

Jon Nakane, Lab Director
Engineering Physics Project Lab

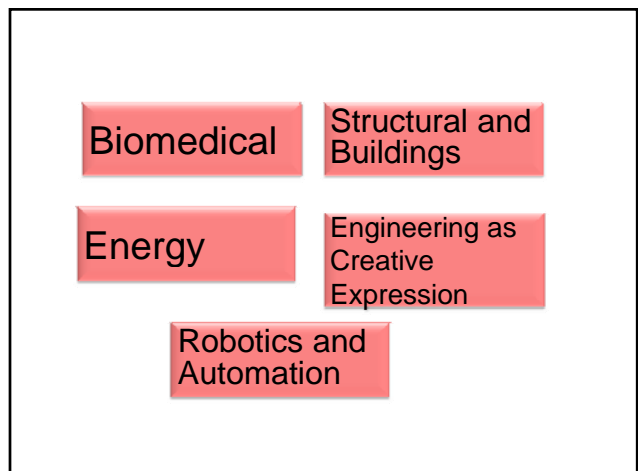
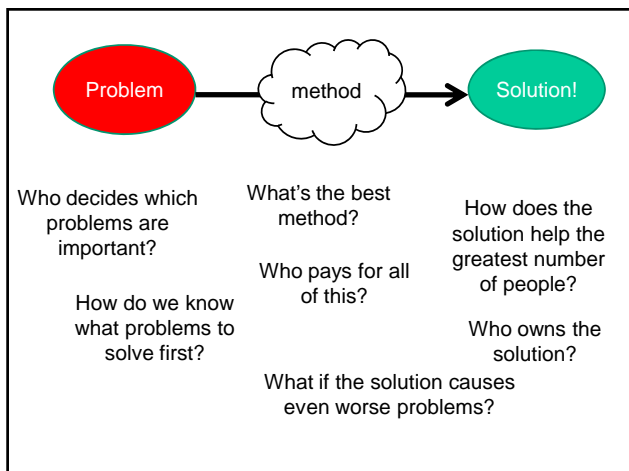
Applied Science & Engineering

For the complete talk + links, google:

ubc jumpstart engineering

What do Engineering students do?

What do they do after they graduate?



Biomedical

Biomedical

- Application of engineering principles and techniques to the medical field



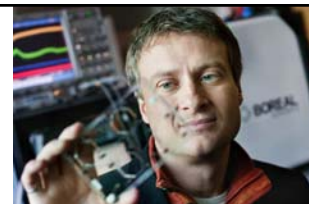
Biomedical

"My job is great because I get to work on a huge variety of exciting projects that could change the face of bone health in the medical field."



Name: Kat Louman-Gardiner
Job Title: Biomedical Engineering Lab Coordinator
Company: Center for Hip Health and Mobility at Vancouver General Hospital

Biomedical

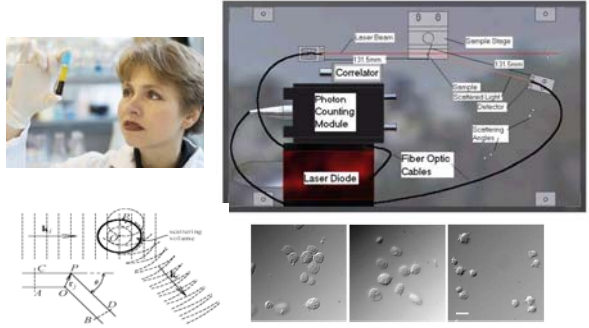


Name: Andre Marziali
Job Title: President and CSO, Boreal Genomics



Biomedical

Name: Elisabeth Maurer
Job Title: President and CTO,
LightIntegra Technology



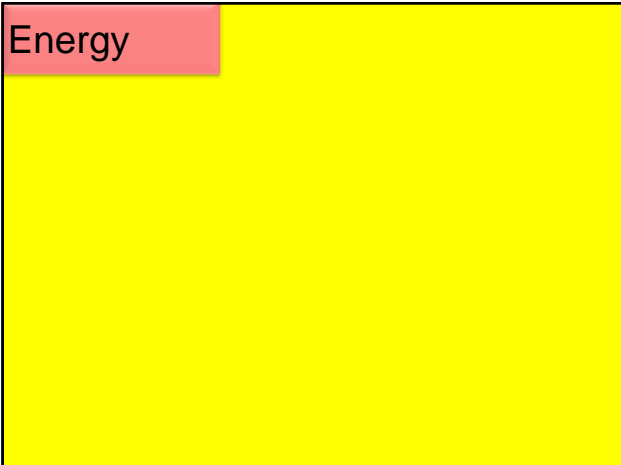
The collage features a central schematic of a laser-based diagnostic system. Key components labeled include a Laser Diode, Photon Counting Module, Correlator, Fiber Optic Cables, Sample Stage, Objective, Camera, and Computer Interface. To the left is a photograph of Elisabeth Maurer, and below the schematic are microscopic images of cells and a technical diagram of a lens system.

Biomedical



The collage features a central screenshot of the LightIntegra Technology website. The website text reads: "Platelets save lives. We save platelets. ThromboLUX™ is a quick and simple diagnostic test for platelet quality and function that will make it easy to screen patients prior to transfusion. Traditional methods of platelet quality testing are unreliable, time consuming, expensive and not used routinely. LightIntegra intends to make platelet quality testing a regular practice in blood banks around the world by making it accessible, affordable, reliable and fast." To the left are photographs of a device's internal circuitry and a diagnostic device with a screen.

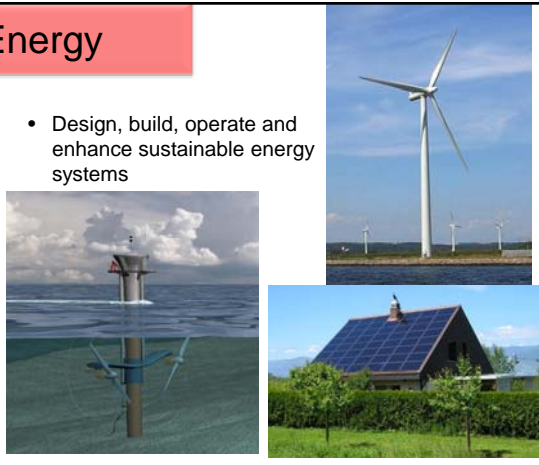
Energy



A large yellow rectangular area, likely a placeholder for content related to the Energy sector.

Energy

- Design, build, operate and enhance sustainable energy systems



The collage features three photographs related to sustainable energy: a wind turbine, a solar panel array on a house, and an offshore wind turbine structure in the ocean.

Energy




Name: Lauren Kulokas
Job Title: Chief Operating Officer
Company: Energy Aware Technology Inc.





"I get to work on something that I feel passionately about and that I have had a hand in developing from the beginning"

Energy



Name: Pulse Energy
Target: Energy monitoring of commercial buildings




Engage occupants through real time energy information.

- Damir Hot** - Entrepreneur and Sales Professional (Vancouver, Canada Area) | Information Technology and Services | 42 shared connections | 1 shared group
- Graham Cunliffe** - Technical Sales Engineer at Pulse Energy (Vancouver, Canada Area) | Design | 9 shared connections
- Lee Wasilenko** - Research Assistant at University of Waterloo (Vancouver, Canada Area) | Renewables & Environment | 26 shared connections | 1 shared group
- Alexi A. Bergeron** - Marketing Coordinator and Communications at Pulse Energy (Vancouver, Canada Area) | Renewables & Environment | 8 shared connections

Energy



2005 – Emanual, the two-wheeled skateboard



Energy

Name: Justin Lemire-Elmore
Company: Founder, GRIN Technology

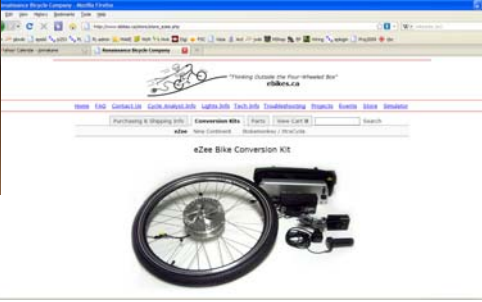

In 2008, rode his electric bike across Canada. Took 30 days. Used less than \$10 in electricity.

Energy



Name: Justin Lemire-Elmore
Company: Founder, GRIN Technology

Started own electric bike store.



The image shows a person in a red shirt standing next to a bicycle. To the right is a screenshot of a website for 'eZee Bike Conversion Kit'. The website features a navigation menu with links like 'Home', 'FAQ', 'Contact Us', 'About Us', 'Lighting', 'Tools', 'Installation', 'Support', 'Sales', and 'Shipping'. Below the menu, there is a search bar and a product image of a bicycle wheel with an electric motor and battery pack attached.

Energy



The image shows a group of people standing on a wooden structure, possibly a bridge or a walkway, at night. Below this is a photograph of a workshop or garage with various tools, equipment, and materials, including a workbench, a table, and a large piece of machinery.

Structural and Buildings



The image shows a large yellow rectangular area, which appears to be a placeholder or a blank space.

Structural and Buildings

- Designing, analyzing and constructing structures



The image shows a modern building with a curved facade and large glass windows, likely a commercial or residential structure. The building is surrounded by other buildings and a street with cars.

Structural and Buildings


Name: John Pao
Job Title: President
Company: Bogdonov Pao Associates Ltd.







- Chief engineer and designer of many buildings in Greater Vancouver and worldwide
- Founding president of the Vancouver Structural Engineers Group Society

Structural and Buildings




Name: Laura Fedoruk
Job Title: Sustainable Building Analyst at Stantec


- Construction techniques
- Materials selection
- Energy and lighting solutions
- LEED certification

Name: Stefan Storey
Job Title: PhD candidate in Sustainable Building Design



Structural and Buildings



Name: Lorne Whitehead
Job Title: Professor, UBC Physics and Astronomy / 3M Chair in Applied Physics Lead, Structured Surface Physics Lab




brightness enhancement film on LCD screens

SunCentral Inc. Building lighting using sunlight

Robotics and Automation

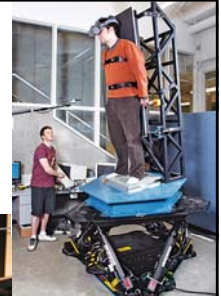


Robotics and Automation

- Robot design, manufacture, application, and structural disposition
- Applications in industry, home and healthcare



Robotics and Automation

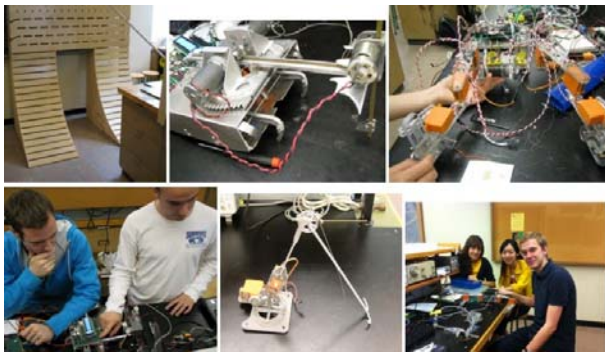


Name: Elizabeth Croft
Job Title: Director, CARIS lab.
NSERC Chair for Women in Science and Engineering



Robotics and Automation

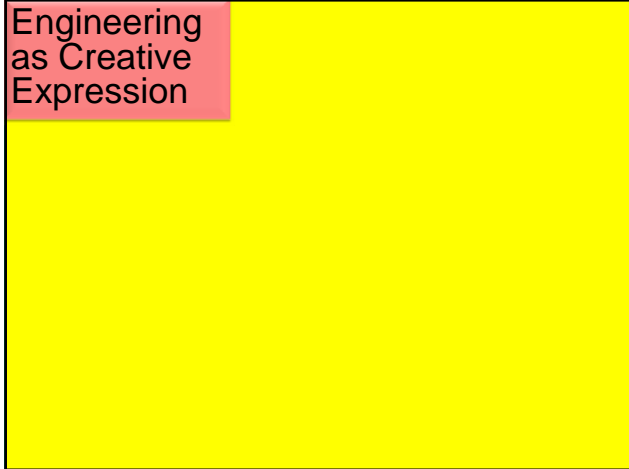
Name: EngPhys 253
Title: hands-on prototyping course for 2nd year students



Robotics and Automation



Engineering as Creative Expression



Engineering as Creative Expression

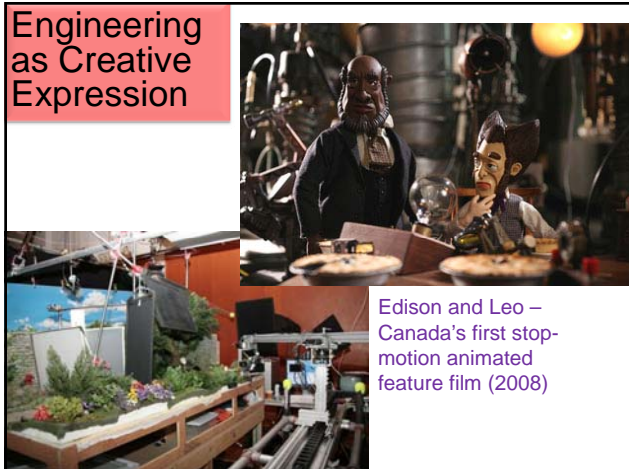


Name: Alex Beim
Company: CEO/Creative Director, Tangible Interaction



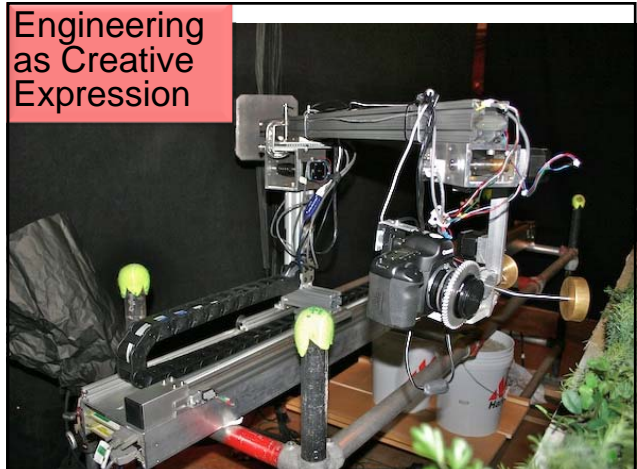
2010 Vancouver Winter Olympics Closing Ceremonies

Engineering as Creative Expression



Edison and Leo – Canada's first stop-motion animated feature film (2008)

Engineering as Creative Expression



Engineering
as Creative
Expression



Engineering
as Creative
Expression

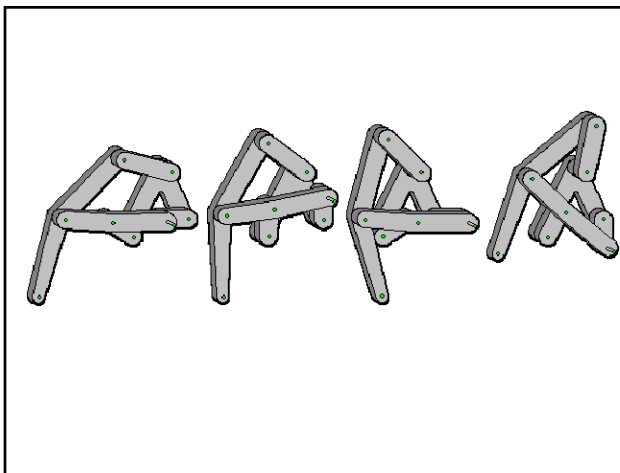
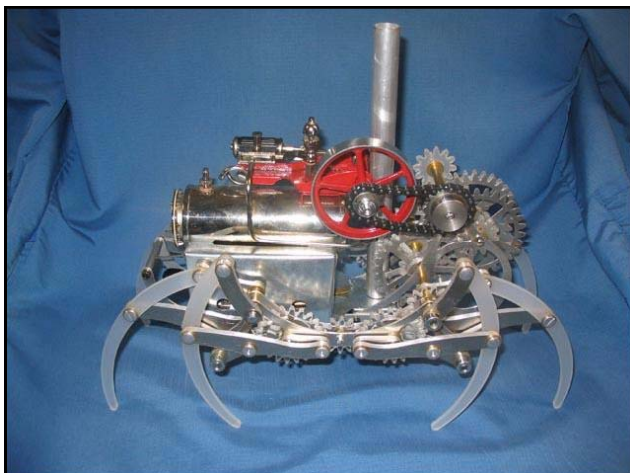
Vancouver Junkyard Wars

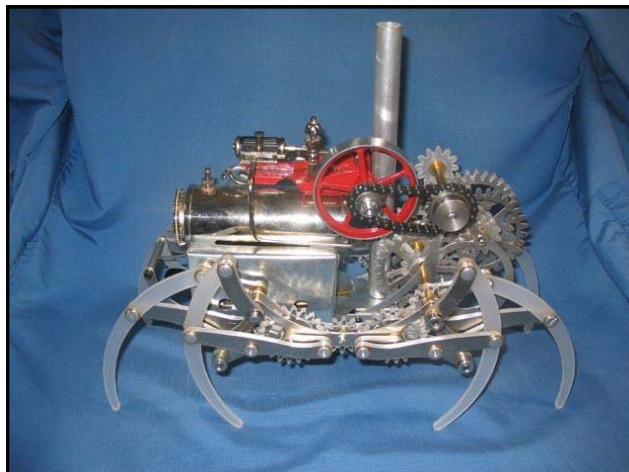
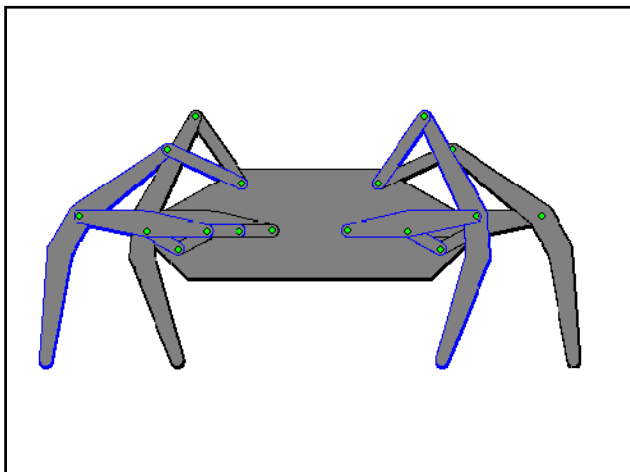
Pumpkin Cannon Test Launch - Vancouver Junkyard Wars 2009

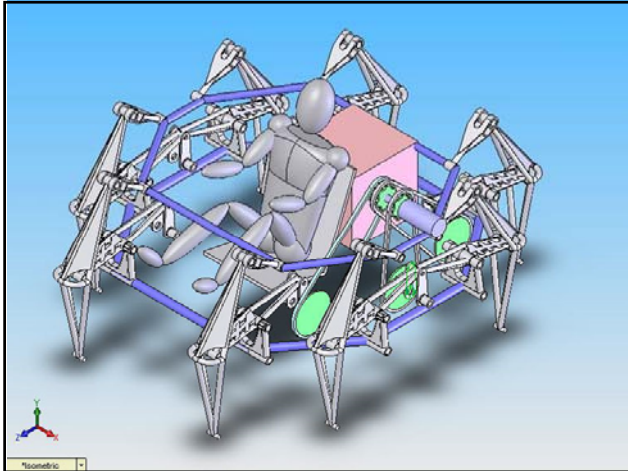
rtvee00 6 videos | Subscribe



Automatic pancake maker - 2002







Engineering as Creative Expression




Name: Jonathan Tippett
Company: Independent Artist/Engineer

Prosthesis – the anti-robot




Engineering as Creative Expression



Name: Charlie Brinson
Company: Engineering consultant

Titanoboa – the 50-ft long electromechanical serpent



Engineering as Creative Expression

The team behind eatART - energy awareness through art

"We make audacious and improbable large-scale kinetic, robotic, and mechanized sculptures that investigate our human relationship to energy use."

How does UBC Engineering work?

Departments and Schools:

- Chemical & Biological Engineering
- Civil Engineering
- Electrical & Computer Engineering
- Materials Engineering
- Mechanical Engineering
- Mining Engineering
- UBC Okanagan Engineering

Non-department Programs

- Biomedical Engineering
- Engineering Physics
- Environmental Engineering
- Geological Engineering
- Integrated Engineering

Common first year for APSC students, then learn about different options throughout the year.

Can also transfer in from other faculties (arts/science) after 1st year.

That's me.

Think of it as an Applied Physics degree :

Math + Physics + Elec/Mech

Reflection Question:

If you could add one feature or program for your cell phone, what would it be?

- what would have the biggest impact on your life?
- what would have the biggest impact on your hometown?



Steve Jobs, in a 1985 interview:

- Q: Those are arguments for computers in business and in schools, but what about the home?
- Jobs: So far, that's more of a conceptual market than a real market. The primary reasons to buy a computer for your home now are that you want to do some business work at home or you want to run educational software for yourself or your children. If you can't justify buying a computer for one of those two reasons, the only other possible reason is that you just want to be computer literate. You know there's something going on, you don't exactly know what it is, so you want to learn. This will change: Computers will be essential in most homes.

Reflection Question:

If you could add one feature or program for your cell phone, what would it be?

a.) what would have the biggest impact on your life?

b.) what would have the biggest impact on your hometown?

**You can always ask me anything:
google:**

**ubc jumpstart engineering
ubc engphys Jon**

THE UNIVERSITY OF BRITISH COLUMBIA



Jonathan Nakane, Ph.D
Lab Director, Engineering Physics Project Lab
Department of Physics and Astronomy
Hennings Building, Room 115
6224 Agricultural Road
Vancouver, BC Canada V6T 1Z1
Tel: 604-822-2110 Fax: 604-822-5324
E-mail: jnakane@physics.ubc.ca
Web: www.engphys.ubc.ca/projectlab