Purpose

Creating Relationships

Understanding

Sharing

Learning

Inspiring

Fun

Creating Relationships
You

A Global Community of GIS Professionals

Changing the World Together
Your WORK
Applying Geography Everywhere
Environmental Monitoring and Assessment

- Ecologically Significant Areas
  - NOAA—Monterey Bay
  - California

- Noise Modeling
  - Burlington, VT

- Monitoring Oxygen
  - Switzerland
  - Chesapeake Bay

- Forest Carbon Reserves
  - South America

- Groundwater Change
  - India

- Pollution Modeling
  - US

- Pipeline Spill Modeling
  - Colombia

- Sea Level Rise
  - India
Managing Natural Resources

- **Precision Agriculture**
  - New Zealand

- **Wheat & Soybean Planting Frequency**
  - US

- **Soil Management**
  - Kerala, India

- **Agricultural Modeling**
  - Canada

- **Forest Management**
  - India

- **Marine and Terrestrial Habitat**
  - Abu Dhabi, UAE

- **Small-Scale Mining**
  - Peru

- **Ocean Modeling**
  - NOAA

- **Natural Resources**
  - India
  - Canada
  - Peru
  - USA
  - NOAA

- **Other Topics**
  - Precision Agriculture
  - Soil Management
  - Marine and Terrestrial Habitat
  - Small-Scale Mining
  - Ocean Modeling
Transportation Planning and Management

- Transportation Planning
- Highway Information System
- Transit Access
- Airspace Terrain
- Airport Authority
- Routing Workers
- Traffic Modeling
- Railway Asset Management
- Port Asset Management

Locations:
- India
- Milwaukee, WI
- Boise, ID
- Mundra, India
- Citilabs

Projects:
- India
- Indonesia
Utilities and Telecommunications

Cellular Coverage Analysis

Renewable Energy Connection Network

City Gas Distribution

Integrated Utility Management

Meter Management

Smart Meters

National Power Restructuring Program
Buildings and Campus Management

Space Utilization
- India

Space Planning
- Harvard
- Oregon

Transit Station Design
- Thailand

Proposal Review
- Czech Republic

Redevelopment Planning
- Los Angeles

City Modeling
- US

Campus Navigation
- Washington

Smart Cities
- US

India

Thailand

Czech Republic

Los Angeles

US
Understanding Human Health Patterns

- **Ebola**
  - Response
  - Disease
  - West Africa
  - Liberia

- **Vector Control of Diseases**
  - India
  - Disease

- **Malnutrition**
  - World

- **Track Hospital Readmissions**
  - Access to Health Facilities
  - California
  - Queensland, Australia

- **Infant Mortality**
  - Columbus, OH

- **Childhood Obesity and Poverty**
  - Denver, CO
  - Texas

- **Child Maltreatment Prediction**

**Additional Topics:**
- **Calculus**
- **Education**
- **Economics**
- **Environmental Science**
- **Geography**
- **History**
- **Law**
- **Literature**
- **Mathematics**
- **Music**
- **Philosophy**
- **Politics**
- **Psychology**
- **Religion**
- **Sociology**
- **Sports**
- **Technology**
- **Theater**
- **Visualization**
- **World Health**
Preparing for and Responding to Disasters

Modeling Risk

- Pipeline Rupture
- Water Resources
- Landslides
- Hurricane Surges
- Typhoons
- Earthquakes
- Hypocenters
- Epicenter
- Citizen Alerts
- USGS

Real-Time Monitoring

- Rain
- Fires
- Severe Weather
- India
- Africa
- Illinois
- Nepal
- Philippines

Water Resources

India

Landslides

India

Typhoons

Philippines

Hurricane Surges

Massachusetts

Earthquakes

Philippines

Nepal

Illinois

US

India

Rain
Portals Are Opening Access

Public Authority for Industry

NOAA

USAID

NGA—Ebola

USFS

Open Data Sharing

Kuwait

US

Africa

Russia

Abu Dhabi SDI Geoportal

Natural Reservation

Shell

Seminole Tribe

State GIS Portal

Tyumen

Rio de Janeiro

Romania

Florida

India

Brazil

Wildland Fires

Wildland Fires

USD

USAID

Seminole Tribe
Our World
Is Increasingly Challenged
Geography

The Integrating Science of Our World

Providing Content and Context for Understanding Everything

... Helping Address Our Global Challenges
GIS Provides the Framework and Process
For Applying Geography

Observational Science
Modeling and Predicting
Analysis and Interpretation
Design and Planning
Decision Making
Action

Creating Understanding

Becoming Essential to Everything We Do
GIS Is Helping Us Be Smarter

Improving How We Manage and Make Decisions

- Increasing Efficiency
- Operating in Real Time
- Optimizing Performance
- Automating
- Visualizing
- NGOs
- Utilities
- Cities
- Business
- Nations
- Communicating Effectively
- Predicting
- Seeing Relationships
- Measuring Everything
- Thinking Holistically
- Creating Insights
- Modeling
- Monitoring
Geodesign
Geodesign
We Are Entering a Period of Geographic Enlightenment

GIS Is Awakening the World to the Power of Geography And Creating a Better Future
GIS Professionals
Are Powering This Geographic Enlightenment

Learning and Teaching the Patterns
Creating Innovative Solutions
Showing What's Possible
Applying GIS Everywhere
GIS Is Evolving
A Whole New Pattern Is Emerging

Collaborative
Mobile
Real-Time
Visualization

Analytics
Apps

Implementation
Open
Configurable
Agile
Easier
Ready to Use

Content

Technology

Virtualization
Big Data
Faster Computing
IoT
Cloud

Distributed Processing
Smart Devices
Consumerization

Integrating Many Innovations

GPS
UAVs
Real-Time
Crowdsourcing
Sensors
Lidar
Remote Sensing
Field Survey
Scientific Data
Social Media

Web GIS
Web GIS Is a Transformational Architecture

Opening, Integrating, and Simplifying Everything

**Web GIS**

*Desktop*  
*Server*

**Portal**

*Apps*

*Web Maps*
*Web Scenes*
*Layers*

*Distributed Services*

*Bringing Together Systems of Record with a System of Engagement*
What’s Trending with Web GIS
Richard Sundharam
WebGIS Connects and Integrates
Data, Workflows, and People

Data Model
- Administrative Boundaries
- Transportation
- Incidents
- Facilities
- Populations

Navigator
Web map Viewer
Survey123
Workforce
Dashboard
Pro

Story Maps

Data Processing & Management
Web GIS Empowers GIS Professionals

Expanding Your Impact Across the Organization

Providing Everyone the Geographic Advantage
Web GIS Is a Different Architecture
Creating Shared Information and Facilitating Collaboration

Opening Access and Engaging Everyone

Data Base Centric
Centralized, Normalized

Networked
Shared Geographic Understanding

Portal
Web GIS Transforms Organizations
Creating Shared Information and Facilitating Collaboration

Hierarchical
- Stovepiped Data
  - Management
  - Planning
  - Operations

Networked
- Shared Geographic Understanding
  - Opening Access and Engaging Everyone
Web GIS Creates New Connections Across Organizations

Providing an Open Platform for Collaboration and Innovation
Awakening the World to the Power of Web GIS
Requires More Than Technology

... And the Leadership and Creativity of GIS Professionals

Empowering Everyone with Maps
A Shared Vision
Delivering Engaging Apps
A Culture of Collaboration
Good People Passionate Excited
Our WORK

Creating Useful Technology and Supporting Our Users

- Imagery
- Data Management
- Administration
- Enterprise Integration
- Identity
- Editing
- Standards
- Solution Templates
- 3D
- Interoperability
- Geodesign
- Spatial Analysis
- Content
- Big Data
- Apps
- Developers
- Mapping
- Open Data
- Performance
- Location Analytics
- Real-Time
- Cloud
- Quality
- Usability
ArcGIS - An Integrated Web GIS Platform

Providing Mapping, Analysis, Data Management, and Collaboration

Available on the Open Web . . . . . . and On-Premises
Geoinformation Model

- Abstracts and Organizes Geospatial Data

**Web GIS**

- Apps
  - Web Scenes
  - Web Maps
- Portal
- Layers
- Real-Time
- Enterprise Data
- Imagery
- GIS Maps & Data
- Distributed Data
Platform THEMES

Innovation in GIS
Content

A Living Atlas of the World

Basemaps | Imagery | Demographics | Landscape

Thousands of Maps and Layers
Ready-to-Use
Authoritative

Millions of User Contributions . . .
. . . Billions of Views per Week
Data Management → Focused Workflows and Tools

Workflow Management
- Manager
- Tasks

Improved Editing
- Attributes
- 3D
- Construction
- Multifeature Creation

Expanded Database Support
- SQL Server
- Oracle
- DB2
- SQLite
- Teradata
- PostgreSQL
- ALTIBASE
- SAP HANA
- SPARK
- HADOOP
- Dameng

New Utility Model

Conflation
Mapping and Visualization

- Advanced Tools for 2D and 3D

- Smart Mapping
- Vector Tiles

- Data Visualization
- 3D Cartography

- Global Visualization

New App — ArcGIS Earth
3D Visualization and Analysis

- Fast, Easy, and Everywhere
- Web Scenes in Online and Server
- Full KML Support

- Virtual Cities
- Lidar Analysis
- Building Models
- Thematic Visualization
- Integrated 2D/3D – Pro
- Data Exploration
- Analytics
- Rule-Based Models
Geodesign: Integrating the Design Process into GIS

Geographic Planning
- GeoPlanner

Urban Design
- CityEngine

Flow:
1. Data
2. Analysis
3. Design (Sketch)
4. Evaluate
5. Decision

Feedback
Imagery: Managing, Analyzing, and Serving Remotely Sensed Data

- Integrated Analysis Tools (100+)
- New Workflow Templates
- Additional Sensor Support

Scientific Data
Image Classification
Accuracy Assessment

Full-Motion Video
Oblique Imagery and Measurements

Object-Based Image Analysis
Dynamic Processing Chains

UAV/Drone Support
Supporting Single Scenes . . .
. . . and Massive Collections
Real-Time

- High-Velocity Monitoring and Alerting

Many Performance Improvements

Boston Marathon

GeoEvent Analytics

Alerting

The Key for Smart Community
Big Data

Geoanalytics and Visualization of Massive Data

Creating New Insights

Raw Data

Aggregated Data

Hot Spots

Results

NYC Taxi Data

Continuous Analytics

Parallelized Analytics on Tabular, Vector, and Imagery Datasets

Coming . . .

GeoAnalytics Extension
Open Platform

Ensuring Data and System Interoperability

Standards
- WMS
- GML
- WCS
- KML
- WWW
- CSW
- SQL
- SOAP
- WFS
- WMTS
- SLD
- WPS
- OPENDAP
- ISO
- NetCDF
- LAS
- GeoPackage
- REST
- OGC

Industry Formats
- WaterML
- Imagery
- Hadoop
- CityGML
- COLLADA
- DGN
- INSPIRE
- FileGDB
- Shapefiles
- Web Scene (I3S)
- OLEDB
- AIXM
- OneGeology
- FileGDB
- Shapefiles
- DBMS
- DWG
- INSPIRE

Open Software
- Interoperability
- Extensible Architecture
- Open-Source Libraries
- Open-Source Integration
- Embeddable
- Open APIs
- Open Data

. . . Integrated into Thousands of Systems
ArcGIS PRODUCT

An Integrated System
Providing Mapping, Visualization, Editing, and Analysis

coming
- More Analytics & 3D
- Vector Tiles
- Mobile Map Packages
- Better Metadata

... Simplifying and Improving
Pro, Local Government, and Analytics/Visualization Demo

Partha Ghosh
Apps - Making ArcGIS Available Everywhere

Field
- Navigator
- Workforce
- Collector
- Survey123
- Mobile (Connected & Disconnected)
- Configurable Solutions That Work Together

Office
- ArcGIS for AutoCAD
- Explorer
- Maps for Office
- ArcGIS Earth
- Dashboard
- Easy, Focused, and Ready-to-Use

Public
- Story Maps
- Open Data
- Photo Survey
- Crowdsourcing

Mobile (Connected & Disconnected)
- Navigator
- Workforce
- Collector
- Survey123
- ArcGIS for AutoCAD
- Explorer
- Maps for Office
- ArcGIS Earth
- Dashboard
- Easy, Focused, and Ready-to-Use
App Builders

Enabling App Creation

Web App Templates

20+

HTML5/JavaScript

Web AppBuilder

Widgets

AppStudio

Native Apps

(Apple, Android, Windows, Linux)

Providing Easy, Configurable, and Extensible Tools

Design Once, Run Everywhere . . .
Developer Tools

- Enabling App Development for the Enterprise and Beyond

- Templates
- App Builders
- API/SDK Runtimes
- Esri Developer Network (EDN)

- HTML5
- Android
- C#
- QML
- REST
- Java
- Swift
- .NET
- Python
- Web
- Windows
- JavaScript
- C++
- Apple
- Qt
- Xamarin
- Objective-C

Providing Rich APIs, Runtimes, Content, and Services
Server: Enterprise Web GIS in Your Own Infrastructure

What's Coming:
- Big Data Geoanalytics
- New Utility Network
- GeoJSON

Providing Enterprise Management, Analysis, and Mapping

Supporting On-Premises and Cloud Platforms
A Complete SaaS Solution

New and Improved
- Smart Mapping
- Formal Metadata
- Better Administration
- Enhanced Printing
- Geocoding

What’s Coming
- Improved Search
- Advanced Analysis
- Usage Control
- Enhanced OGC Support
Solution Templates

Helping Users Be Successful

500,000+ Downloads

Apps, Maps, and More
- Ready-to-Use
- Best Practices
- Configurable

Local and State Government

Parks and Gardens

Public Safety and Emergency Management

Utilities and Telecommunications

Military and Security

... Fully Supported, Open Source, and Free
Solution Products

Provide Focused Applications

Production Mapping & Charting
- Topo Map
- Maritime Chart
- Aeronautical Chart
- Bathymetry

Decision Support Tools
- Business Analyst
- GeoPlanner

Specialized Tools
- Highways (LRS)
- Airports
- Geoportal
Road Map
Advancing the Platform

Incremental Software Release

10.3 Pro 1.0 2015
10.3.1 Pro 1.1
10.4 Pro 1.2 2016

Continuous Online Improvements

Big data
GeoAnalytics
Mobile
Massive 3D
Crowdsourcing
Vector tiles
Utility networks
Advanced navigation
Web raster analysis
Real-time
Location awareness
Modeling
UAV/Drone
Pro
Distributed GIS

... Focused on Quality, User Needs, and Innovation
Esri
Serving Our Users
Advancing GIS and Spatial Literacy

Strong and Growing

Dedicated to Science and Technology

Making a Difference
Partner Ecosystem

Committed to Your Success

CITRIX  IBM  HP  SAS  ORACLE  SAP  IBI  AMAZON  MICROSOFT

Delivering Thousands of Solutions
NGO Relationships

Enriching Our User Community

Making a Difference

5,000+ Organizations
Education
mApp your Way
Preparation for a Brighter Future
GIS
Is the Platform for Applying Geography Everywhere