



Goodbye ArcMap: Moving Curriculum & Courses to Modern GIS

Brian Baldwin – Esri

Mike Ruth – Evergreen State College

Kwong Chi Man – Hong Kong Baptist University

Patrick DeLuca – McMaster University



Esri's Education Program

Enabling, Encouraging, and Equipping

... future decision makers to think spatially and critically, solve problems, and use geotechnologies effectively to build a resilient world and become the change agents of tomorrow.

- **7,000+ universities globally**
- **Free licenses for all K-12 (Esri Schools)**
- **Education, research, and operations**



Housekeeping

- Please enter your questions in the chat box
- Microphones will be muted
- Q&A session at the conclusion of the webinar
- Webinar & slides will be available
- Survey following the webinar



Onur Binay @unsplash

Agenda

- Brian Baldwin – Modern GIS
- Mike Ruth – Evergreen State College
- Kwong Chi Man – Hong Kong Baptist University
- Patrick DeLuca – McMaster University
- Panel Discussion / Q&A



Modern GIS

Brian Baldwin



Time travel to 2004... **18 years ago.**



Harry Cunningham @unsplash

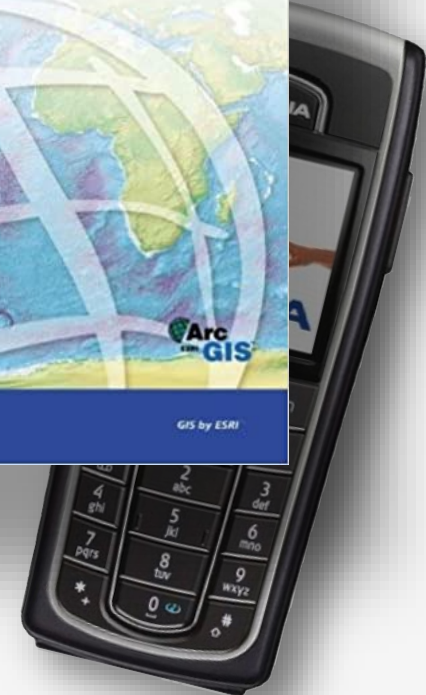


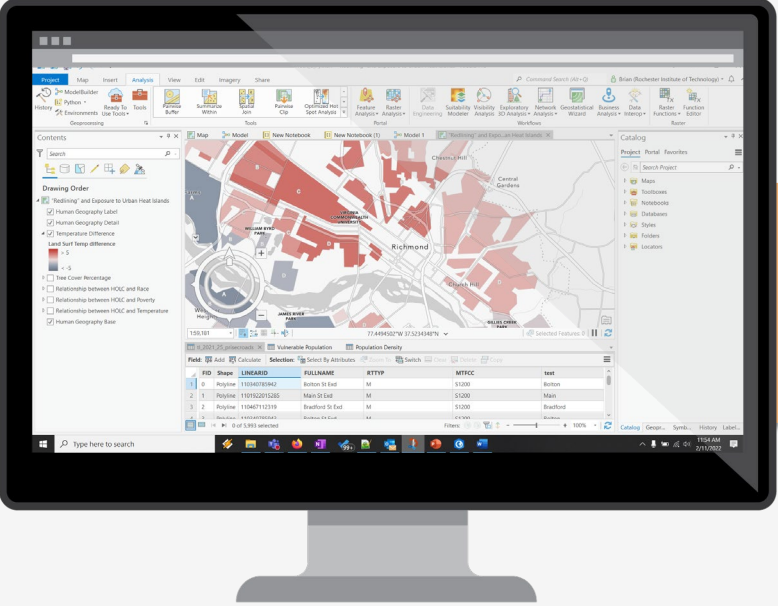
ArcGIS 9

Using ArcGIS Desktop

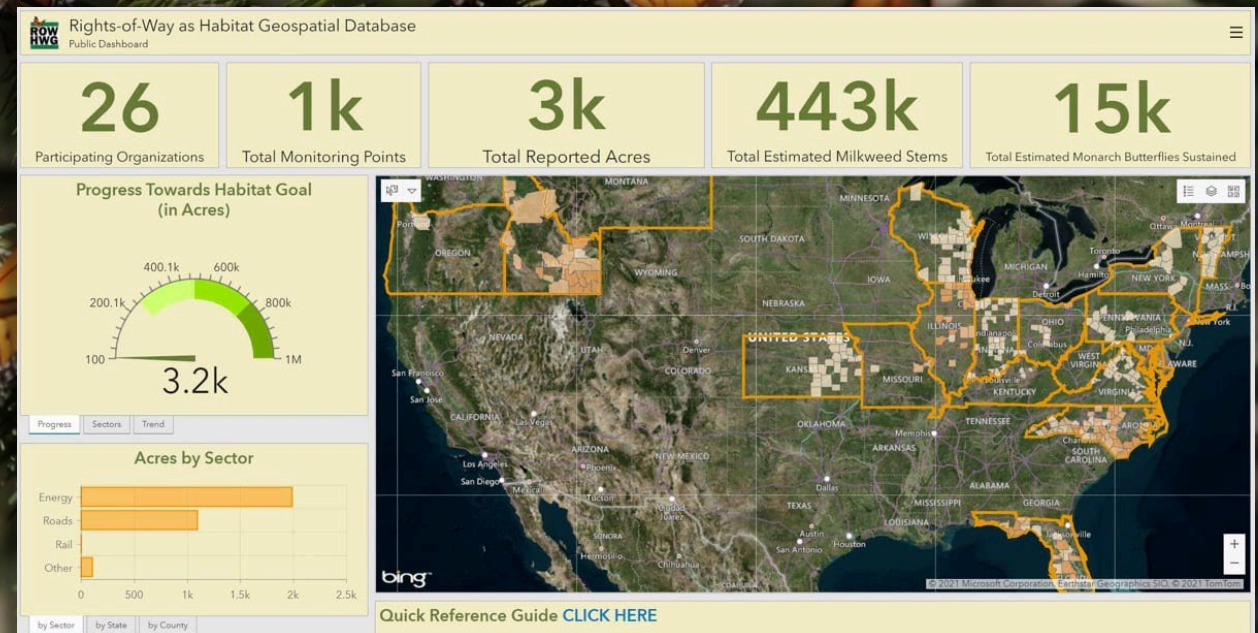


GIS by ESRI





"Partners can see who's doing projects. It helps them identify opportunities for collaboration—sharing capacity, resources, and hopefully having greater success."



Last Updated at (M/D/YYYY)
11/30/2021, 6:22 PM

Total Cases
262,699,410

Total Deaths
5,214,403

Total Vaccine Doses Administered
7,991,686,124

Cases | Deaths by Country/Region
/Sovereignty

US
28-Day: 2,315,354 | 30,148
Totals: 48,530,447 | 779,923

Germany
28-Day: 1,235,611 | 5,512
Totals: 5,881,432 | 101,474

United Kingdom
28-Day: 1,104,803 | 4,155
Totals: 10,205,447 | 145,414

Russia
28-Day: 1,019,345 | 33,387
Totals: 9,468,640 | 269,900

Turkey
28-Day: 710,704 | 5,807
Totals: 8,797,558 | 76,842

Ukraine
28-Day: 522,285 | 18,271
Totals: 3,606,622 | 91,268

Poland
28-Day: 490,810 | 6,043
Totals: 3,540,061 | 83,583

Netherlands
28-Day: 482,537 | 936
Totals: 2,684,420 | 19,863

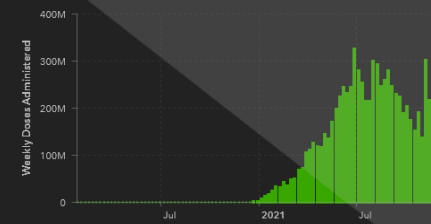
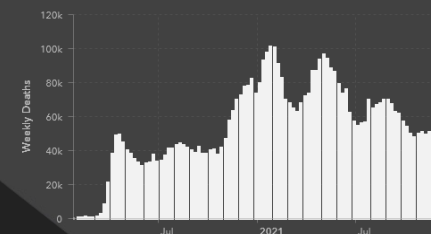
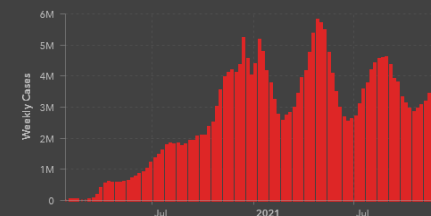
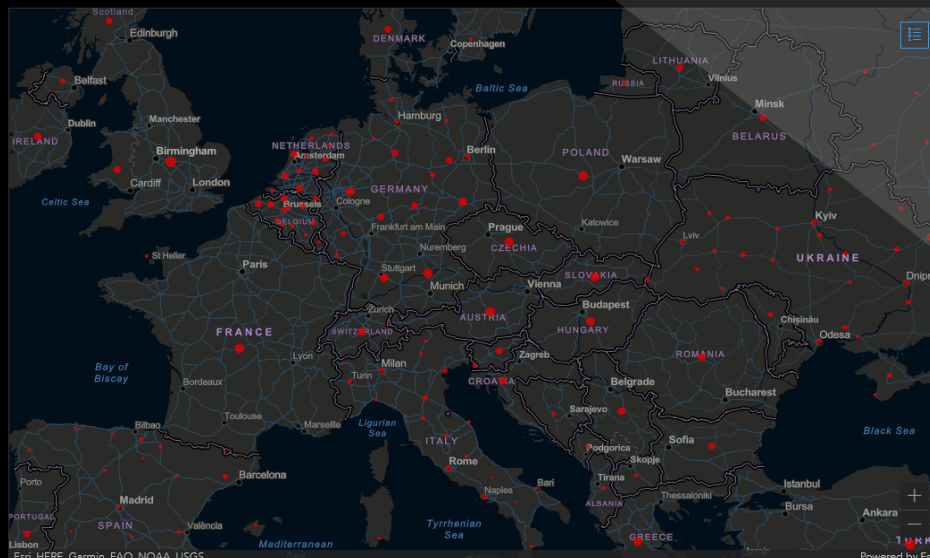
France
28-Day: 460,941 | 1,365
Totals: 2,780,870 | 120,116

Belgium
28-Day: 388,810 | 972
Totals: 1,749,469 | 26,966

28-Day Cases
14,595,130

28-Day Deaths
200,420

28-Day Vaccine Doses Administered
1,137,450,023



Admin0 | Admin1 | Admin2

28-Day | Totals | Incidence | Case-Fatality Ratio | Global Vaccinations | US Vaccinations | Terms of Use

Weekly | 28-Day

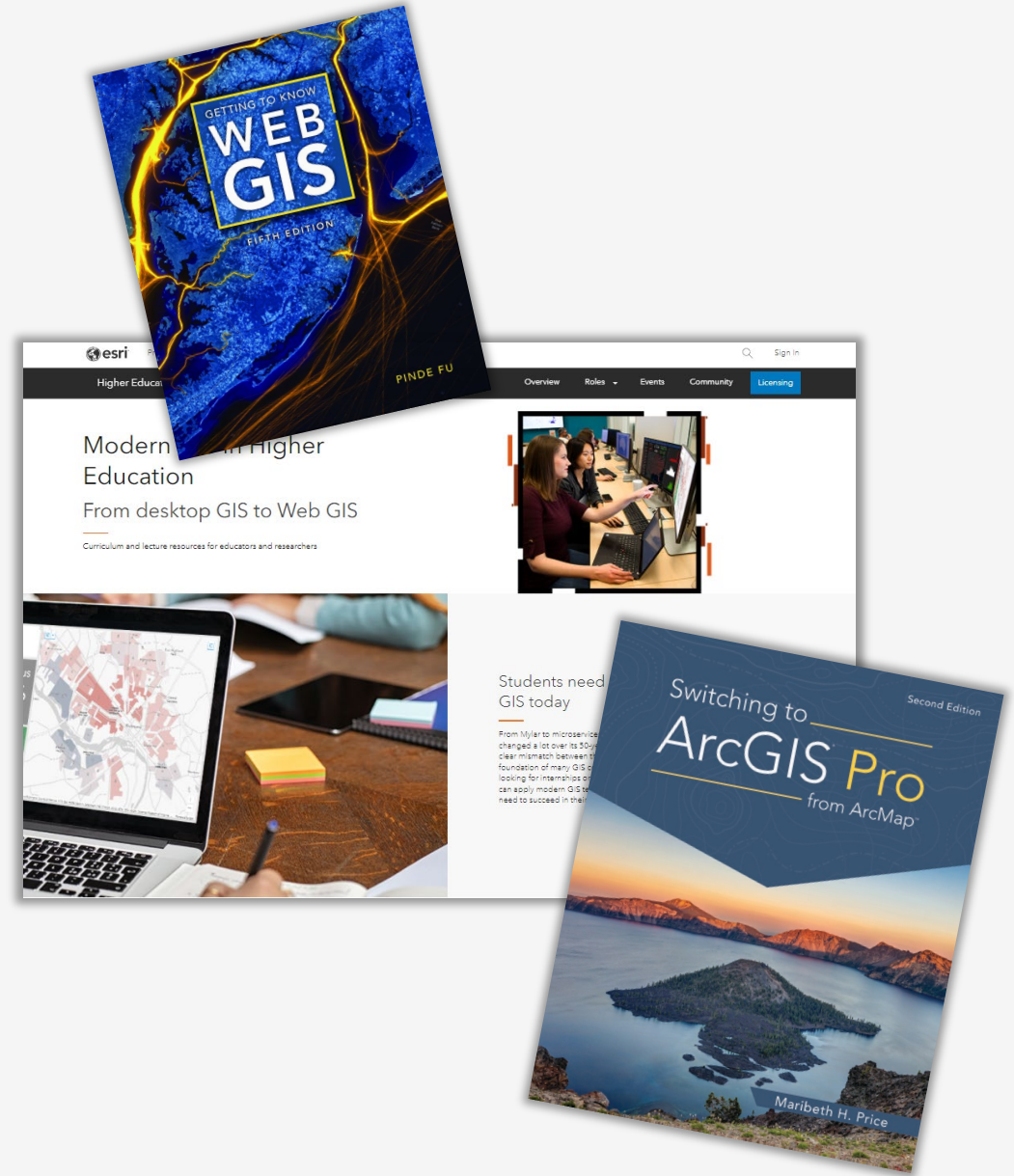
What skills are required?

- **Requirements gathering**
- **Data as services**
- **Application configuration**
- **Automation & scripting**
- **Enterprise / Cloud**



Resources

- Esri Press
- MOOCs
- Esri Academy (Learn ArcGIS)
- Doc, videos, blogs
- Esri Community
- Events! (EdSummit/UC)





Mike Ruth

Member of the Faculty, Evergreen
State College



Kwong, Chi Man

Associate Professor, History, Hong
Kong Baptist University



Using GIS to Teach History Undergraduates in Hong Kong

Kwong Chi Man

Hong Kong Baptist University

21 Sept 2022

Contexts

- Hong Kong
 - Highly diverse historical experiences in different part of the territory
 - Abundance in textual and statistical historical sources
- Academic underpinnings
 - The study of spatial history the History Department, Hong Kong Baptist University
 - The “1941 Battle of Hong Kong” Spatial History project



Hong Kong
1,092 km²

Contexts

- The Course
 - Created in 2020 to train history undergrads
 - Class size: 30-40
 - Course duration: 12-13 weeks
 - Course outline:

What is Spatial
History

GIS Tools: An
Introduction

A History of Maps

Infographics and
Historical Study

Introduction to
Digital Humanities

Group
Presentations

Contexts

- The Course (cont')
 - Assignments:
 - Students are asked to form groups of 4-6 to work on a story map (using ArcGIS StoryMap) about any themes/topics on Hong Kong history of their choosing
 - They are graded based on the story map, the presentation, and a short reflection paper

Difficulties Encountered

- History education in Hong Kong secondary (high) schools
 - Heavily text-based
 - Maps only play a minor role in textbooks and the curriculum
 - Weak spatial awareness among the students
- Usual difficulties encountered by historians when they are using GIS
 - Incomplete/incoherent data
 - Visualizing qualitative data
 - Handling the temporal factor
 - Terrain: then and now



Maps Layers

- ☐ None
 - ☐ 1939
 - ☐ 1941
 - ☒ 1939/1945
- Map Opacity

Unit Symbols

- ☐ None
- ☒ NATO
- ☐ Graphical

Structures

- ☐ Coastal Batteries
- ☐ Anti-Aircraft Gun Batteries
- ☐ Observation Posts
- ☐ Headquarters
- ☐ Searchlights
- ☐ HKI Other Structures
- ☐ HKI Pillboxes
- ☐ KLN Pillboxes
- ☐ KLN Other Structures
- Others

Additional Layers

- ☐ Faces of War
- ☐ Images of War
- ☐ War Crimes
- ☒ Objects of War
- ☒ Units
- ☒ List of Hong Kong combatants



“Are we doing
GS?”

“Are we doing
History?”

19.Dec.1941
02:00

Results

- Students' feedbacks
- Unexpected outcomes
 - Students showing the ability to frame research questions and collect sources
 - Inclusion of field works and oral histories
 - Attempts to improve visualization
 - Students more tech savvy than we imagined
 - Sample: <https://storymaps.arcgis.com/stories/c23949b11f8e41ed82de3305e280476e> (ArcGIS StoryMap)



Patrick DeLuca

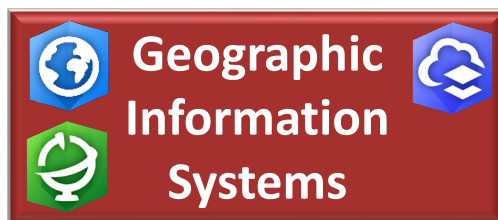
GIS Specialist and Instructor in the
School of Earth, Environment and
Society – McMaster University

Our Guiding Principles in Teaching Modern GIS

- Regular examination of industry needs
- Teach Fundamentals
- Build in critical thinking and project management skills to each exercise in upper year courses

Course Offerings @ McMaster

2nd Year



3rd Year



4th Year



How Our Investment Student Success Pays Off

- 2016 Esri Global Content Challenge
 - Won 5 of 9 cash prizes
- 2017 International IGYU Story Map Challenge
 - 2 entries finished tied for second place
- 2020 National Geomatics Competition
 - Both entries made the finals with one team winning a sustainable solution award
- 2021 Story Maps Challenge
 - Two entries made the finals (top 10)
- Annual ECCE Web App Challenges (2016-current)
 - Placed in the top 3 seven years in a row. Finished first place the past two years

Q & A



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WHERE[®]