## CURRICULUM VITAE

#### **Douglas A. Stow**

## Department of Geography San Diego State University 619-594-5498 stow@mail.sdsu.edu

<u>Areas of Specialization</u>: Remote sensing, image processing, biophysical geography, geographic information systems, land cover and land use change, semi-arid and coastal ecosystems, post-hazard damage assessment, and wildfire fuels and spread analyses.

#### **Education**:

Institution	Years <u>Attended</u>	<u>Degree</u>	<u>Major Field</u>
University of California, Santa Barbara	1974-1985	BA, MA, PhD	Geography
Scripps Institution of Oceanography, University of California, San Diego	1981	Intercampus Transfer	Satellite Oceanography/ Coastal Processes

#### **Title of Dissertation:**

Numerical Derivation of the Ocean Surface Velocity Field from Time Sequential Remote Sensing Methods

Academic Positions:				
Institution	<u>Rank</u>		Date	<b>Department</b>
Santa Barbara City College	Lecturer		1978-79	Earth Science
University of California	Lecturer		1978-82	Geography
Santa Barbara				
San Diego State University	Assistant Professor		1983-87	Geography
	Associate Professor		1987-91	Geography
	Full Professor		1991-2016	Geography
	Distinguished Professor		2016-2019	Geography
	Emeritus Distinguished Pr	rofessor	2019-	Geography
	4 4			
Other Professional Appoin	tments:	р	• , •	
Institution			osition	Date
University of California, San		Staff R	esearch	1978-83
Remote Sensing Research Unit		Associa	ate	
San Diego State University,		Co-Director		1987-present
Center for Earth Systems A	Analysis Research			
San Diego State University, Geography		Department Chair		1992-1997
San Diego State University, Academic Affairs		Special Assistant		2011-present
San Diego State University,	Geography	Interim	Department Ch	air 2019

Courses Taught:	
SDSU	
GEOG 101	Principles of Physical Geography
GEOG 104	Geographic Information Science
GEOG 504	Coastal and Submarine Physiography
GEOG 587/591(&L)	Remote Sensing of the Environment/Laboratory
GEOG 588/592(&L)	Intermediate Remote Sensing of the Environment/Laboratory
GEOG 687	Seminar in Remote Sensing
GEOG 688	Advanced Remote Sensing: Integration of RS with GIS
GEOG 688L	Advanced Remote Sensing Lab
GEOG 780	Seminar in Techniques of Spatial Analysis
GS 250	University Seminar
UCSB	
GEOG 115A	Aerial Photographic Interpretation
GEOG 115C	Intermediate Remote Sensing of Environment
GEOG 163	Environmental Pollution
<u>SBCC</u>	
ES 200	Remote Sensing of Environment
Courses Developed:	
<u>SBCC</u>	
ES 200	Remote Sensing of Environment
CDCU	
SDSU CEOC 104	Later fraction to Community Information Opiones (m/ M. Tarra and C. Darr)
GEOG 104	Introduction to Geographic Information Science (w/ M. Tsou and S. Rey)
	11L Introductory Remote Sensing of Environment
GEOG 588/592-592L	Intermediate Remote Sensing of Environment
GEOG 688	Advanced Remote Sensing: Integration of RS with GIS
GEOG 688L	Advanced Remote Sensing Laboratory

#### <u>Graduate and Undergraduate Theses and Special Studies</u> (C = completed) (I = in progress): Doctoral Degree

# Chair (14)

Dongmei Chen (C), Mary Freeman (C), Yuki Hamada (C), Caitlin Lippitt (C), Christopher Lippitt (C), Andrew Loerch (C), Stuart Phinn (C), Hsaio-Chien Shih (C), Emanuel Storey (C), Sory Toure (C), Yu-Hsin Tsai (C), Kellie Uyeda (C), Sally Westmoreland (C), Krista West (I).

Second Member (12)

Michael Beland (C), Magdalena Benza-Fiocco (C), Luc Claessens (C), Jie Dai (C), Ryan Engstrom (C), Debbie Fugate (C), Kristopher Kuzera (C), Anna Lopez (C), John Rogan (C), David Rother (C), Kris Taniguchi (C), Huijie Zhang (I).

# Outside Member (6)

Simon Benger, Australian National University (C), Gabriele Caccamo, University of Wollongong (C), Napolean Gudino Elizondo, Center for Scientific Research and Higher Education, Ensenada (C), Kasper Johansen, The University of Queensland (C), Joshua Kelly SDSU-UCSD Geodynamics (C), Michael Nielsen, Stockholm University (C).

#### Master's Degree

#### Chair (71)

Zlatina Anguelova (C), Eric Augenstein (C), Patsy Bearden (C), John Bennett (C), Nell Blodgett (C), Brian Bradshaw (C), Alice Brewster (C), Blake Burns (C), Elizabeth Bushnell (I), Michael Caldwell (C), Lina Cao (C), Caitlin Chason (C), Christopher Chavis (C), Doretta Collins (C), Kevin Contreras (C), Lauren Cooper (C), Jeff Duncan (C), Arman Eshraghi (C), Dillon Fitch (C), Brenna Fowler (I), Elena Gantcheva-Tarnavsky (C), Keith Greer (C), Yuki Hamada (C), Liana Herberer (C), Heidi Hudak (C), Andrew Kerr (C), Jeff LaMantia-Bishop (C), Christian Langevin (C), Steve Lathrop (C), Anna Lieberman (C), Pauline Longmire (C), Martin Lowenfish (C), Alexander McFadden (I), Martin Miles (C), Betsy Miller (C), Blair Mirka (C), Raghuram Narasimhan (C), Joel Nathanson (C), Nowshin Nawar (I), Bruce Nyden (C), Aaron Petersen (C), Seth Peterson (C), Heather Pray Minnoch (C), Matthew Plummer (C), Kathryn Prosser (C), Diane Rachels (C), Melissa Rosa (C), Chandler Ross (C), John Ryan (C), Gavin Schag (C), Eugene Schweizer (C), Keaton Shennan (C), Hsiao-chien Shih (C), Holly Smit (C), Thomas Smith (I), Rachel Snavely (C), Emanual Storey (C), Rick Sturm (C), Timothy Tidwell (C), Sory Toure (C), Yu Hsin Tsai (C), Matthew Twyman (I), David Van Mouwerik (C), Kelsey Warkentin (C), Christopher Webb (C), Richard Weiler (C), Sally Westmoreland (C), Jenny Williams (C), Elizabeth Witztum (C), Jeff Yen (C), Noah Young (C).

## Second Member (40)

Andres Abeyta (C), Jason Allen (C), Lisa Baer Wynn (C), Magdalena Benza-Fiocco (C), William Boynton (C), Anders Burvall (C), Lloyd Coulter (C), Dean Daniels (C), Heather Davis (C), Katy Dalton (C), Derren Duburguet (C), Ryan Engstrom (C), Jeff Fleming (C), Lynn Ford (C), Grant Fraley (C), Clint Garrison (C), Liang Guo (C), Nao Hisakawa (C), Joel Kramer (C), John Kimball (C), Kathryn Kozcot (C), Rasmus Larsen (C), Rebecca Lesher (C), Bruce Markman (I), Thomas McDowell (C), David McKinsey (C), Christine McMichael (C), Keith Pence (C), Meaghan Salinas (C), Ian Schmidt (C), Dawn Service (C), Timothy Schempp (C), David Shaari (C), Joseph Shandley (C), Debbie Turner (C), Milo Vejraska (C), William Walker (I), Weidong Wang (C), Shannon Webber (C), Zachary Werner (C).

## Third Member (31)

Joseph Adler - Geological Sciences (C), Alex Boisvert - Geological Sciences (C), Kathryn Boyer -Biology (C), Julie Desmond - Biology (C), Swati Dua – Elect. Eng. (C), Stacie Fetjek – Biology (C), Geoffrey Galvin - Geological Sciences (C), Lawrence Gurrola - Geological Sciences (C), Charles Hauser - Geological Sciences (C), Isabelle Kay - Biology (C), Leigh Klatsky - Biology (C), Wendy Kozlowsky – Biology (C), Danielle Lipski - Biology (C), Bernard Loveless – Elect. Eng. (C), Thien Mai - Biology (C), David Mark - Geological Sciences (C), Jean Meltzer - Physical Education (C), Kevin O'Connor – Biology (C), Lorraine Parsons - Biology (C), Jessica Plein - Biology (C), Azeem Rahman - Biology (C), Christopher Ross - Geological Sciences (C), Susan Rutherford - Biology (C), Martha Shaw - Geological Sciences (C), Linnea Spears - Biology (C), Gregson Taylor - Geological Sciences (C), Emma Tomaszewski - Biology (C), Brendon Walker – Geological Sciences (C), Donald Wells - Geological Sciences (C), Dustin Wood - Biology (C), Jinhong Zhou - Civil Engineering (C).

#### Senior Theses (2):

Shawn Burkhart (C), Shelly Evans (C).

## **Ph.D. Dissertations Supervised (completed):**

1. Chen, Dongmei. 2001. Multi-resolution Image Analysis and Classification for Improving Urban Land Use/Cover Mapping Using High Resolution Imagery.

- 2. Freeman, Mary Pyott 2012. An Analysis of Tree Mortality Using High Resolution Remotely-Sensed Data for Mixed-Conifer Forests in San Diego County.
- 3. Hamada, Yuki. 2010. Characterizing Conditions of California Sage Scrub Communities in Mediterranean-Type Ecosystems Using Remote Sensing.
- 4. Lippitt, Caitlin. 2013. Remote-Sensing Based Characterization of Herbaceous Vegetation in California Shrublands.
- 5. Lippitt, Christopher. 2012. Time Sensitive Remote Sensing.
- 6. Loerch, Andrew. 2022. Improving Disaster Response with Aerial Imagery Through UAS-based Image Acquisition and Analysis, Artificial Intelligence, and Timeliness Assessment
- 7. Phinn, Stuart. 1997. Remote Sensing and Spatial-Analytic Techniques for Monitoring Landscape Structure in Disturbed and Restored Coastal Environments.
- 8. Shih, Hsiao-chien. 2020. The Relative Timing of Human Migration and Land Cover and Land Use Change An Evaluation of Northern Taiwan from 1990 to 2015.
- 9. Storey, Emanuel. 2019. Uncoupling Impacts of Drought and Short-interval Fire on Southern California Chaparral Using Time-sequential Landsat Imagery.
- 10. Toure, Sory. 2017. Urban Land Cover and Land Use Change in Ghana: Connections to Demography and Health.
- 11. Tsai, Yu-Hsin. 2018. Monitoring Forest Cover and Land Use Change in Forest Reserves —Connecting Satellite Imagery to Anthropogenic Impacts.
- 12. Uyeda, Kellie. 2015. Spatial and Temporal Variation in Biomass Accumulation in Southern California Chaparral.
- 13. Westmoreland, Sally. 2001. Radiometric Correction of Multisensor Imagery.

## M.A. Theses Supervised (completed):

- Anguelova, Zlatina. 2007. Integrating Fire Behavior and Trafficability Models to Assess Fire Danger to Pedestrians within the San Diego-Mexico Border Zone.
- 2. Augenstein, Eric. 1989. Evaluation of SPOT/HRV Data for Kelp Inventories
- 3. Bearden, Patsy. 1988. Use of Satellite Remote Sensing to Determine the Distribution of the Pacific Mackerel (*Scomber Japnicus*) in the Eastern North Pacific.
- 4. Bennett, John. 1999. The Effect of Topography and Vegetation on Highway traffic Noise: An Investigation of Sound Levels in the Alvarado Canyon Transit Corridor of San Diego.
- 5. Blodgett, Nell. 2007. Investigating the Relationship Between Post-Fire Remnant Vegetation, Fire Behavior, and Fuel Age in Southern California Shrublands.

- 6. Bradshaw, Brian. 1997. Integrating High Resolution Digital Imagery and Digital Terrain Data for Mapping Restored Salt Marsh Habitat.
- 7. Brewster, Alice. 1996. Utilizing Geographic Technologies to Analyze the Nesting Habitat Preferences of the Belding's Savannah Sparrow
- 8. Burns, Blake. 1989. Spectral Reflectance and Spatial Characterization on Arctic Tundra Albedo in Northern Alaska.
- 9. Caldwell, Michael, 2011. Semi-automated Trail Delineation Based on Aerial Lidar and High Resolution Digital Imagery.
- 10. Cao, Lina. 2004. Updating Maps of Undocumented Immigrant Trails Along the U.S.-Mexico border Using Airborne Digital Multispectral Imagery.
- 11. Chason, Caitlin. 2007. Examining the Influence of Short-interval Fire Occurrence on Post-fire Recovery Patterns in Chamise Chaparral.
- 12. Chavis, Christopher, 2015. Assessing the Accuracy and Repeatability of Automated Photogrammetrically Generated Digital Surface Models from Unmanned Aerial System Imagery.
- 13. Collins, Doretta. 1991. Determining Land Use Change Through an Integration of Remote Sensing and GIS Technologies.
- 14. Contreras, Kevin. 2000. The Effects of Wildfire Suppression on Vegetation Type and Patch Pattern in Central Coastal California.
- 15. Cooper, Lauren. 2003. Testing Very-Low Altitude Digital Imaging for High Resolution Three-Dimensional Modeling.
- 16. Duncan, Jeff. 1991. Assessing the Relationship Between Spectral Vegetation Indices and Proportional Shrub Cover in Semiarid Environments.
- 17. Esraghi, Arman. 1995. An Evaluation of ADAR Image Based Methods for Estimating Cover Composition of Major Plant Forms in Restored Riparian Habitats
- 18. Fitch, Dillon. 2008. The link Between MODIS Vegetation Metrics and Hydrological Response Variables for Watersheds in Mediterranean-type Climate Zones
- 19. Greer, Keith. 2001. Vegetation Type Conversion in Los Penasquitos Lagoon: An Examination of the Role of Watershed Urbanization
- 20. Hamada, Yuki. 2005. Detecting Invasive Plant Species in Riparian Habitats of Southern California Using Airborne Hyperspectral Remote Sensing.
- 21. Heberer, Liana. 2023. Integration of Geomorphic Data in Manual and Semi-Automated Benthic Habitat Mapping of a Hawai'an Fringing Reef.
- 22. Hudak, Heidi. 2002. Assessing the Utility of High Resolution Airborne Digital Imagery to Map Benthic Cover for Shallow Waters of St. Vincent and the Grenadines.

- 23. Kerr, Andrew, 2017. Optimizing Radiometric Fidelity to Enhance Aerial Image Change Detection Utilizing Digital Single Lens Reflex (DSLR) Cameras.
- 24. Lamantia-Bishop, Jeff. 2010. Hurricane Emergency Response: Detecting Residential Damage Using Object Based Image Analysis.
- 25. Lathrop, Steve. 2010. Updating Maps of Foot Trail Networks for the US-Mexico Border Zone Using Semi-automatic Feature Extraction Methods and Very High Resolution Remotely Sensed Imagery.
- 26. Langevin, Chris. 2001. A Neutral Network Approach for Remote Sensing-based Change Detection and Identification: Map-updating in a Dynamic Urban Landscape in Southern California.
- 27. Lieberman, Anna. 2004. Mapping Fire Effects in Southern California Mediterranean Vegetation Using Remote Sensing Data.
- 28. Longmire, Pauline. 2001. Use of Very High Spatial Resolution Remotely Sensed Imagery for Assessment of Land Cover Change in the Coastal Shrubland Vegetation of Southern California
- 29. Lowenfish, Martin. 2003. Using Remote Sensing and Landscape Metrics to Predict the Health of a Semi-Arid Wyoming Rangeland.
- 30. Miles, Martin. 1990. Incorporating Spatially Varying Parameters Methods Into Remote Sensing Based Water Quality Statistical Modeling.
- 31. Miller, Betsy, 2005. Detection and Delineation of Vernal Pools Using High Resolution, Multispectral Digital Imagery.
- 32. Mirka, Blair, 2020. Evaluation of Thermal Infrared Imaging from Unmanned Aerial Vehicles for Arboreal Wildlife Surveillance.
- 33. Narasimhan, Raghuram, 2009. The Utility of Daily MODIS Products for Analyzing Early Season Vegetation Dynamics within the North Slope of Alaska.
- 34. Nathanson, Joel. 1992. The Effectiveness of Generating Regional-Scale Land Use GIS Layers from Remotely Sense Data.
- 35. Nyden, Bruce. 2001. Multi-Temporal Change Analysis of a Southern California Salt Marsh Using Airborne Digital Imagery
- 36. Petersen, Aaron. 2004. Interannual Arctic Tundra Vegetation Productivity Trends Estimated Using AVHRR-NDVI Datasets with Different Spatial Sampling Schemes.
- 37. Peterson, Seth. 2000. Using a Multiple Endmember Linear Mixture Model to Study Chaparral Regrowth on MCAS Miramar.
- Plummer, Mathew. 2018. The Effect of Shadow Removal on the Co-registration Accuracy of Aerial Image Pairs

- 39. Pray, Heather. 1997. How Sensitive is Environmentally Sensitive Lands Mapping?
- 40. Prosser, Kathryn. 1995. An Analysis of Image Processing Techniques for Regional Vegetation Mapping in Coastal Southern California.
- 41. Rosa, Melissa. 2009. Mapping Fuels at the Wildland-Urban Interface for Wildfire Modeling Using Color Ortho-Images and LiDAR Data.
- 42. Rachels, Diane 2013. Comparison of Chaparral Re-growth Patterns between Santa Ana Wind-Driven and Non-Santa Ana Fire Areas.
- 43. Ross, Chandler 2023. Machine Learning Approach for Burned Area Mapping for Southern California.
- 44. Ryan, John. 2003. The Human Tide: An Assessment of Procedures for Estimating Daily Peak Beach Attendance.
- 45. Schag, Gavin. 2020. Evaluating Landscape-level Controls of Wildfire Spread Rates Using Repetitive Airborne Thermal Infrared Imagery
- 46. Schweizer, Eugene, 2017. Automating Near Real-Time, Post-Hazard Detection of Crack Damage to Critical Infrastructure.
- 47. Shennan, K. 2021. Geovisualization and Descriptive Analysis of Landscape Level Wildfire Behavior Using Repeat Pass Airborne Thermal Infrared Imagery.
- 48. Shih, Hsiao-chien. 2015. Determining the Type and Starting Time of Land Cover and Land Use Change in Ghana Based on Discrete Analysis of Dense Landsat Image Time Series.
- 49. Smit, Holly. 2001. Remote Sensing of Deforestation in the Mosquitia Region of Honduras.
- 50. Snavely, Rachel. 2017. Mapping Vegetation Community Types in a Highly-disturbed Landscape: Integrating Hierarchical Object-based Image Analysis with Digital Surface Models.
- 51. Storey, Emanual. 2015. Postfire Regrowth Trajectories of Chamise Chaparral Based on Multitemporal Landsat Imagery.
- 52. Sturm, Richard. 1991. Mapping of Pleistocene-Age Shoreline in the Seismically-Active Salton Trough Using Remotely Sensed Thermal Infrared Multispectral Scanning (TIMS) Data.
- 53. Tarnavsky, Elena. 2003. Spatial and Radiometric Fidelity of High Resolution Airborne Multispectral Imagery in the Context of Land-Cover Change Analyses.
- 54. Tidwell, Timothy. 2012, Image classification approaches for mapping Arundo donax along the San Diego River using high spatial resolution imagery
- 55. Toure, Sory. 2011. Histogram Curve Matching Approaches for Object-based Image Classification of Land Cover and Land Use.
- 56. Tsai, Yu-Hsin. 2011.Delineation of New Buildings in Accra, Ghana Using Multitemporal Quickbird Satellite Imagery.

- 57. Van Mouwerik, David. 1993. Assessing Vegetation Abundance of *Spartina Foliosa* in a Southern California Salt Marsh Using Remote Sensing.
- 58. Warkentin, Kelsey. 2020. Multi-temporal Fractional Cover Estimation of Shrubs on San Clemente Island.
- 59. Webb, Christopher. 1989. Inlet Dynamics for Southern California.
- 60. Weiler, Richard. 1988. Spatial Analysis of Land Use Cover: An Investigation into the Scale and Surface Cover Class Divisions.
- 61. Westmoreland, Sally. 1990. Use Satellite Imagery and Ancillary Data to Update Vector-Coded Geographic Information System.
- 62. Williams, Jennifer. 2005. Environmental and Forest Fragmentation Effects on Overwintering Monarch Butterflies in Central Mexico.
- 63. Witztum, Elizabeth. 2001. Analyzing Direct Impacts of Recreation Activity on Coastal Sage Scrub Habitat with Very High-Resolution Multi-spectral Imagery.
- 64. Yen, Jeff, 2020. Histogram Curve Matching Approach for Geographic Object-Based Image Change Analysis of Urban Land Use.
- 65. Young, Noah, 2021. Mapping Environmentally Sustainable Urban Development Within Six US Cities Through Object-based Change Analysis of Aerial Orthoimagery.

## Senior Theses

- 1. Burkhardt, Shawn. 2005. Comparative Analysis of IFAR and Photogrammetrically Derived Digital Elevation Models.
- 2. Evans, Shelly. 1987. Stream Runoff in Southern California.

## **<u>Refereed Publications</u>:**

- 1. Stow, D.A. and J.E. Estes, 1981. Landsat and Digital Terrain Data for County-Level Resource Management, *Photogrammetric Engineering and Remote Sensing*, 47(2): 215-222.
- Estes, J.E., D.A. Stow and J.R. Jensen, 1982. Present and Future Directions for Monitoring Land Use Changes by Remote Sensing Techniques, *Remote Sensing for Resource Management*, J.L. Sanders (ed.), Soil Conservation Society of America.
- 3. Stow, D.A., 1983. Temporal Analysis section of Manual and Digital Analysis in the Visible and Infrared Regions, Chapter 24, *in* : J.E. Estes, E.J. Hajic and L.R. Tinney (eds.), *Manual of Remote Sensing*, 2nd ed., Vol. I, Falls Church, VA: American Society of Photogrammetry.
- 4. Stow, D.A., 1985. Eulerian Velocity Measurements of Hydrodynamic Surfaces Using Optical Flow Methods, *International Journal of Remote Sensing*, 6(12): 1855-1860.
- 5. Stow, D.A. and H.H. Chang, 1987. Magnitude-Frequency Relationship of Coastal Sand Delivery by a Southern California Stream, *Geo-Marine Letters*, 7(4): 217-222.

- 6. Stow, D.A., and H.H. Chang, 1987. Coarse Sediment Delivery by Coastal Streams to the Oceanside Littoral Cell, California, Shore and Beach, 55(1): 30-40.
- 7. Stow, D.A., 1987. Numerical Derivation of a Hydrodynamic Surface Flow Field from Time Sequential Remotely Sensed Data, *Remote Sensing of Environment*, 23(1): 1-22.
- 8. Stow, D.A., 1987. Remotely Sensed Tracers for Hydrodynamic Surface Flow Estimation, *International Journal of Remote Sensing*, 8(3): 261-278.
- 9. Stow, D.A., 1988. Remote Sensing and Image Processing Requirements for Eulerian Flow Field Estimation, *International Journal of Remote Sensing*, 9(3):351-364.
- 10. Chang, H.H. and D.A. Stow, 1988. Sediment Delivery in a Semi-Arid Coastal Stream, *Journal of Hydrology*, 99: 201-214.
- Stow, D., B. Burns and A. Hope, 1989. Mapping Arctic Tundra Vegetation Types Using Digital SPOT/HRV-XS Data: A Preliminary Assessment, *International Journal of Remote Sensing*, 10(8): 1451-1457.
- 12. Webb, C.K., D.A. Stow and K. Baron, 1989. Morphologic Response of an Inlet-Barrier Beach System to a Major Storm, *Shore and Beach*, 57(4): 37-40.
- 13. Chang, H.H. and D.A. Stow, 1989. Mathematical Model of Fluvial Sand Delivery, *Journal of Waterway, Port, Coastal, and Ocean Engineering*, 115(3): 311-326.
- 14. Stow, D.A. and R.C. Smith, 1989. Coastal and Marine Water Resources section of Remote Sensing chapter, *in: Geography in America*, G.L. Gaile and C. J. Willmott (eds.), Columbus: Merrill Publishing.
- 15. Stow, D., D. Collins and D. McKinsey, 1990. Land Use Change Detection Based on Multi-date Imagery From Different Satellite Sensor Systems, *Geocarto International*, 5(3): 1-12.
- 16. Webb, C.K., D.A. Stow and H.H. Chang, 1990. Morphodynamics of Southern California Inlets, *Journal of Coastal Research*, 7(1): 167-187.
- 17. Augenstein, E., D. Stow and A. Hope, 1991. Kelp Inventories Using SPOT Multi-spectral Data, *Photogrammetric Engineering and Remote Sensing*, 57(5): 501-509.
- Davis, F., D. Quattrochi, M. Ridd, N. Lam, S. Walsh, J. Michaelsen, J. Franklin, D. Stow, C. Johannsen and C. Johnston, 1991. Environmental Analysis Using Integrated GIS and Remotely Sensed Data: Some Research Needs and Priorities, *Photogrammetric Engineering and Remote Sensing*, 57: 689-697.
- 19. Weiler, R.A. and D.A. Stow, 1991. Characterizing Spatial Scales of Remotely Sensed Surface Cover Variability, *International Journal of Remote Sensing*, 12(11): 2237-2257.
- 20. Westmoreland, S. and D.A. Stow, 1992. Category Identification for Changed Land-Use Polygons in Integrated Image Processing/ Geographic Information Systems, *Photogrammetric Engineering and Remote Sensing*, 58: 1593-1599.

- 21. Hope, A., J. Fleming, D. Stow and E. Aguado, 1992. Characterizing Tussock Tundra Albedo on the North Slope of Alaska, *Journal of Applied Meteorology*, 30(8): 1200-1206.
- 22. Miles, M.M., D.A. Stow and J.P. Jones III, 1992. Incorporating Spatially-Varying Parameter Methods into Remote Sensing-based Water Equality Modeling, *in: Applications of the Expansion Method*, E. Casetti and J.P. Jones, III (eds.), 279-298, London: Routledge.
- 23. Stow, D.A., 1992. Shoreline Structures section of Structures and Cultural Features chapter, *in: Manual of Air Photo Interpretation*, W. Philipson (ed.)
- 24. Stow, D., B. Burns and A. Hope, 1993. Spatial, Spectral and Temporal Characteristics of Arctic Tundra Vegetation, *International Journal of Remote Sensing*, 14: 2445-2462.
- 25. Stow, D., A. Hope and T. George, 1993. Reflectance Characteristics of Arctic Tundra Vegetation from Aerial Radiometry and Videography, *International Journal of Remote Sensing*, 14: 1239-1244.
- Stow, D., A. Hope, D. McKinsey, H. Pray, 1993. Deriving Dynamic Information on Fire Fuel Distributions in Southern California Chaparral from Remotely Sensed Data, *Landscape and Urban Planning*, 24: 113-127.
- 27. Hope, A., J. Kimball and D. Stow, 1993. The Relationship Between Tussock Tundra Spectral Reflectance Properties and Biomass, and Vegetation Composition, *International Journal of Remote Sensing*, 14: 1861-1874.
- 28. Duncan, J., D. Stow, J. Franklin and A. Hope, 1993. Assessing the Relationship Between Spectral Vegetation Indices and Shrub Cover in the Jornada Basin, New Mexico, *International Journal of Remote Sensing*, 14: 3395-3416.
- 29. Hope, A. and D. Stow, 1993. An Analysis of Tree Mortality in Southern California Using High Spatial Resolution Remotely Sensed Spectral Radiances: A Climatic Change Scenario. *Landscape and Urban Planning*, 24: 87-94.
- 30. Zhou, J., H. Chang and D. Stow, 1993. A Model for Phase Lag of Secondary Flow in Rivers, *Journal* of Hydrology, 146: 73-88.
- Hope, A. and D. Stow, 1995. Shortwave Reflectance Properties of Arctic Tundra, in: Landscape Function and Disturbance in Arctic Tundra, J. Reynolds and J. Tenhuenen (eds.), Ecological Studies, Vol. 120, Springer-Verlag, Heidelberg.
- Hope A., J. Fleming, G. Vourlitis, D. Stow, W. Oechel and T. Hack, 1995. Relating CO2 Fluxes to Spectral Vegetation Indices in Tundra Landscapes: Importance of Footprint Definition, *Polar Record*, 31: 245-250.
- Stow, D., 1995. Monitoring Ecosystem Response to Global Change: Multitemporal Remote Sensing Analyses, J. Moreno and W. Oechel (ed.s), Ecological Studies, Vol. 117, Springer-Verlag, Heidelberg, 254-286.
- 34. Phinn, S., D. Stow and J. Zedler, 1996. Monitoring Wetland Habitat Restoration Using Airborne Multi-spectral Image Data in Southern California, *Ecological Applications*, 4: 412-422.

- 35. Phinn, S., J. Franklin, A. Hope and D. Stow, 1996. Biomass Distribution Mapping Using Airborne Digital Video Imagery and Spatial Statistics in a Semi-arid Environment, *Journal of Environmental Management*, 47: 139-164.
- 36. Phinn, S. and D. Stow, 1996. Use of Remote Sensing to Monitor Vegetation Properties, in: *Restoring Tidal Wetlands: A Scientific Perspective and Southern California Focus*, J. Zedler, (Ed.) La Jolla, California: California Sea Grant College, pp. 88-98.
- 37. Parrott, R., S. Carnevale, and D. Stow, 1996. Updating Vector Land Use Inventories Using Multi-Date Satellite Imagery, in Raster Imagery in Geographic Information Systems, S. Morain and S Lopez Baros (eds.), Onward Press, Santa Fe, N.M., pp. 313-321.
- 38. Stow, D., A. Hope, A. Nguyen, S. Phinn and C. Benkelman, 1996. Monitoring Detailed Land Surface Changes from an Airborne Multispectral Digital Camera System, *IEEE Transactions on Geoscience and Remote Sensing*, 34: 1191-1202.
- Stow, D., D. Chen, and R. Parrott, 1996. Enhancement, Identification, and Quantification of Land Cover Change, in Raster Imagery in Geographic Information Systems, S. Morain and S Lopez Baros (eds.), Onward Press, Santa Fe, N.M., pp. 307-312.
- 40. Sturm, R., D. Stow and T. Rockwell, 1996. Mapping Pleistocene Shorelines with Thermal Infrared Multispectral Scanner Data in the Seismically-active Salton Trough, *International Journal of Remote Sensing*, 17: 553-575.
- 41. McMichael, C.E., A.S. Hope, D.A. Stow, and J.B. Fleming, 1997. The Relation Between Active Layer Depth and a Spectral Vegetation Index in Arctic Tundra Landscapes of the North Slope of Alaska, *International Journal of Remote Sensing*, 18: 2371-2382.
- 42. Stow, D., A. Hope, W. Boynton, S. Phinn, D. Walker and N. Auerbach, 1998. Satellite-Derived Vegetation Index and Cover Type Maps for Estimating CO2 Flux for Arctic Tundra Regions, *Geomorphology*, 21: 313-327.
- 43. Coulter, L., D. Stow, B. Kiracofe, C. Langevin, D. Chen, S. Daeschner, D. Service, and J. Kaiser, 1999. Deriving Current Land Use Information for Metropolitan Transportation Planning Through Integration of Remotely Sensed Data and Data Layers in Geographic Information Systems, *Photogrammetric Engineering and Remote Sensing*, 65: 1293-1300.
- 44. Stow, D., 1999. Reducing Misregistration Effects for Pixel-level Analysis of Landcover Change, *Remote Sensing Letters - International Journal of Remote Sensing*, 20: 2477-2483.
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## **Manuscripts Submitted to Refereed Journals**

- 1. Ross, C., D. Stow, D. Sousa, M. Jennings, A. Nara, and P. Riggan, submitted. Machine Learning Approach to Landsat Burned Area Mapping for Southern California, *International Journal of Remote Sensing*.
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- Stow, D., L. Coulter, C. Langevin, D. Service and J. Kaiser, 1998. Contextual Classification of Changing Land Use Using Multiple Geo-spatial Data Sources: A Project of the NASA Affiliated Research Center at SDSU, Shenandoah Mountain Geographics Partnership, December, 1998.
- Wesser, A., L. Tucker, D. Stow, D. Chen, S. Daeschner, and J. Kaiser, A. DeNoble, 1998. A Microfeature Change-Detection System Utilizing Very-high Resolution Image Data and Image Processing: A Project of the NASA Affiliated Research Center at SDSU, Aerial Fotobank Partnership, December, 1998.
- 13. Hope, A., L. Coulter, D. Stow, D. Service, S. Peterson, J. Kaiser, A. Telck, P. Hickman, J. Svejkovsky, and J. Conger, 2000. Application of High Spatial Resolution Remotely-sensed Imagery to the Management of Sugarbeet Complexes in California's Imperial Valley: A Project of the NASA Affiliated Research Center at SDSU, Holly Agricultural Research Center Partnership, February, 2000.
- 14. Stow, D., L. Coulter, M. Lowenfish, S. Peterson, A. Hope, and J. Kaiser, 2000. Assessment of the Utility of Image-based Methods for Efficient and Objective Rangeland Monitoring: A Project of the NASA Affiliated Research Center at SDSU, Ranchers Management Corporation partnership, February, 2000.
- 15. Hope, A., L. Coulter, D. Stow, D. Service, T. Schutte, S. Redlin, S. Peterson, M. Lowenfish, J. Kaiser and A. Walters, 2001. Irrigated Vegetation Assessment in Urban Environments: A project of the NASA Affiliated Research Center at SDSU, AgriCast Incorporated Partnership, May, 2001
- 16. Lukinbeal, C., J. Kaiser, J. Ryan, D. Stow, K McCurdy and W. Jones, 2001. Using Remote Sensing, GIS and Visualization Techniques to Optimize Location Management for a Regional Film Production Market: A project of the NASA Affiliated Research Center at SDSU, San Diego Film Commission Partnership, January, 2001.
- 17. Stow, D., A. Hope, L. Coulter, J. Kaiser, D. Service, S. Redlin, K. Schutte and A. Walters, 2001. Utility of ERDAS Imagine Expert Classifier to Improve Image-based Mapping of Irrigated Vegetation in Urban Environments: A project of the NASA Affiliated Research Center at SDSU, AgriCast Incorporated Partnership, May, 2001.
- Coulter, L., A. Hope, D. Stow, J. Ryan, and J. Kaiser, 2001. The Utility of High Spatial Resolution Multispectral Imagery for Mapping and Monitoring Vernal Pool Habitat in Transitional Urban Environments A project of the NASA Affiliated Research Center at SDSU, City of San Diego Partnership, August, 2002.
- 19. O'Leary, J.F. and D. Stow, 2002. Vegetation and Land Cover Mapping on Marine Corps Air Station Miramar, San Diego, California. Final Report produced for Marine Corps Air Station Miramar, Environmental Management Department and Southwest Division, Naval Facilities Engineering Command, San Diego, CA. Produced by the Center for Earth Systems Analysis and Research, Department of Geography, San Diego State University. 65 p., August, 2002.
- 20. Stow, D., J. Kaiser, L. Coulter, L. Cao, J. Ryan, K. Krauss, 2002. Evaluation and Use of Helicopter Collected High Resolution, Multispectral Imagery to Map Smuggler Trails into the U.S. across the Mexican Border. A project of the NASA Affiliated Research Center at SDSU, Blackhawk Helicopters, Inc. Partnership, April, 2002.

- 21. Tsou, M., L. Guo, J. Kaiser, E. Almanza, and D. Stow, 2002. Web-based Geospatial Information Services and Analytic Tools for Natural Habitat Conservation and Management A project of the NASA Affiliated Research Center at SDSU, Ed Almanza and Associates, Inc. Partnership, August, 2002.
- 22. Cao, L., D. Stow, J. Kaiser, L. Coulter, and D. Johnson, 2003. Smuggler's Blues: Mapping Border Trails with Multispectral Imagery, <u>Geospatial Solutions</u>, 32-38.
- 23. Coulter, L., D. Stow, A. Hope, J. O'Leary, J. Franklin, A. Johnson, E. Witztum, A Petersen, P. Longmire, A. Wall, J Rogan, and E. Almanza, 2003. Regional change monitoring of habitat reserve systems with very high resolution remotely sensed data. NASA Earth Science Directorate Final Report, Food and Fiber Applications of Remote Sensing, Grant # NAG13-99017, 173 pp.
- 24. Kaiser, L. Cao, L. Coulter, and D. Stow, 2003. Evaluation of a Semi-automated Feature Extraction Method to Delineate and Map Smuggler Trails into the U.S. From Across the Mexican Border, A project of the NASA Affiliated Research Center at SDSU, Conservation Biology Institute Partnership, February, 2003.
- 25. Stow, D. E. Tarnavsky, L. Coulter, and S. Carnevale, 2003. Optimum Image Acquisition Procedures for Generating Very High Resolution Multi-temporal Data Sets. A project of the NASA Affiliated Research Center at SDSU, San Diego Association of Governments Partnership, August, 2003.
- 26. Stow, D., M. Niphadkhar, and J. Ryan, 2003. Determining the User Community and Commercial Market for High Resolution Image-Derived Products in Support of Detailed Vegetation Monitoring. A project of the NASA Affiliated Research Center at SDSU, Conservation Biology Institute Partnership, May, 2003.
- 27. Coulter, L., D. Stow, Y. Hamada, A. Lieberman, S. Lathrop, J. Kaiser, J. Jafolla, L. Hendricks, J. Gilfillan, and J. Giessow, 2004. Assessment of Hyperspectral and Multispectral Imagery for Mapping Invasive Plant Species within Southern California, A project of the NASA Affiliated Research Center at SDSU, Santa Margarita and San Luis Rey Weed Management Area Partnership, April, 2004.
- 28. Stow, D., J. Kaiser, M. Niphadkhar, E. Tarnavsky, A. Lieberman, L. Coulter, and L. Guo, 2004. Monitoring Changes in Fuel Moisture Conditions of Southern California Chaparral Based on Time Series of MODIS-Derived Indices, a project of the NASA Affiliated Research Center at SDSU, California Department of Forestry and Fire Protection Partnership, March, 2004.
- 29. Coulter, L., Kropp, S., Stow, D. and Eddie Villavicencio, 2005. Mapping Vegetation Fire Fuels in San Diego City Canyons Using Remotely Sensed Imagery. A project of the NASA Affiliated Research Center at SDSU, City of San Diego Fire-Rescue Department Partnership, June 2005.
- 30. Hamada,Y., D. Stow, L. Coulter, A. Lieberman, S. Lathrop, J. Kaiser, J. Jafolla, L. Hendricks, J. Gilfillan, and J. Giessow, 2005. Assessment of Hyperspectral and Multispectral Imagery for Mapping Invasive Plant Species within Southern California. A project of the NASA Affiliated Research Center at SDSU, Surface Optics Corporation, Inc. and Santa Margarita and San Luis Rey Weed Management Area Partnership, March, 2005.
- 31. Stow, D., M. Niphadkar, J. Kaiser, P. Scully and T. Porter, 2005. Monitoring Changes in Live Fuel Moisture Conditions of Southern California Chaparral Based on Time Series of MODIS-derived

Indices. A project of the NASA Affiliated Research Center at SDSU, California Department of Forestry and Fire Protection, San Diego Unit Partnership, June 2005.

- 32. Coulter, L., D. Stow, M. Rosa, S. Lathrop, T. Dougherty, and D. Ochoa, 2009. Assessment of Commercial High Spatial Resolution Imagery for Border Monitoring NASA Research, Education, Application Solutions Program Final Report, June 2009.
- 33. Coulter, L., D. Stow, M. Tsou, A. Hope, P. Jankowski, and J. Weeks, 2009. A Border Security Spatial Decision Support System Driven by Remotely Sensed Data Inputs, NASA Research, Education, Application Solutions Program Final Report, June 2009.
- 34. Coulter, L., D. Stow, M. Tsou, A. Hope, P. Jankowski, Spatial-temporal Patterns of Smuggling and Migration, National Center for Border Security and Immigration SDSU Year 1 Report, August 2009.
- 35. Coulter, L., D. Stow, C. Tsai, M. Caldwell, and J. Metcalf, Assessment of High Spatial Resolution Satellite Imagery for Mapping Airport Features, Federal Aviation Administration, Technical Report, September, 2010.
- 36. Stow, D., J. Weeks, R. Engstrom, L. An, L.Coulter, D. López-Carr, M. Benza, S. Toure, H. Shih, Y. Tsai, F. Mensah, A. Sandborn, S. Crook, Q. Yu, N. Ibanez, H. Taflin, A. Kerr, A. Copenhaver, Yang Qi, J. Burgdorfer, and K. Clarke. The Urban Transition in Ghana and Its Relation to Land Cover and Land Use Change Through Analysis of Multi-scale and Multi-temporal Satellite Image Data, NASA Land Cover and Land Use Change Interdisciplinary Science Program Earth Science Division, Science Mission Directorate, NASA Award Number: NNX12AM87G, Summary of Research Results, October 2016.

# **Scholarly Awards and Honors:**

- 1. SDSU Summer Faculty Fellow, 1984.
- 2. Remote Sensing Society; Best letter for 1985, for "Eulerian Velocity Measurements of Hydrodynamic Surfaces using Optical Flow Methods." In *Remote Sensing Letters International Journal of Remote Sensing*.
- 3. SDSU Meritorious Performance and Professional Promise (MPPP) Award, 1987-88 for Professional Growth.
- 4. SDSU Meritorious Performance and Professional Promise (MPPP) Award, 1989-90 for Professional Growth, Teaching Effectiveness and Service.
- 5. SDSU Alumni Outstanding Faculty Award for the University, 1996.
- 6. 2004 Leica Geosystems Award for Best Scientific Paper in Remote Sensing *(Photogrammetric Engineering and Remote Sensing* journal) awarded by American Society of Photogrammetry and Remote Sensing (John Rogan, lead author).
- 7. 2004 Leica Geosystems Third Place Award for Best Applications Paper in Remote Sensing *(Photogrammetric Engineering and Remote Sensing* journal) awarded by American Society of Photogrammetry and Remote Sensing (Dongmei Chen, lead author).

- 8. Association of American Geographers (AAG) Remote Sensing Specialty Group (RSSG), Outstanding Contributions in Remote Sensing Award, 2004.
- 9. SDSU President's Top 25 Award, April, 2004.
- 10. Phi Beta Kappa SDSU Faculty Lecturer 2008-09
- 11. Presidential Leadership Award, San Diego State University, 2009
- 12. SAIC John Estes Memorial Teaching Award American Society for Photogrammetry and Remote Sensing, 2013
- 13. American Society for Photogrammetry and Remote Sensing, ASPRS Fellow Award 2014.
- 14. Albert W. Johnson University Research Lectureship, SDSU, 2016.
- 15. John Jensen Distinguished Lecture Series, Annual Lecturer (second in series), New Orleans, LA, 2018.

# **Research Contracts and Grants:**

- California Institute of Technology President's Fund (NASA) grant; Mapping Pleistocene Shoreline Deposits from Multi-spectral Thermal Infrared and other Remotely Sensed Data for Seismically-active Salton Trough, \$36,000. 1986-1987
- 2. Principal Investigator, SDSU Grants-in-Aid for Faculty Research; An Assessment of Pacific Mackerel Habitat Using Remotely Sensed Data, \$2,000. 1987.
- 3. Co-Investigator, California Sea Grant Program (NOAA) grant; Maintenance of Entrance Channels of Coastal Lagoons and River Mouths, \$180,000. 1986-1989.
- 4. Co-Investigator, Department of Energy subcontract; R4D Arctic Tundra Project, \$460,000. 1987-1991.
- 5. Co-Investigator, State of California Department of Parks and Recreation Contract; Ecological Monitoring at Rancho Cuyamaca State Park, \$65,000. 1987-93.
- 6. Principal Investigator, NASA EOCAP Contract, Efficient Updates of Vector-Coded Geographic Information Systems Using Remotely Sensed Data, \$600,000. 1988-1991.
- 7. Collaborator, NSF Grant, Jornada Long Term Ecological Research Program, \$700,000. 1989-93
- 8. Principal Investigator, High Resolution Digital Imaging for Habitat Restoration Projects (Riparian Ecosystems), \$35,000, California Dept. of Transportation. 1992-94.
- 9. Principal Investigator, High Resolution Digital Imaging for Coastal Wetland Restoration Projects, \$300,000, Southern California Edison. 1992-95.
- 10. Co-Investigator, Regional Estimates of CO2 Flux for Arctic Tundra Ecosystems, NSF Grant, (Walt Oechel, P.I.), \$1,400,000. 1993-1998.

- 11. Co-Investigator, GIS Mapping Project for Bi-national Coordinated Land-Use Planning and Education in the Tijuana River Watershed, NOAA Contract, (Richard Wright, P.I.) \$136,000. 1994-1995.
- 12. Co-Investigator, High Resolution Multispectral Imaging for Environmental Monitoring Applications, NASA and Positive Systems, Inc. Subcontract, (Cody Benkelman, P.I.), \$195,000. 1994-1996.
- 13. Principal Investigator, Estuarine Wetland and Watershed Inventory Using NOAA's CoastWatch Change Analysis Project Protocol in California's Central Coast, NOAA and Calif. Coastal Commission, \$13,000. 1995-96.
- 14. Principal Investigator, Use of High Resolution Digital Camera Data to Map Wildlife Habitat in the Torrey Pines State Park Reserve, State of California Parks and Recreation and Los Penasquitos Lagoon Foundation, \$12,000. 1996-1997.
- 15. Co-Investigator, Geo-spatial Technologies for Monitoring Shrubland Habitats in Southern California, Electrical Power Research Institute Contracts, (Ed Almanza, P.I.), \$60,000. 1997-1999.
- 16. Principal Investigator, NASA Visiting Investigator Program Affiliate Center, NASA Contract, \$475,000, 1997-1999.
- Co-Investigator, NSF/DOE/NASA TECO Program, Patterns and Controls of Temporal Variation in CO<sub>2</sub> Sequestration and Loss from Arctic Ecosystems, National Science Foundation, (Walt Oechel, P.I.). \$260,000, 1998-2000.
- 18. Co-Investigator, Regional Variability in Carbon and Energy Fluxes: Towards a Global Synthesis, NSF Land-Air-Ice-Interactions ATLAS Study Grant, (Walt Oechel, P.I.), \$2,100,000 1999 2004.
- 19. Principal Investigator, US Department of Transportation, Subcontract for Shenandoah Mountain Geographics, Inc., Updating Land Use Information in Support of Transportation Planning, \$32,000, 1999-2000.
- 20. Principal Investigator, NASA Remote Sensing Applications Research in Agriculture, Forestry and Range Resources Management, Regional Change Monitoring of Habitat Reserve Systems with Very High Resolution Remotely Sensed Data, \$190,000/yr., 1999-2003.
- 21. Principal Investigator, California Department of Fish & Game Subcontract to the City of San Diego, Application of Digital Imaging Technologies for Monitoring and Managing MSCP/NCCP Reserves, \$141,000 1999-2001.
- 22. Co-Investigator, Operational Monitoring of Alteration in Regional Land Cover Using Multitemporal Remote Sensing Data, NASA Land-Cover and Land-Use Change Program Grant (Janet Franklin, P.I.), \$360,000, 1999–2003.
- 23. Co-Investigator, Applying Remote Sensing/GISA to Arab Fertility, NSF Geography and Regional Science Program Grant (John Weeks, P.I.), \$350,00, 2001-2004.
- 24. Co-Investigator, San Diego County-Baja California Water Quality Prediction and Monitoring Program. California State Water Resources Control Board. (Richard Wright, P.I.), \$190,000. 6/2001 through 8/2003.

- 25. Principal Investigator, City of San Diego, Vernal Pool Change Detection at the Otay Mesa Vernal Pool Restoration Site and Habitat Quality Evaluation in Marron Valley, \$53,000, 2002-2003.
- 26. Principal Investigator, NASA Affiliated Research Center, Earth Science Applications Division, \$992,000 2000-2006.
- 27. Principal Investigator, Spatial Decision Support System for Border Security, NASA Research Applications and Education Solutions Network, Earth Science Applications Division, \$1,800,000, 2003-2008.
- 28. Co-Investigator, Intra-urban Health Assessed by Remote-sensing and GIS, National Institute of Child Health and Human Development, (John Weeks, P.I.), \$208,000, 2004-2006.
- 29. Co-Investigator, Regional Hydrological Response of Semi-Arid Mediterranean Climate Watersheds to Land-Cover/Land-Use Variability, NASA Land-Cover and Land-Use Change, (Allen Hope, P.I.), \$586,000, 2005-2008.
- 30. Co-Investigator, Health, Poverty and Place: Modeling Inequalities in Accra Using Remote Sensing and GIS, National Institute of Child Health and Human Development, (John Weeks, P.I.), \$2,500,000, 2007-2013.
- 31. Co-Investigator, Office of National Drug Control Policy, Counter-Drug Technology Assessment Center Target Mapping System (Eric Frost, P.I.), \$2,200,000, 2007-2008.
- 32. Co-Investigator, Department of Homeland Security, Spatial-temporal Patterns of Smuggling and Migration, National Center for Border Security and Immigration, University of Arizona, \$430,000, July 2008- June 2014.
- 33. Principal Investigator, Federal Aviation Administration, Satellite Imagery Assessment, \$111,000, January December 2010.
- 34. Principal Investigator, US Forest Service, Airborne Remote Sensing to Enable Hazardous Fuels Reduction, Forest Health Protection, Rehabilitation and Hazard Mitigation Activities on Federal Lands, \$435,000, March 2010 – February 2013.
- 35. Principal Investigator, Department of Homeland Security, Rapid, High Spatial Resolution Image Assessment of Post-Earthquake Damage Assessment, \$245,000, July 2011 February 2013.
- 36. Co-Investigator, Evaluation and Refinement of Vegetation Monitoring Methods for the San Diego Multispecies Conservation Program (MSCP), San Diego Association of Governments, (Douglas Deutschman, P.I.), \$200,000, January 2012-December 2013.
- 37. Principal Investigator, NASA Interdisciplinary Science, Earth Science Division, The Urban Transition in Ghana and Its Relation to Land Cover and Land Use Change Through Analysis of Multi-scale and Multi-temporal Satellite Image Data, \$992,960 2012-2015.
- 38. Co-Investigator, NSF Dynamic Coupled Natural-Human Systems Program, Impacts of Ecosystem Service Payments in Coupled Natural and Human Systems (Li An, P.I.), \$1,500,000, 2012-2017.

- 39. Principal Investigator, NSF Infrastructure Management and Extreme Events, Rapid and Detailed Assessment of Post-hazard Damage to Critical Infrastructure, \$365,320, 2014-2016.
- 40. Co-Principal Investigator, US Department of Transportation, Development of a Remote Sensing Network for Time-sensitive Detection of Fine Scale Damage to Transportation Infrastructure, \$146,500, 2014-2016.
- 41. Principal Investigator, NSF Geography and Spatial Sciences, Landscape-level Measurements of and Controls on Wildfire Spread Rates, \$295,000, 2016-2020.
- 42. Co-Principal Investigator, US Forest Service, Extension of MODIS-based drought-stress product and automation of airborne imagery processing, \$12,865, 2016.
- 43. Co-Principal Investigator, US Navy, Vegetation Mapping at NALF San Clemente Island, \$345,700, 2015-2018.
- 44. Principal Investigator, NASA, Earth Science Fellowship, Emanuel Storey, \$82K.
- 45. Co-Principal Investigator, US Forest Service, Effects of Drought Stress and Forest Management on Fire Behavior and Post-Fire Forest Structure in a Western Coniferous Forest, \$112,000, 2018 2024.
- 46. Principal Investigator, US Navy, Shrub Cover Monitoring and Sensitivity Analyses of Vegetation Community Maps for San Clemente Island, CA, \$226,861, 2018-2020.
- 47. Co-Investigator, National Science Foundation Award "CNH-L: People, Place, and Payments in Complex Human-Environment Systems, Impacts of Ecosystem Service Payments in Coupled Natural and Human Systems (Li An, P.I.), \$1,450,000, 2018-2022.
- 48. Co-Investigator, California Strategic Growth Council, Climate Smart Connectivity Planning for Southern California Communities, \$1,800,000, 2019-2023.
- 49. Co-Principal Investigator, National Aeronautics and Space Administration, Spatial Decision Support for Fire management in Indigenous Cultural and Stewardship Practices, \$250,000, 2022-2024.
- 50. Co-Principal Investigator, US Forest Service, Remote Sensing of Forest Health and Fire Effects, \$27,000, 2023-2024.

# **Patents and Intellectual Property**

- U.S. Patent 9,756,293 Coulter et al., 2017, Systems, Methods and Devices for Repeat Pass Imaging for Wide Area Intermittent Video.
- U.S. Patent No 9,977,978 Coulter et al., 2018, Image Station Matching Preprocessing, Spatial Registration, and Change Detection Multi-temporal Remote-sensed Imagery.
- U.S. Patent No. 10,303,966 Coulter et al., 2019, Method and System of Image-based Change Detection.
- U.S. Patent No 10,740,608 Coulter et al., 2019. Wide Area Intermittent Video Using Non-orthorectified Feature Matching In Long Period Aerial Image Capture with Pixel-based Georeferencing.
- PCT/US23 Application 73373 Image Processing Methods and System For Detecting Change In Infrastructure Assest.

# Journal Editorial Responsibilities:

Associate Editor, International Journal of Remote Sensing, 2009 – 2020.

Advisory Board Member, International Journal of Remote Sensing, 2020 - present.

Editorial Board Member, GIScience and Remote Sensing, 2005-2021.

Advisory Board Member, GIScience and Remote Sensing, 2021- present.

# **Participation in Professional Associations:**

American Association of Geographers, Washington D.C.; Full Member.

American Geophysical Union, Washington D.C.; Full Member.

American Society of Photogrammetry and Remote Sensing, Falls Church, Virginia; Full Member.

NASA Land Processes Distributed Active Archive Center, Science Panel Member, 1995-2007.

Phi Kappa Phi Scholarly Association, Faculty Member

Phi Beta Delta International Scholars Society, Faculty Member

SPOT Image Corporation (SICORP) Academic Advisor Committee, Reston, Virginia; Council Member.

Remote Sensing Specialty Group - Association of American Geographers, Regional Councilor, 1992-1995, Chair, Awards Committee, 2004 to present, Program Chair, 1992 and 2003.

Co-Chair and Student Volunteer Coordinator, American Society for Remote Sensing and Photogrammetry Annual Meeting, San Diego, November 2008 – June 2010.

Adviser, SDSU Student Chapter, American Society for Remote Sensing and Photogrammetry, 2009-present.

# **Consultant Services**

- Analysis of the Reliability of Photogrammetric Estimates of Culvert Sizes Using Stereo Ground Photographs, Higgs, Fletcher & Mack, Attorneys-at-Law; expert witness; legal ramifications of photogrammetric measurements of engineering structures, 1986.
- Interpretation of Aerial Photographs to Measure Off-Road Vehicle (ORV) Disturbance in the California Desert District, U. S. Bureau of Land Management; principal consultant, designer of field and image sample design, supervisor of student intern; learned how to develop sampling strategies for large area estimates of ORV-related disturbances of deserts, 1989.

Remote sensing system evaluation for the development of an inland wetland monitoring system. Scientific and technical consultant to Environmental Science and Engineering, Inc. of Tampa, Florida for the West Coast Regional Water Supply Authority in Florida, 1996-98.

Precise Automatic Image Co-registration Tools to Enable Pixel-level Change Detection, scientific and technical consultant to Positive Systems, Inc. for NASA Small Business Innovative Research project, Contract NNS04AA28C, 2004-06.

## <u>Committee Assignments and Other University Service</u> California State University System:

Chair, Remote Sensing Committee, State-wide GIS Specialty Center, 2003-2014.

San Diego State University:

Member, Areas of Excellence Cluster Hiring – Faculty Review Committee April to May 2013.

Special Assistant for Enrollment Management, Academic Affairs, January 2011 to August 2012.

Reviewer, Department of Geological Sciences Program Review Committee, 2008.

Member, Intercollegiate Athletics Authority, 1998-present.

Member, Campanile Foundation, Athletics Sub-committee, 2008-09.

Member, Enrollment Management Committee, 2004 - present Chair, Intercollegiate Athletics Authority Board, 2000 – 2006.

Chair, Governance and Compliance Subcommittee, NCAA Athletics Program Review, 2004-06.

Reviewer, Ad hoc Committee for Review of Joint Doctoral Program in Ecology, SDSU-UC Davis, Spring 2005.

Chair, Associate Vice President of Research and Dean of Graduate Studies Search Committee, AY 2002-03.

Associate Vice President of Research and Dean of Graduate Studies Search Committee, AY 2001-02 and 2004-05.

SDSU Foundation General Manager Search Committee, AY 1999-2000.

Chair, Academic Progress & Eligibility Committee, Intercollegiate Athletics Authority, 1998-2000.

Faculty Merit Increase Appeals Committee for AY 1998-99, Dec. 1999.

Middle East Desert Development Program, Advisor to SDSU Foundation and Workshop Facilitator.

Instructor, University (Freshman) Seminar, Fall Semesters 1994-1996.

Panel Member, Formation of a Center for Applied Lands Research at SDSU.

Presented "The CESAR lab as an integrated instructional and research facility" to San Diego high school councilors, 1994.

Presented "The CESAR lab as an integrated instructional and research facility" to Executive Vice Chancellor Molly Broad, 1993.

Panel discussion on the Teacher-Scholar Model at San Diego State University, WASC Accreditation Visit, 1993.

Associate Dean of Graduate Division Search Committee, 1991-1992.

Graduate Council and Graduate Curriculum Committee, Fall 1988 -present.

Center for Marine Studies, Fall 1986 - Spring 1988; member of Executive Committee.

Systems Biology Research Group, Fall 1988 - 1999; faculty member of Advisory Committee.

Commencement Marshall, 1987, 1989, 1991, 1997, 1999, 2000-2003, 2005-2008.

Graduate Division, Spring 1987, reviewer of summer faculty fellowship proposals.

#### College of Arts & Letters:

Academic Policy and Planning, 2018

Research and Teaching Awards, 2017

Instructionally-Related Activities, 2016

Sabbatical and Professional Leaves Committee, 2006-2008.

Research Committee, Fall 1984- Spring 1986, Fall 1997 - Spring 1999.

Outstanding Professor Selection Committee, 1992-1995, 1997-1999.

Presentation of College of Arts & Letters Showcase, Counselors' Conference, 1994.

Personnel Committee (Promotions and Tenure), 1991-92, 2010-11.

SSRL Steering Committee, Spring 1985 (sabbatical replacement).

#### Department of Geography:

Department Chair, Fall 1992 - Fall 1997.

Interim Department Chair, Spring-Summer 2019.

Doctoral Program Adviser, Fall 1998 – 2013; Interim Adviser 2017.

PhD Committee, Fall 1991 – 2015.

Master's Program Advising Committee, ex-officio member, 1998 – 2013.

Center for Earth Systems Analysis Research, Fall 1986 - present; Co-director and a principal investigator; oversee purchases of equipment and supplies, training, etc. Computing Committee, 2002 - 2010.

Assessments Committee, Fall 2000 - 2003.

Policy Advisory Committee (elected member): Fall 1985 - Spring 1987, Fall 1988 - Spring 1989; chair Fall 1988 - Spring 1989; Fall 2002 - 2004; Fall 2006-2008; Fall 2014-16, Fall 2017-Spring 2018; advise Department Chair, initiate and enforce departmental policy, select graduate assistants.

Personnel Committee; 1990 - 2020.

Hiring Committees; Fall 2013- 2015, Fall 2018, Fall 2019, Fall 2021.

Scholarships and Awards Committee, AY 1999-2000, 2010-2011.

Colloquium presentation (with others associated with CESAR): What's Up in the Way of Geographic Technologies at the Center for Earth Systems Analysis Research (CESAR)?," October 1992.

Geojaunt (informal bag lunch slide presentation), "What do Egypt and Thailand have in Common?" May, 1990.

Geojaunt, "What Do South Africa and Spain Have in Common?," April, 1990.

Ad Hoc Committee on Joint Doctoral Program, Spring 1988 1990; member; assisted in generation of proposal, curriculum and catalog copy, and have attended meetings in San Diego and Santa Barbara for proposed program with U.C.-Santa Barbara.

Ad Hoc Committee on Journals, Fall 1989; member; update University library holdings.

Budget Committee, Fall 1983 - Spring 1990; member; chair Fall 1985 - Spring 1986, Fall 1989 - Spring 1990.

Internal Operations Committee, Fall 1983- Spring 1985, Fall 1990; chair Fall 1984 - Spring 1985, Fall 1998 to 2000.

# Service to the Community:

Articles in Newspapers

Article in San Diego Union Tribune Quest section on NASA project pertaining to habitat monitoring in San Diego County, November, 2001.

Supplied information and graphics for Maps, Bytes and the Revolution in Geography, College of Arts and Letters Alumni Newsletter, Fall 2000.

Supplied information for article on commercial satellites in San Diego Union Tribune, Fall 1999.

Supplied information and graphics for Satellite, Computers New Tools of Discovery for SDSU Geographers, <u>CSU Stateline</u>, April 1989.

Supplied information and graphics for Remapping an Ancient Science: The New Face of Geography, SDSU Alumni Newsletter.

XTRA News Radio Interview on remote sensing and GIS technology and related research projects at SDSU, 1987.

Supplied information/interview for Daily Aztec Articles on Geography Program/weather station.

Supplied information/interview for Daily Aztec Articles on Geography Program/weather station.

## **Television**

Interviewed on CW6 Channel 6 TV, Televisa Tijuana Channel 12 and San Diego Union-Tribune – UAV imaging for post-disaster assessment 2/2015

Interviewed on KFMB Channel 8 TV News - San Diego wildfires 10/2008

Interviewed on KUSI Channel 51 News - CESAR Laboratory, 6/2002 and 11/2005

Interviewed on Fox Channel 6 News - Launch of IKONOS commercial satellite, 12/1999.

# Other Services to Community

Presenter, Geography Awareness Week Presentations on GIScience Applications: Patrick Henry H.S. November 2011 - 2015; Hoover H.S. November 2010, Francis Parker School November 1999, 2000, 2001.

Member, Vegetation Mapping Subcommittee, Transnet Environmental Task Force, San Diego Association of Governments, 2008 – present.

Speaker, Current Technologies and Applications, Technologies for Monitoring Habitats and Preserves, June 2006.

Speaker, Applications of Remote Sensing to Land Use Changes in San Diego County, San Diego Partners for Biodiversity, May 2003.

Speaker, Serving Imagery in Wireless and Optical Formats Via the Internet in the Context of Monitoring Habitat Reserves and Adjacent Lands presented at SDSU Technology Show and Tell, June 2002.

Speaker, San Diego Urban Regional Information Systems (URISA) Chapter, October 2000.

Speaker, San Diego Women's Environmental Council, October 2000.

Speaker, Technology Advisory Committee of the San Diego Multiple Species Conservation Program, October 2000.

Co-Chair, City of San Diego Multiple Species Conservation Program, Technical Advisory Committee, 1998 to present.

Member Selection Committee, San Diego County Imagery Consortium, July 2000 - May 2001.

City of San Diego Multiple Species Conservation Program, Habitat Tracking Committee, 1998-99.

Speaker, Forest Service Bureau of Land Management 11th Annual Meeting, San Diego, 1993.

Workshop Speaker, Workshop on the Use of Geographic Information Systems and Digital Image Processing Land Use Analysis and Facilities Planning and Monitoring, sponsored by the Center for Earth Systems Analysis Research (CESAR), Department of Geography, 1992.

Contributor, first ERDAS training video for teaching remote sensing, 1992.

Speaker, Meeting on Satellite Imaging and Remote Sensing, sponsored by URISA San Diego, 1992.

Host, California Map Society Meetings, 1991.

Workshop Speaker, Workshop on the Use of Geographic Information Systems (GIS) and Digital Image Processing (DIP) in Land Use Analysis, Planning and Monitoring, for City/County Managers and Land Use Planning Directors, sponsored by the Center for Earth Systems Analysis Research (CESAR), Department of Geography, 1991.

Speaker, Remote Sensing and Image Interpretation for Earth Observations, The Twelve-Thirty Club of La Jolla, April 1990, retired senior citizens.

Basic Concepts of Remote Sensing and Digital Image Processing and the ERDAS - ARC/INFO Live Link, Hungry Valley SVRA GIS Workshop, SDSU, June 1989; lecturer.

ERDAS and Basic Concepts of Remote Sensing/Image Processing, Cuyamaca Ranch State Park GIS Workshop, SDSU, April 1988; organizer and lecturer.

Aerial Photographic Interpretation for Resource Management, Short Course for State of California Resources Agency, Santa Barbara, March 1988; lecturer and lab designer.

Remote Sensing and Physical Geography, Geography Workshop for Secondary Educators, SDSU, August 1984.