MY PROFESSIONAL EXPERIENCE

Christine Moussa. P.Eng.

EDUCATION: THE BEGINNING OF MY PROFESSIONAL CAREER

Biomedical mechanical engineering

Education requires endurance (yes, stress is involved)

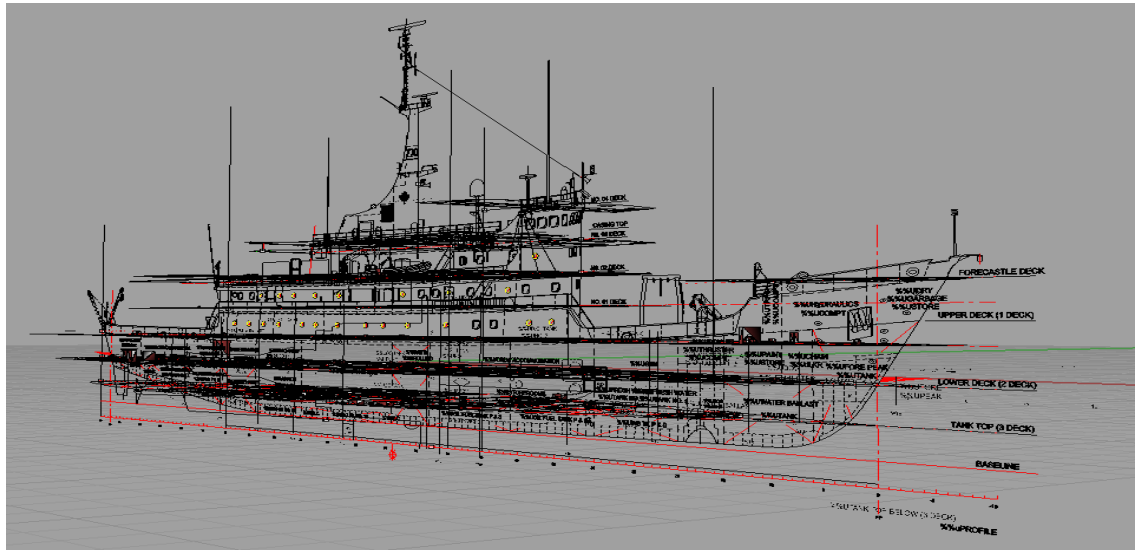
Education & practical experience is important

- CO-OP/FSWEP

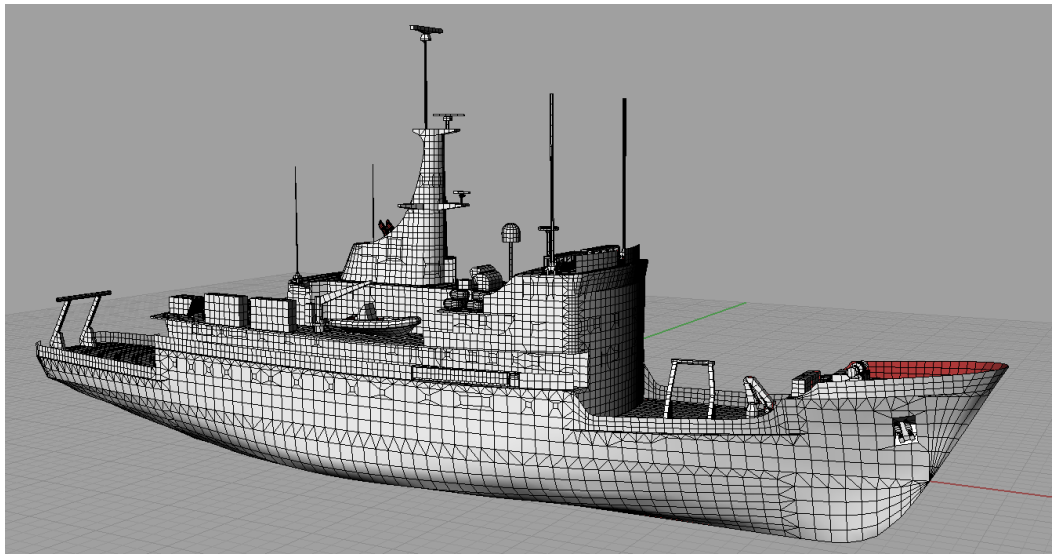
CO-OP EXPERIENCE

Davis Engineering Ltd

- 3D CAD model of the CFAV Quest, a Canadian research vessel



CFAV Quest blueprints uploaded onto their corresponding planes in Rhinoceros 3D

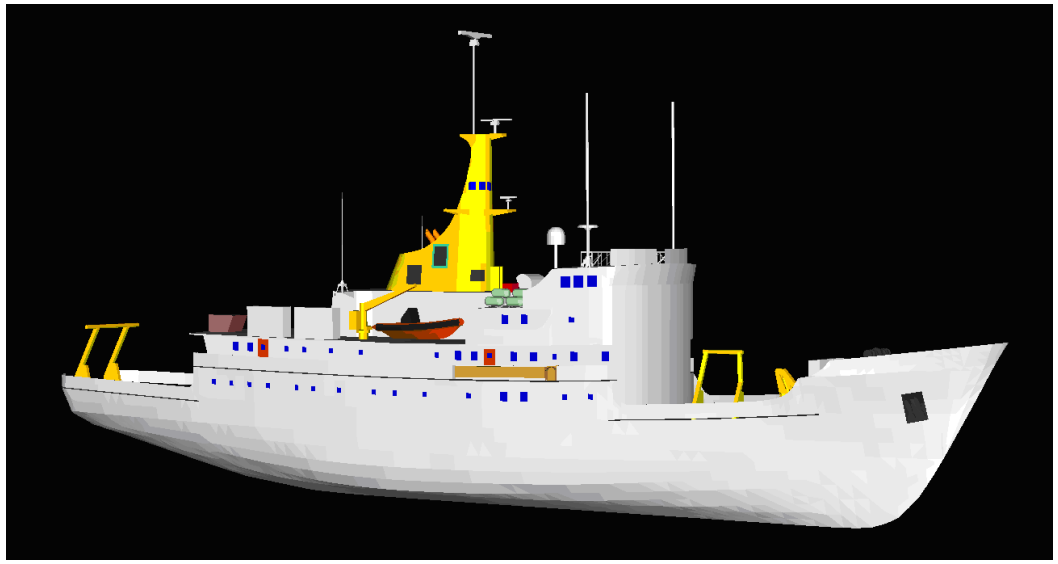


Completed 3DCad model of the CFAV Quest vessel in Rhinoceros 3D

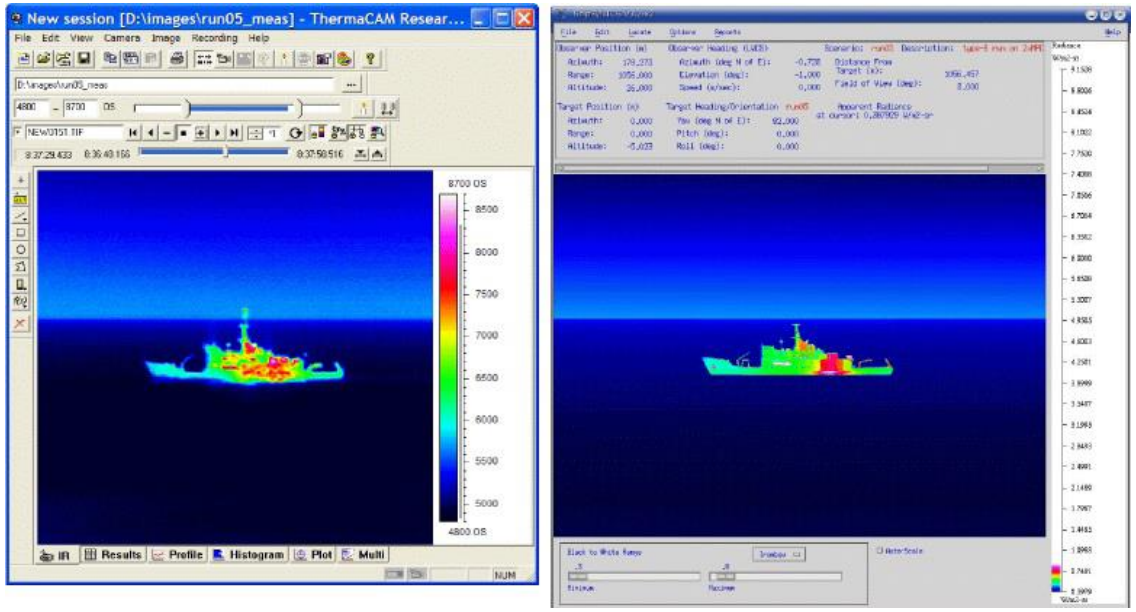
CO-OP EXPERIENCE

Davis Engineering Ltd

- Analyzed ship infrared (IR) signatures in ShipIR/NTCS



CFAV Quest vessel with applied materials in the ShipIR\NTCS software.

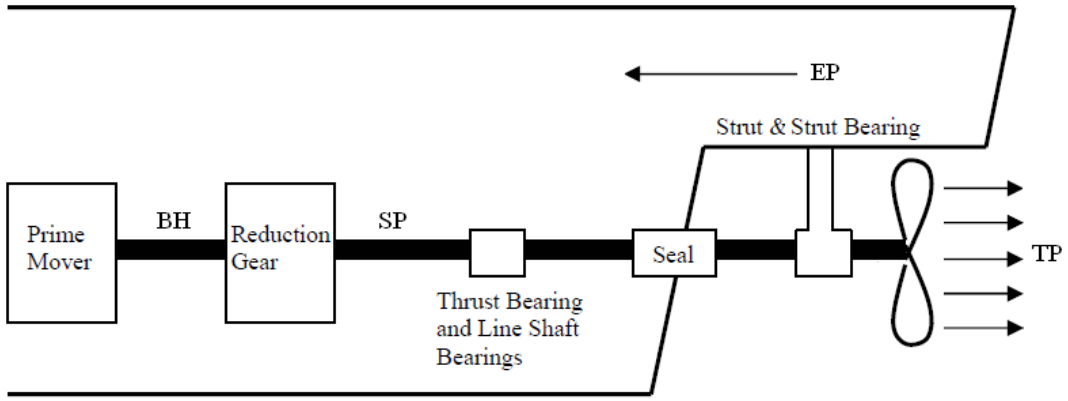


FLIR camera image of Quest taken during Q276 on left, simulated output from ShipIR/NTCS (v3.2) on right

CO-OP EXPERIENCE

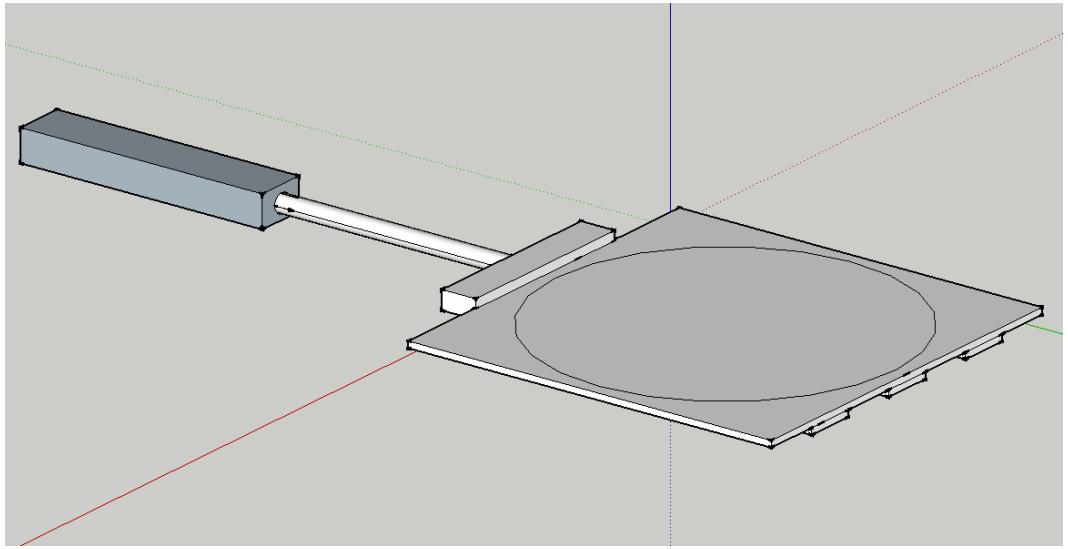
Canadian Coast Guard - Fisheries & Oceans Canada

- Offshore Patrol Vessel (OPV) propulsion system: engine power and arrangement solutions
- Offshore Oceanographic Science Vessel (OOSV) storage system for research equipment



Basic Ship Propulsion System Concept

Where Brake Power (BP) is produced by the ship's prime mover,
Shaft Power (SP) is the power output by the reduction gears (if installed),
Thrust Power (TP) is produced by the propeller's thrust and
Effective Power (EP) is the accumulated power from an engine to a driving mechanism either directly or through a power transmission



Design for the Conductivity, Temperature, and Depth (CTD) Rosette Storage System

CO-OP EXPERIENCE

Babcock Canada Inc.

- Researched alternate source of material supplies for the Victoria Class Submarines

HMCS *Windsor* in Halifax Dockyard (2014)

POST GRADUATION: FINDING A JOB

Applied to several job postings

Patience and perseverance

Job Opportunity at Babcock Canada

MY FIRST JOB: JUNIOR ENGINEER AT BABCOCK CANADA

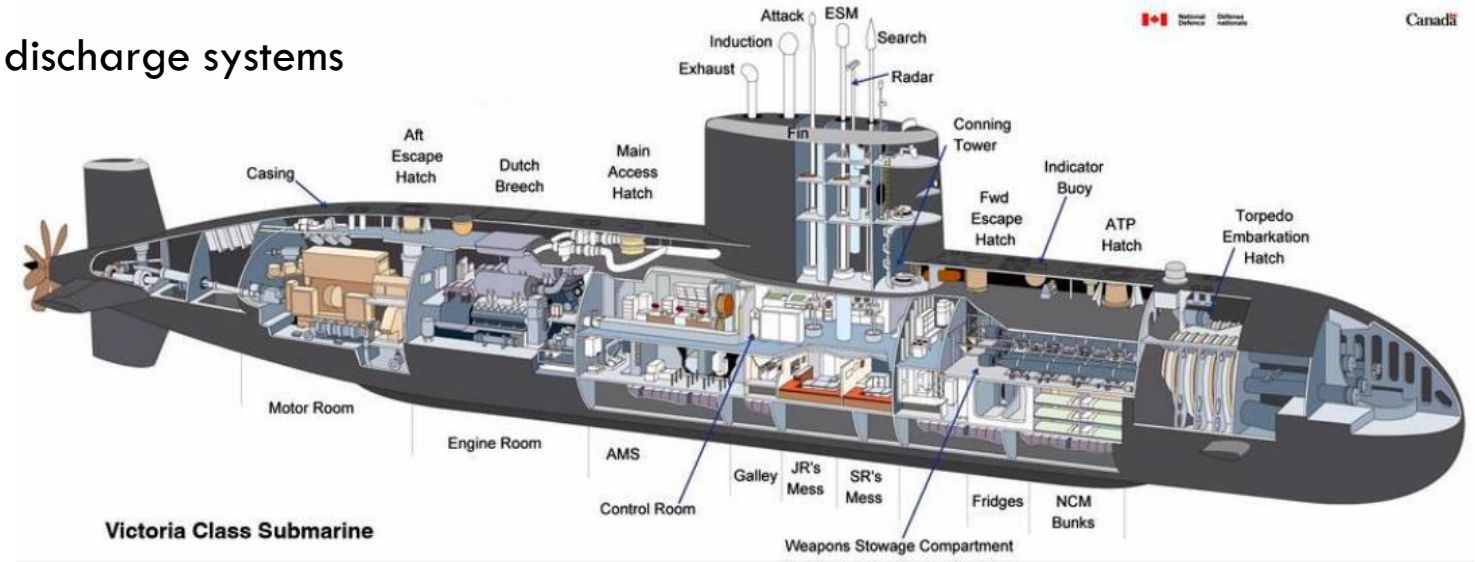
Babcock Canada provides In-Service Support (ISS) to the Canadian Victoria Class Submarines

Weapons Team

- Weapon handling, storage and discharge systems
- Submerged Signal Ejector
- Surveyed all vessels

Project Management

- Met with Client (DND)
- Managed Finances



SYSTEMS ENGINEER AT LOCKHEED MARTIN CANADA

Lockheed Martin Canada

- Aerospace and defense contractor
- Supports Navy's around the world by enhancing vessel combat system capabilities

Canada's National Shipbuilding Procurement Strategy (2010)

Lockheed Martin Canada programs I have supported

- Canadian Surface Combatant (CSC)
- Arctic Offshore Patrol Ship (AOPS)
- Joint Support Ship (JSS)

LOCKHEED MARTIN PROGRAMS I HAVE SUPPORTED

Canadian Surface Combatant (CSC)

Canadian Surface Combatant (CSC)

Canadian Surface Combatant Teams

LOCKHEED MARTIN PROGRAMS I HAVE SUPPORTED

Arctic Offshore Patrol Ships (AOPS)

HMCS Harry DeWolf offshore patrol vessel being built at the Irving Shipyard.

Joint Support Ship (JSS)

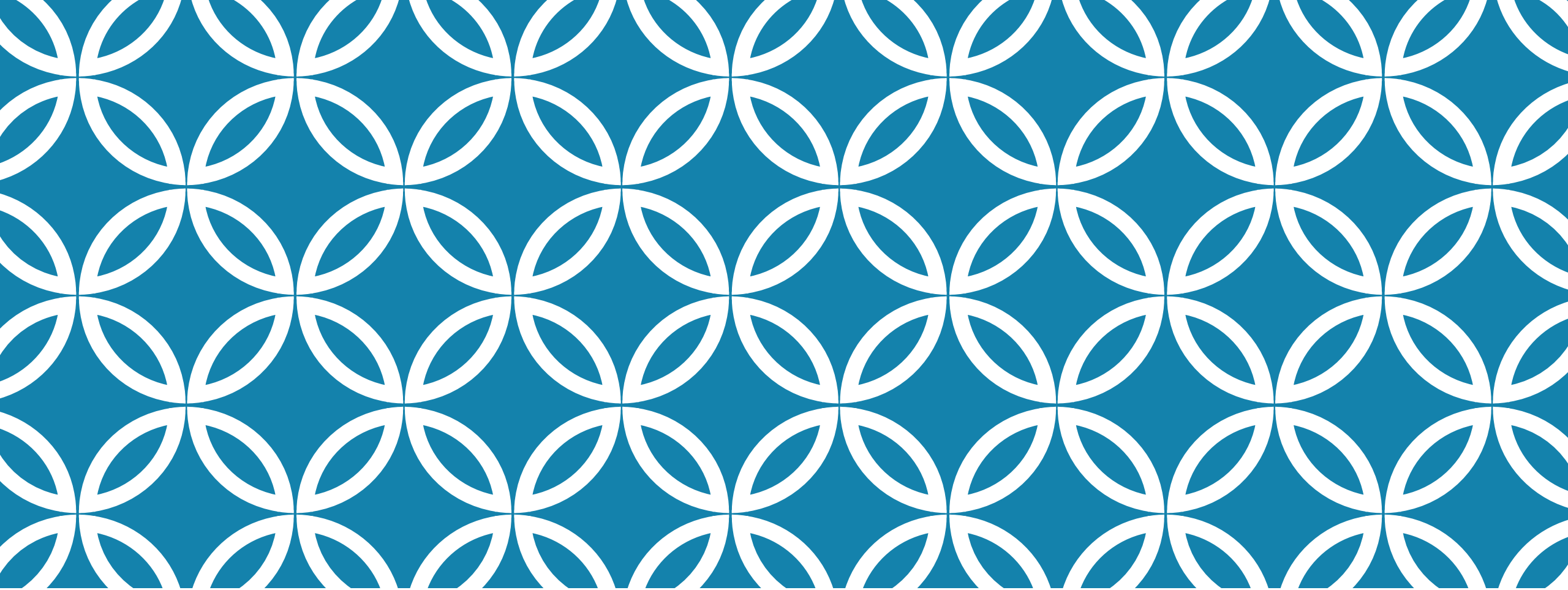
Joint Support Ship (JSS)

ROAD TO BECOMING A PROFESSIONAL ENGINEER (P.ENG.)

Application Process

- Professional Practice Exam (PPE)
  - Law & Ethics
- 4 years of practical experience (1 year under a P.Eng.)
  - Design and/or review of design work

In my case: Experience Requirements Committee (ERC) Interview



QUESTIONS?