



# Mitchell Odyssey Foundation

Creating Opportunities for Kids in Science, Technology & Mathematics



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## *Odyssey Career Discovery*

**Odyssey Career Discovery** is designed to inspire students to pursue careers in science & engineering:

- *Career Discovery translates science interest into real world accomplishments.*
- *Students witness first-hand what they can achieve with a science education by visiting organizations that research, develop & market innovative technology.*

Goal is to develop **Career Discovery Network** of Host Organizations:

- ***Focus on leaders & innovators in each sector***
- Match areas of interest with exploration opportunities
- Foundation pays travel & associated costs for these visits

# Career Discovery

Pilot Visits in 2008

Biotron Climate Research Facility  
& University of Western Ontario  
Anatomy Lab



*Future University  
Students & Research  
Scientists*



# Career Discovery

Pilot Visit in 2008

**D-WAVE SYSTEMS**  
Quantum Computer Technology  
Research & Development

**NDSS Students**



*How Cold is it in “the Fridge”?*

*Real-World Applications for Google Search – Quantum Technology*





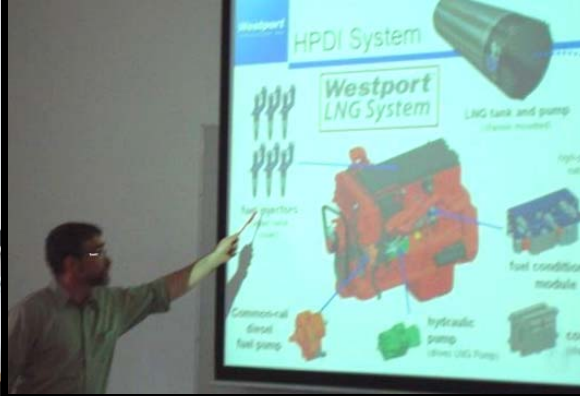
## ***Elements of Successful Career Discovery:***

- Leading-edge research & development
- Real-world applications & products
- Opportunity to meet engineers & scientists
- Understand career paths & opportunities

## **Westport Innovations Career Discovery**

***Terry Fox Students***





## Westport Innovations Career Discovery Burnsview Students

- Hands-on exploration – truck demo, engine dyno test cell, engine components
- Students meet engineers & scientists
- Understand career paths & opportunities



# Career Discovery At Electronic Arts

- Electronic Arts (EA) is world's leading independent developer & publisher of interactive entertainment software
- *Student Tours Choose focus on Animation or Programming*



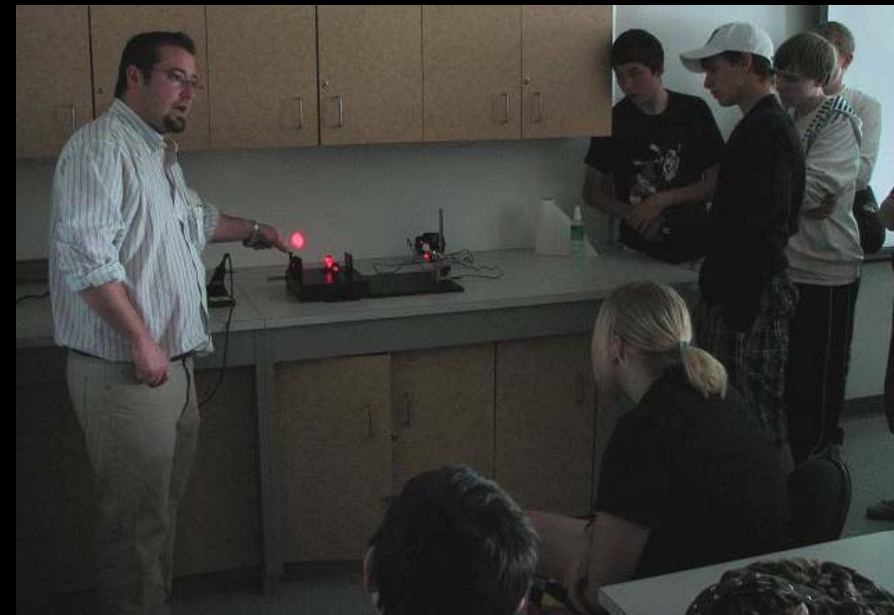


## **Electronic Arts Career Discovery**

*Yale Secondary Students Meet  
Senior Program Designer*



## Career Discovery At UNBC *Kelly Road Secondary*



# Odyssey Career Discovery

*Meet A Unique Inventor  
& Entrepreneur!*

**DAN GELBART**



**During the Odyssey Career Discovery visit, students will have the opportunity meet Dan, tour his unique research lab and see demonstrations of innovative technology and scientific processes.**

Dan Gelbart is an extraordinary engineer whose genius for invention has resulted in significant contributions to communications and electro-optics. Described by his colleagues and friends as a modern-day Edison, Dan Gelbart has over 100 US patents to his name.

Among his inventions are an improved mobile radio data terminal used in many taxi and police cars all over the world; the digital film recorder that was used by NASA to generate the famous photos of Mars; an optical tape recorder; and a new method of generating digital printing plates using the thermal action of a laser instead of the photonic action, which became the dominant method of making printing plates all over the world.

Dan Gelbart co-founded Creo in 1984 - a high tech company that developed laser-based products for the printing industry. He served as President and then Chief Technology Officer until 2005, when Creo was sold to Kodak for \$1 billion US. At the time of the sale, Creo had 4000 employees and was the largest player in its field. A significant portion of Creo's award-winning technology was developed by Dan Gelbart. Gelbart also developed patented technology that served as the basis for two Vancouver based companies: Symbolic Sciences, in imaging, and MDI, in telecom

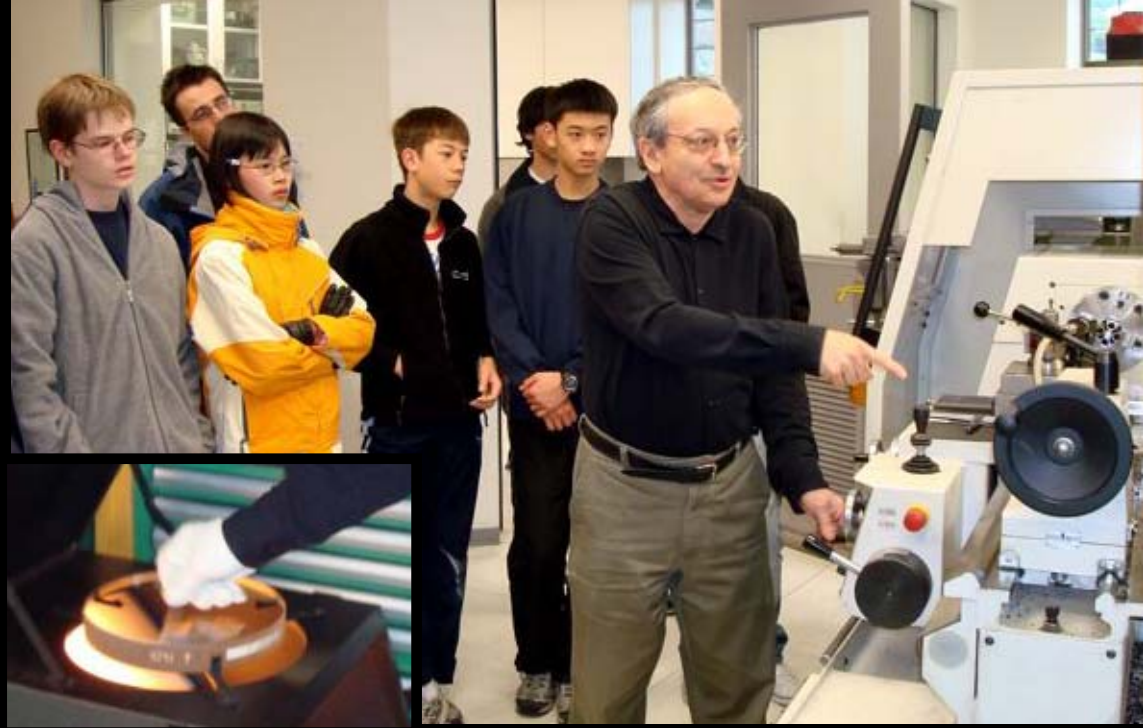
Gelbart has received multiple awards, including the British Columbia Science Council Gold Medal for Innovation, Institute of Printing Gold Medal, Honorary Doctorate (Simon Fraser University), and 1999 Entrepreneur of the Year, by Ernst & Young.

Dan Gelbart continues to create exciting, new technologies in his private research lab in Vancouver and acts as Technology Advisor to Kardium, a company that delivers breakthrough solutions for cardiovascular diseases.

## Career Discovery At Dan Gelbart's Lab

*Hands-on demonstrations of prototyping processes, tooling & production processes:*

- Cutting a screw with a CNC lathe
- Cutting a wrench with a water-jet CNC machine
- Painting with an electrostatic machine
- Plasma arc cutter, CNC grinder, and spot welder
- Hydraulic press - metal plate structures
- High-precision machining with tolerances less than a wavelength of light
- Using hydrocarbon molecules as "glue" to bond machined parts
- Optical measurement of machined tolerances
- Testing lab with spectrometers, diamond saws and micro welder



## Career Discovery At Dan Gelbart's Lab

### *Historical inventions with hands-on demos:*

- Edison's phonograph
- Edison's inventive process - breakthrough of adding foil paper to the tube to allow voice recording
- Transatlantic cable and telegraph - original galvanometer used in receiving station on East coast
- Morse code demo
- Explanation of invention of laser and maser
- Discussion of major innovations, rate of breakthroughs & relative timelines in various scientific disciplines: ie chemistry, biotech, mechanical, computer science, etc

**Dan's current research** – demo of stent, angiotech balloon and cardiovascular technology to be able to repair heart valves through a minor incision.

*Discussion with teachers on ideas of how to teach science concepts in classroom*





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## Building a Career Discovery Network

- Opportunities with leading research and educational facilities
  - Michael Smith Labs at UBC – AMBL - Dr. Joanne Fox
- Bioinformatics Field Trip for Grade 9 Students:
  - Palmer Secondary – Pilot Visit in Spring 2009
- Student feedback:
  - *It was so much fun with unique and creative learning activities*
  - *It was extremely educational and engaging*
  - *A fun way to learn about DNA, proteins and genes*
  - *It motivates you to want to learn & ask more questions about biology*
  - *A fun way to tour UBC and have experiences with a real laboratory*
- Bioinformatics Trip is Available for Odyssey Schools this school year



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## **Building a Career Discovery Network**

- Partnering with BC Innovation Council
- Use regional councils to help open the door to host organizations throughout BC
- Amy Wakeford and Tera Moon from BCIC will discuss opportunities under development