



The Practice of Geospatial Leadership

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Chinese Academy of Sciences*

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Outline

- My background
- My vision for spatial
- USC Spatial Sciences Institute
- **Geospatial technology project management**
- **The practice of geospatial leadership**
- Learning outcomes
- Class assignments
- Completing an assignment
- Questions





My background

- New Zealand
- Canada (1979-1984)
- Montana (1984-1997)
- California (1997 to present)
- Visiting positions
 - Australian National University
 - University of Canterbury
 - Chinese Academy of Sciences
 - University of Utrecht
 - University of Waikato
- Department of Geography
 - Chair (1997-2000, 2004-2008)
- **Spatial Sciences Institute**
 - Founding Director (2007)
- Department of Sociology plus ...

Founding Editor (1995)
Transactions in GIS

Founding Member (1995)
UNIGIS International Association

President (1996-1997)
Fellow (2011-present)

Editor-in-Chief, GIS&T BoK Project (2016-present)
**University Consortium for Geographic
Information Science**

Lifetime Achievement Award (2016)
**Association of Chinese Professionals
Working in Geographic Information
Systems**



My spatial vision

- The spatial sciences include all of the different ways in which **location** may be used to organize, represent, store, analyze, model and visualize information
- The spatial sciences can be thought of as an enabling discipline, much like statistics



Spatial
sciences



Wicked problems
Academic disciplines

Location | Power of Place | Science of Where | Spatial Thinking | Spatial Turn

USC Dornsife

Dana and David Dornsife
College of Letters, Arts and Sciences

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Spatial Sciences Institute



Spatial Sciences Institute

- Established 1st July, 2010
- Rapid growth
 - 15 interdisciplinary faculty
 - 25 faculty affiliates
 - 7 staff
- AHF Building
 - Faculty & staff offices
 - Dedicated classroom & laboratories
- **Full suite of academic programs**
- Substantial research enterprise
 - Faculty & staff offices
 - Dedicated classroom & laboratories
- Large computing infrastructure

Collaboration

Public Square

**Actionable
Knowledge**





Interdisciplinary courses and degrees at every level

○ Undergraduate

- BS in Geodesign
- Minors in Human Security & Geospatial Intelligence, Spatial Studies

○ Masters students

- MS in GIS&T, Spatial Informatics
- Graduate Certificates in GIS&T, Geospatial Intelligence, Geospatial Leadership
- GeoHealth Track in Keck's MPH degree

○ Doctoral Students

- PhD in Population, Health and Place
- Graduate Certificate in Spatial Analytics



Charles Becker, M.S. GIST '16

Intelligence Officer, US Air Force



Analyzed spatial and non-spatial relationships to assess accessibility of primary care for military veterans

Melodie Grubbs, M.S. GIST '17

GISCorps Volunteer



Led a world-wide volunteer effort that mapped the Ebola outbreak for the World Health Organization and the Centers for Disease Control and Prevention

Kelly Wright, M.S. GIST '17

Designed an app to enable humanitarian aid workers to gather demographic and medical information on the disease tungiasis



Steven Rubinyi, M.S. GIST '14

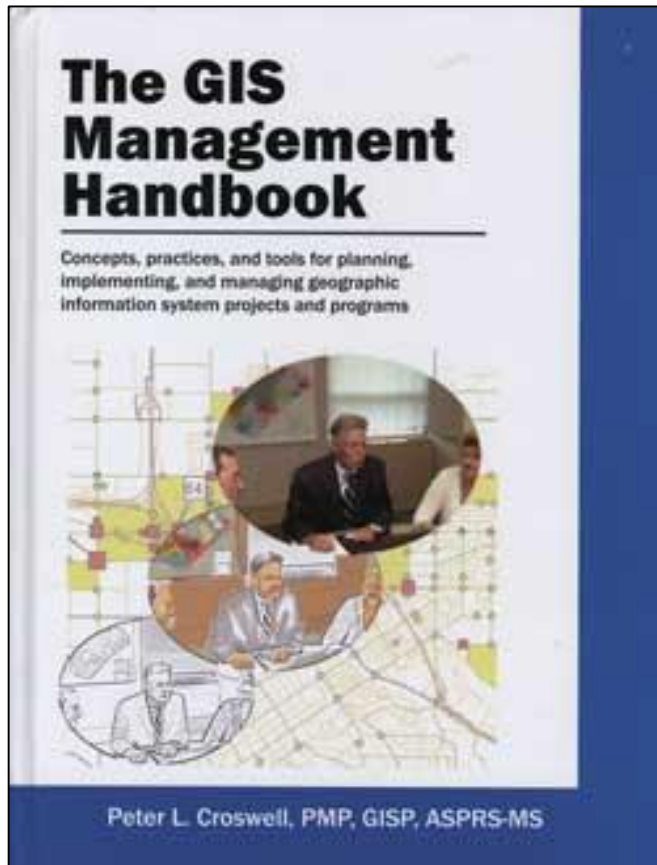
D.Phil. Candidate, Oxford University

Analyzing the effectiveness of coastal adaptive infrastructure in Bangladesh based upon work with the World Bank

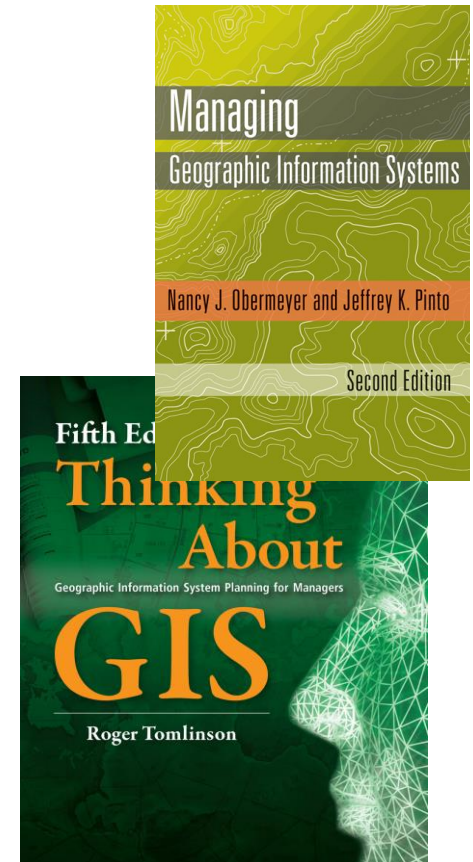




Geospatial technology project management



- Geospatial project management principles
- Running a geospatial technology project
- Human resources
- Current and emerging trends





Learning outcomes

- Identify and critically analyze the issues involved in organizing, planning, monitoring, and controlling a geospatial technology project
- Initiate a small-scale geospatial technology project by developing project plans and financial budgets, assembling project costs and benefits, developing investment appraisal methods, and using authorization, monitoring, and control processes
- Discuss the role, significance, and impact of people in a project management setting, and evaluate and implement strategies for managing people in geospatial technology projects
- Review current geospatial technology project management methodologies and appraise their effectiveness and efficacy for managing different types of geospatial projects



Course schedule: A weekly breakdown

Introduction

Geospatial Program
Development

Geospatial Program Organizational
Structure, Governance, &
Coordination

Human Resources

Funding, Financial
Management, & Collaboration

Geospatial Program Legal Issues

Management of Geospatial
Program Technical Elements

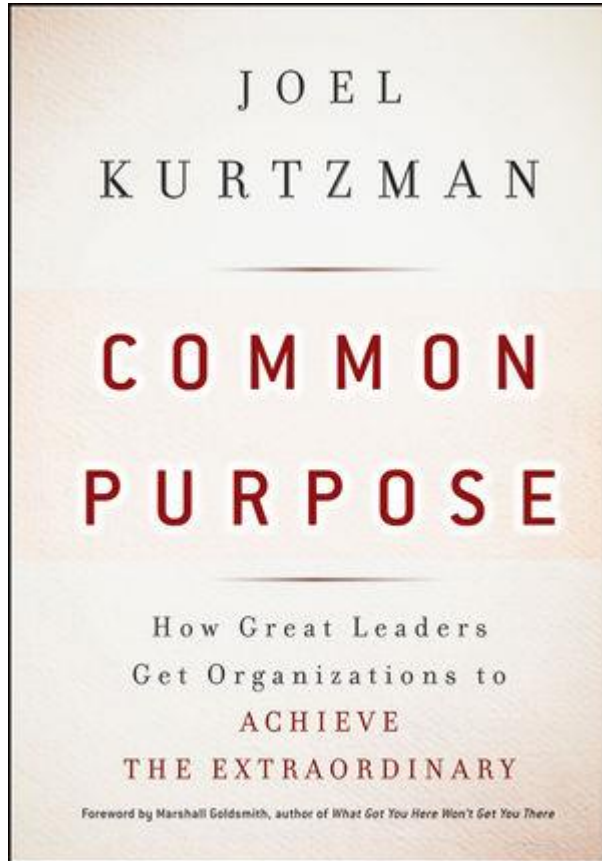
Geospatial Office Operations,
Service Delivery, & User Support

Geospatial Projects &
Project Management

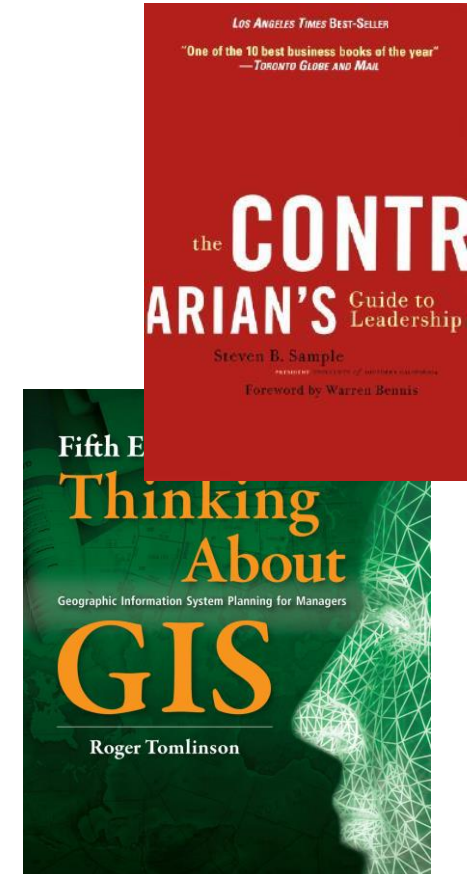
Wrap-up



The practice of geospatial leadership



- Geospatial value proposition
- Leadership fundamentals
- Innovation practice
- Leadership at work
- Future trends





Learning outcomes

- Describe the geospatial value proposition, identifying all of the ways in which geospatial information and spatial thinking can promote human well-being
- Examine how leaders can help shape a context in which other people will help geospatial information management groups and organizations achieve extraordinary results
- Examine the role of teamwork in helping geospatial information management groups and organizations achieve extraordinary results
- Examine the role of personal leadership skills and styles in helping geospatial information management groups and organizations achieve extraordinary results





Learning outcomes (2)

- Discuss why ideas matter and how the various elements of a geospatial information management group or organization's innovation practice influences the successful generation, adoption and deployment of new ideas
- Critically evaluate how disruptive technologies might affect geospatial information management and the potential to capture and use some of these changes to help a geospatial information management group or organization prosper
- Develop a vision for how the geospatial information management domain is likely to grow and evolve during the next 5-10 years





Course schedule: A weekly breakdown

Introduction

US Geospatial
Services Industry

Economic Impact of Geospatial
Services

The Art of Leadership

LF: The Organizational Context

LF: Conversations with
Geospatial Leaders

LF: Leadership Fundamentals

LF: Role of Teamwork

LF: How to Lead

LF: Why Ideas Matter

Innovation Practice

Disruptive Technologies

Business Communication
Revolution

Future Trends in Geospatial
Information Management



Class assignments

- 3 Exercises
- 2 Presentations
- 10 Reflections
- 1 Final Report



Read the book entitled "The Business Communications Revolution" authored by Richard Hughes referred to in your Week 12 Course Materials and send me a brief report (two-page maximum, typed using a 12-point font and standard margins) **identifying two things you learned that were important to you** (task #1), **explaining why these things were important to you** (task #2), and **drawing some implications for your future actions** (task #3).



Exercise #2: Self-assessment of strengths & weaknesses

- For this exercise you will flesh out **an assessment of your own strengths and weaknesses** using a variety of approaches that I have gathered and cobbled together from a series of websites that perform more or less the same service
- The rationale for including an exercise like this one is simple since we are all more likely to succeed in life if we use our talents to the fullest extent and of course, we will experience fewer problems if we know what our weaknesses are and, if we manage these weaknesses so they do not influence or interfere with the work we do
- The MindTools® website, for example, suggests conducting a personal SWOT analysis and while we will not pursue this particular approach, some of their introductory material is helpful in getting started with the tasks that will be assigned below. Their approach focuses on strengths, weaknesses, opportunities and threats



Exercise #2: Strengths and weaknesses

Strengths

What advantages do you have that others don't have (for example, skills, certifications, education, or connections)?

What do you do better than anyone else?

What personal resources can you access?

What do other people (and your boss, in particular) see as your strengths?

Which of your achievements are you most proud of?

What values do you believe in that others fail to exhibit?

Are you part of a network that no one else is involved in? If so, what connections do you have with influential people?

Weaknesses

What tasks do you usually avoid because you don't feel confident doing them?

What will the people around you see as your weaknesses?

Are you completely confident in your education and skills training? If not, where are you weakest?

What are your negative work habits (for example, are you often late, are you disorganized, do you have a short temper, or are you poor at handling stress)?

Do you have personality traits that hold you back in your field? For instance, if you have to conduct meetings on a regular basis, a fear of public speaking would be a major weakness



Exercise #2: Opportunities and threats

Opportunities

What new technology can help you? Or can you get help from others or from people via the Internet?

Is your industry growing? If so, how can you take advantage of the current market?

Do you have a network of strategic contacts to help you, or offer good advice?

What trends (management or otherwise) do you see in your company, and how can you take advantage of them?

Are any of your competitors failing to do something important? If so, can you take advantage of their mistakes?

Is there a need in your company or industry that no one is filling?

Do your customers or vendors complain about something in your company? If so, could you create an opportunity by offering a solution?

Threats

What obstacles do you currently face at work?

Are any of your colleagues competing with you for projects or roles?

Is your job (or the demand for the things you do) changing?

Does changing technology threaten your position?

Could any of your weaknesses lead to threats?



Exercise #3: Constructing Life Maps

USC SPATIAL SCIENCES INSTITUTE
INAUGURAL EVENT March 21, 2011



JACK DANGERMOND

The role of

SPATIAL SCIENCES

GEOSPATIAL TECHNOLOGY CHANGING RAPIDLY

KILLER APPS
GET KIDS ENGAGED

COLLABORATION

INTEGRATED SYSTEM

EASY
OPEN
POWERFUL
EVERYWHERE

CHANGING IMAGERY

GEOSOCIAL NETWORKING

DYNAMIC IMAGERY



ON THE FLY

ADDICTIVE



REAL TIME

CONSUMER APP

ACROSS DEVICES



GEOSPATIAL INFRASTRUCTURE

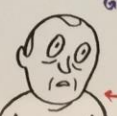
MILLIONS

THOUSANDS



GEO GAMING

MIDDLE AGED DUDE



MAKE IT SIMPLE

MASH UPS

TWEET DENSITY MAP

THE CLOUD



WEB PERVASIVE GIS SERVICES APPS

DESIGNING THE WORLD

MAKING THE WORLD SUSTAINABLE

"PLACE BASED THINKING"

QUANTITATIVE GEOGRAPHY



OTHER DIMENSIONS



SCALABLE?

SPATIAL THINKING



Vision

SPACE LANDSCAPE DESIGN



CLIMATE

- LAND MNGMNT.
- DEFENSE
- DISASTERS
- BUSINESS
- GOVERNMENT

OPEN WORLD OF COLLECTIVE GEO UNDERSTANDING

WE ALL DESIGN OUR FUTURE

APPLY SPATIAL THINKING

Lloyd Dangle
www.lloyddangle.com

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Final project: The development of a personal plan



- The final project requires you to craft a personal plan for the next phase of your growth as a leader in two parts
- The first is a **final report** (30 points), which is the focus of this particular document, and the second is a **presentation** (5 points), and both should draw on material from the entire course
- For example, you may want to include as appendices in the final report your self-assessments, life maps, etc. (so hopefully you still have them), and you may also want to include materials from outside the course that you consider relevant, such as past performance evaluations or advertisements documenting the kind of position you aspire to apply for in the near future.



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