, 2021

CASE STUDY:
MICHELLE OGRODNIK
(ONE MINUTE SPEECH)

Michelle Ogrodnik

“Sweat so you don’t forget” (One-minute version)

Recorded February 13, 2018

CASE STUDY:
MICHELLE OGRODNIK
(ONE MINUTE SPEECH)
130 words

Michelle Opens With…

Hi, I'm Michelle Ogrodnik, and I'm (*pause*) a mind-wanderer. Come on, we've all been there. Trying to focus on a presentation but, instead, thinking about that oh-so-delicious donut you're gonna eat next. In fact, university students can spend almost half their time off task.

—Michelle Ogrodnik, 2018

Bandler, 2020

Michelle's Research…

But, our research shows that short exercise breaks during learning can dramatically reduce mind-wandering compared to computer game breaks, or no breaks. Importantly, those who completed exercise breaks in the study immediately had higher quiz scores right after learning, and two days later.

—Michelle Ogrodnik, 2018

Bandler, 2020

Michelle Closes With…

On McMaster's grading scale, this might be the difference between a B and an A. So, with the goal of creating refined, feasible exercise prescriptions for students and teachers, one thing seems certain: students need to sweat so they don't forget. Thank you.

—Michelle Ogrodnik, 2018

Bandler, 2020

CASE STUDY: GRADflix
ANNA MURYNKA
Waterloo 2021 Winner

Anna Murynka, First Place Winner

“Mediums for Self-help”

University of Waterloo GRADflix 2021

Bandler, 2021

affects mental model updating.

Anna Murynka – “Mediums for self-help”: 148 words

Life is full of problems, and our capacity to face them is intimately tied to our mental health. So how do we do that? When we solve a problem, we draw from our past experiences and think of how we've overcome such obstacles before. These memories form our mental models, and we reference them to make predictions about the outcomes of our actions. Those predictions aren't always correct. When we experience errors, we update our mental models. Sometimes this process is hard, sometimes we get help, and other times we're on our own. My research compares how input from different mediums affects mental model updating. Specifically, for self-help purposes. My experiments compare mental imagery, visual imagery, and visual-spatial imagery. Determining which one leads to the greatest improvement in self-efficacy: our belief that we can get over the wall. My goal is to improve mental health resources for everyone.

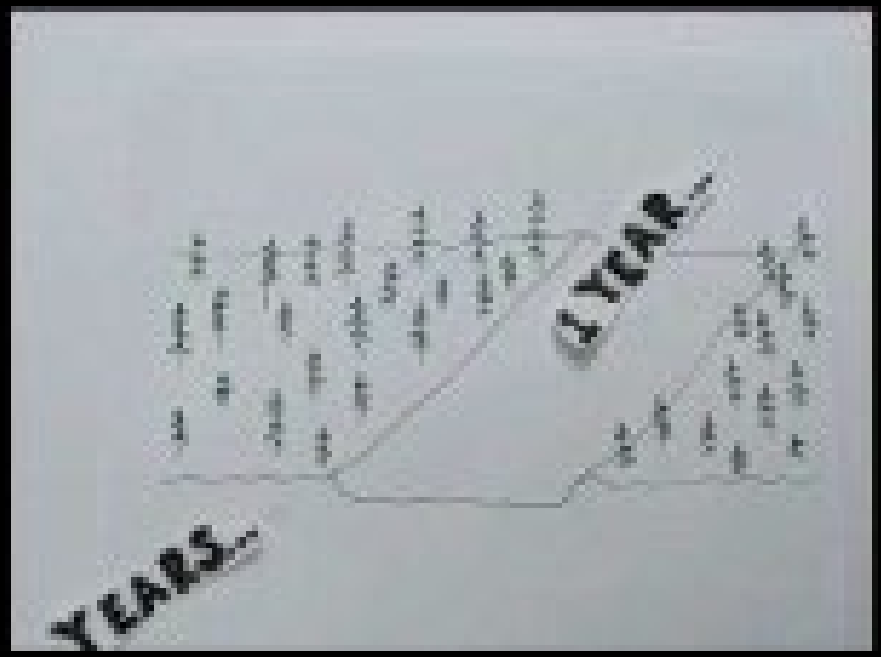
Bandler, 2021

2021 University of Waterloo GRADflix 1st Place Winner: Anna Murynka

Bandler's Remarks:

- entire video feels "almost just right"
- highly relatable and substantive
- meaningful illustrations
- excellent script: complex content made understandable
- illustrations and script content perfectly timed
- engaging: makes you want to watch again
- the lines of script make later study easy: to stop and ponder
- powerful imagery builds confidence in speaker's work
- well-articulated
- (but fast, monotone voice, speaker not visible, no name, no title)

Bandler, 2021


1 YEAR
YEARS

CASE STUDY: VIRTUAL 3MT®
MAHMOUD WAGIH

Mahmoud Wagih, Second Place Winner

“Smart Textiles for Recycling Radio Waste”

IEEE Microwave Week 2020 3MT®

Bandler, 2020


Collecting Radio "Rain"
Mahmoud Wagih
Southampton

Mahmoud Opens With…

(*both hands raised in contemplation*) Imagine (*pause, emphatic)* if all the rain (*pause*) was wasted. (*pause, a quizzing look straight into the camera*) That doesn't sound right? (*emphatic, with gestures of relief*) Thankfully, this doesn't really happen to rain.

—Mahmoud Wagih, 2020

Bandler, 2020

Mahmoud Closes With…

(*gestures to self, emphatic*) My goal is to get you to forget about your batteries. (e*mphatic gestures*) But please (*pause, looks deliberately upward as if at overhead clouds, imploring)* don't forget your umbrellas. (*smiles*) Thank you.

—Mahmoud Wagih, 2020

CASE STUDY: 3MT®
ALINE EID

Aline Eid, Second Place Winner

“A Tarantula’s View of the Wireless 5G Power Web Around Us”

2019 IEEE Int. Microwave Symposium 3MT®


IEEE
IMS
3MT
A tarantula's View of the Wireless 5G Power Web Around Us

Aline Opens With…

(*arms raised in greeting*) Hi, everyone. I am Aline from the Georgia Institute of Technology. (*welcome gesture at slide)* And this is Lucy, the tarantula from the Amazon rain forest. (*pause*) Now (*hands suggesting question*) why have I asked Lucy to join us today?

—Aline Eid, 2019

Bandler, 2020

Aline Closes With…

(*points at slide*) Thanks to this (*emphatic*) we can do away with batteries and their chemical waste. (*gestures to self*) This will make the environment happier, our environment, (*both arms gesture at slide*) and Lucy's. (*smiles*) Thank you.

—Aline Eid, 2019

FIRST IMPRESSIONS

Your Live Audience, Your Live Judges

hear your host's "introduction"
see you "stumble" onto the stage
are biased before your first word
may ignore/dislike your slide
absorb audience reactions
consider relative performance

Bandler, 2020

How Important Is Dress?

Photos: Daniel Tajik, 2017

Bandler, 2020

Photo Credit: José Ernesto Rayas Sánchez, 2017

Photo Credit: Denys Shumakov, 2017

SINGLE STATIC SLIDES: KEEP THEM SIMPLE!

DEVELOP YOUR **SLIDE(S)** FIRST!

Bandler, 2020

DEVELOP YOUR **TITLE** FIRST?

Bandler, 2020

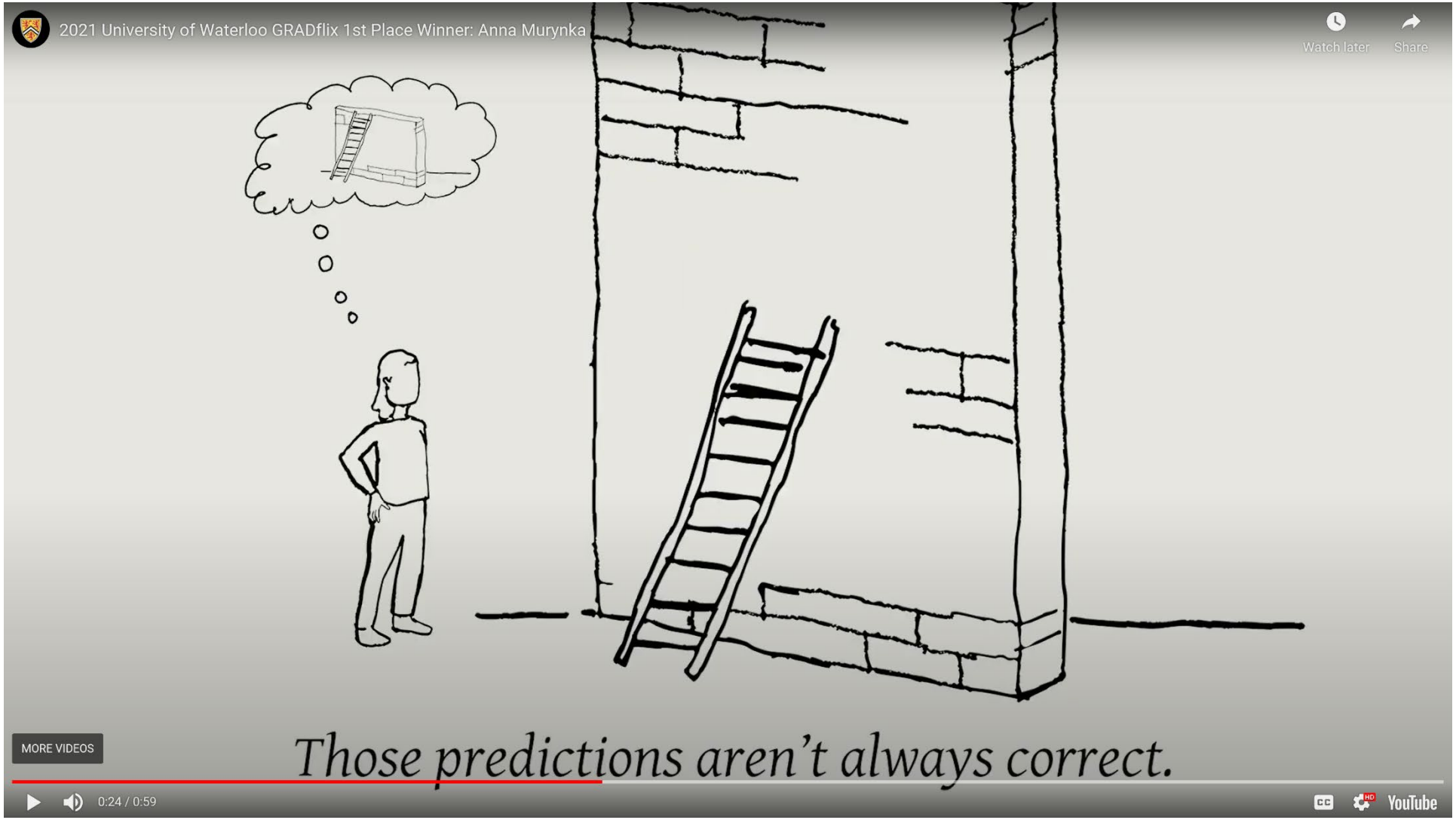
SLIDES ARE NOT DUMPING GROUNDS FOR LAST-MINUTE THOUGHTS, IMAGES, & EXTRANEOUS VERBIAGE

Bandler, 2020

A SINGLE STATIC SLIDE AS FOUNDATION FOR VIDEO IMAGERY?

Bandler, 2021

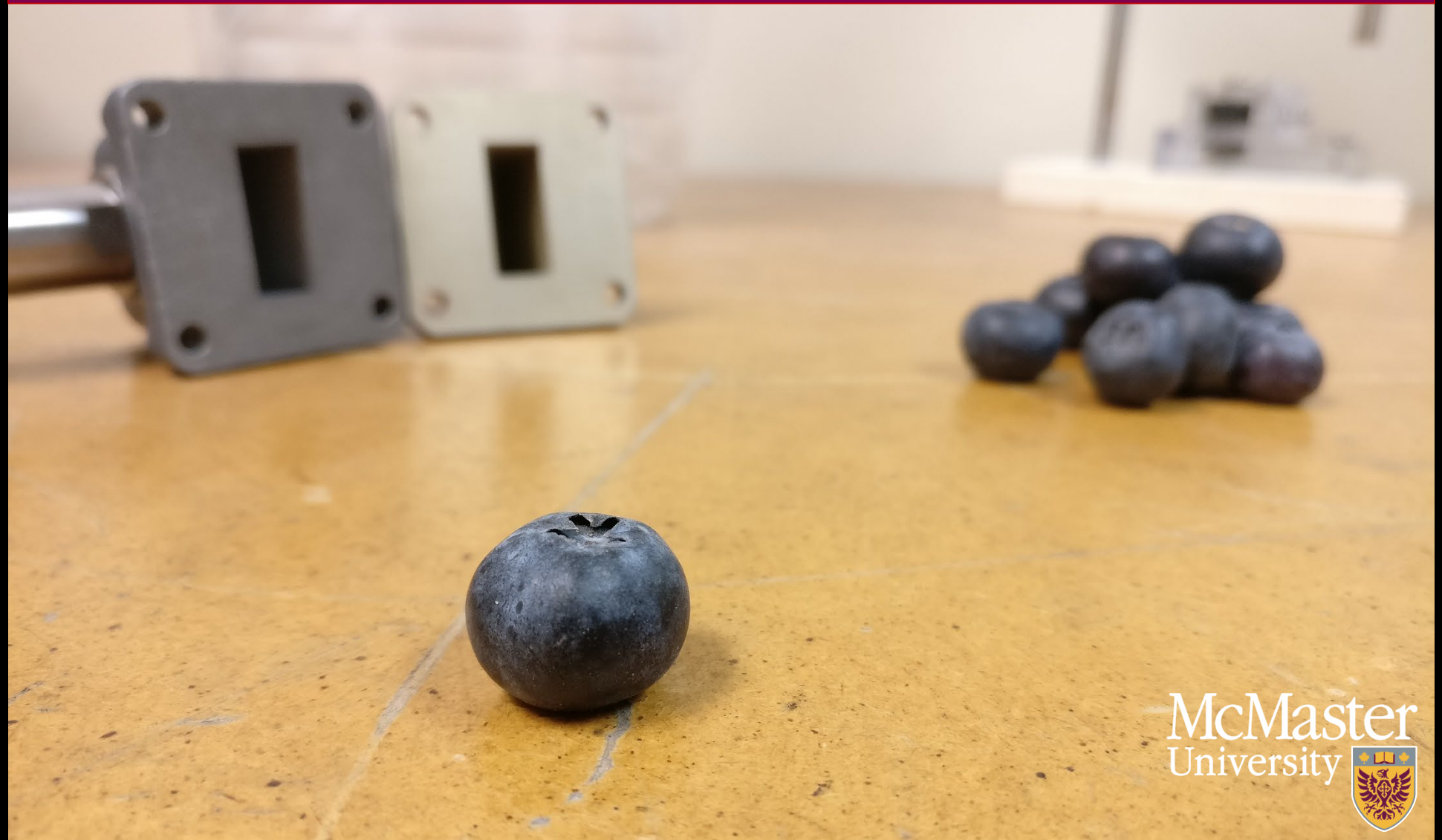
Anna Murynka's Core Image



Bandler, 2021

Microwave Holography:
The Future of Medical Imaging

Daniel Tajik



Sniffing out Weapons with Microwaves

Aaron Pitcher

[Photo Credit: D. Tajik, A. Pitcher]

Brainwave Analysis for Stroke Detection
Canxiu Zhang

Collecting Radio “Rain”

Mahmoud Wagih

UNIVERSITY OF Southampton

A tarantula's View of the Wireless 5G Power Web Around Us

Aline Eid

Photo credit: Aline Eid

Georgia Tech

TITLES:
CATCHY BUT MEANINGFUL!

3MT® Titles: Catchy, Meaningful ...

Sniffing Out Weapons With Microwaves
Aaron Pitcher (2018)
Origami: Unfolding the Future of Engineering
Syed Abdullah Nauroze (2018)
Are We Drinking Pharmaceuticals?
Arif Alam (2018)
Where Does Cancer Begin?
Erica Dao (2019)
Fighting Obesity With Fat
Julian Yabut (2019)

OPENING LINES

Bandler, 2020

3MT® Opening Lines

Occurring with little apparent warning, strokes are a leading cause of disability.

“Have you? Your relatives. Your friends. Ever suffered from a stroke?”—Canxiu Zhang, 2018

The more a person undergoes X-ray scans the greater the risk they will develop cancer.

“X-rays. Cause. Cancer. It’s a little unnerving to think about, isn’t it?”—Daniel Tajik, 2017

Bandler, 2020

3MT® Opening Lines

It is not only hard to contemplate the complete wastage of every drop of precipitation that impacts the earth's surface, it is also implausible.

"Imagine (*pause*) if all the rain was wasted. That doesn't sound right?"—Mahmoud Wagih, 2020

What made it to the headlines as our turbulent year 2020 opened was not the viral pandemic now widely known as COVID-19.

"Recall January 2020. What was the biggest news? It wasn't coronavirus."—Jay Sheth, 2020

Bandler, 2020

CLOSING LINES: BRING YOUR STORY FULL CIRCLE

Anna Murynka, 2021 Waterloo Winner

GRADflix Opening Line

“Life is full of problems, and our capacity to face them is intimately tied to our mental health.”

GRADflix Closing Line

“My goal is to improve mental health resources for everyone.”

Bandler, 2021

Be Authentic

be yourself

be sincere

be personal

don’t “act”

don’t “pretend”

kill your fake “speech mode”

Bandler, 2020

Be Engaging

be empathetic

be approachable

be conversational

be “in the moment”

be memorable

Bandler, 2020

Be Clear

skip jargon

skip mind-twisting logic

keep sentences short, punchy

speak words clean, crisp, clear

Bandler, 2020

Last-Minute Tips

make sure your name is repeatable

make “eye contact” with the audience

be “in the moment” as if in conversation

gesture with open hands

articulate clearly

don’t: fidget, hold hands, swallow words

JOHN BANDLER

IS AVAILABLE FOR GROUP MEETINGS & CONSULTATION

bandler@mcmaster.ca

THANK YOU

McMaster University