

Table 1. Grand Challenges & research questions organized by Areas of Concentration with designated mentors and contacts

Areas of Concentration	Grand Challenges	Research Questions/Topics	Mentors (*) and contacts
1. Architecture and Urban Design	1.1. Designing Urban Parks for Civic Vitality and Sustainability	<ul style="list-style-type: none"> San Diego-Tijuana urban parks in comparative perspective: Role of culture Parks as wildlife corridors and recreational space: Integrating beneficial uses Valuing parks as natural capital in planning and decision support systems 	Judy Tjiong* , Judy.Tjiong@sdcounty.ca.gov Jason Levy* , Jason.Levy@www.edu Patrick T McDonough* , Patrick.Mcdonough@sdcounty.ca.gov
	1.2. Sustainable Design of Buildings & Urban-Ecological Landscapes	<ul style="list-style-type: none"> City of San Diego’s park and open space master plan: Using canyonlands as a planning framework Smart growth and landscape urbanism Design for ecological democracy Green architecture and sustainable design Local regional heritage in architecture, landscape design and urban design 	Michael Stepner* , stepner1@gmail.com Teddy Cruz* , cruzroe@earthlink.com Eric Epstein , z.eric@cox.net
2. Community & Economic Development	2.1. Neighborhood Visioning for Quality of Life	<ul style="list-style-type: none"> Neighborhoods First: Neighborhood Visioning and Quality of Life Surveys as a Tool for Action-Oriented Research in Two San Diego Neighborhoods (<i>This is a group project that can accept five to ten students working on two teams, one for each of the target neighborhoods. Specific questions/topics and research tasks will be assigned by the mentors in consultation with students</i>). 	Mirle Rabinowitz Bussell* , mbussell@ucsd.edu Kerry Sheldon* , San Diego LISC, Ksheldon@lisc.org Julie Wartell , Julie.Wartell@sdcdca.org
	2.2. Redevelopment, Construction and Community Well-being	<ul style="list-style-type: none"> The role of urban planning and the flow of capital into the real estate industry Conduct a quantitative analysis of employment and wages in residential/commercial construction in San Diego County and identify differences between trades Explore issues particular to the construction industry such as apprenticeship job training, construction site access, perma-temps, and undocumented laborers 	Murtaza Baxamusa* , mbaxamusa@onlinecpi.org Donald Cohen , dcohen@onlinecpi.org Brandalyn Patton , brandalyn@onlinecpi.org Isaac Martin , iwmartin@ucsd.edu

		<ul style="list-style-type: none"> • Identify major health and safety issues in the construction industry (including health insurance, occupational safety issues) • Identify the role that public subsidies play in development such as redevelopment, infrastructure bonds and land grants 	
	2.3. Regional Economic Development and the Greening of Industry	<ul style="list-style-type: none"> • Barriers and bridges to the success of green initiatives in San Diego-based businesses (e.g., Packard, Sony, Qualcomm, Solar Turbines, NASSCO) -- focusing on ISO 14001, CERES principles, the Business Charter for Sustainable and other green corporate approaches. • Charting best practices for improving water quality: New urban runoff/stormwater requirements now affect thousands of businesses (18,000+) where it previously was only a few hundred industrial facilities. • Industry participation in the San Diego County Water Authority long-range water conservation strategies (drought planning; water conservation measures; monitoring and high-tech satellite imagery program; regulatory and judicial constraints on supply, water reuse and purple pipe plumbing). • Incompatible land uses adjacent to industrial facilities. This becomes an issue as many local municipalities continue to consider new mixed use development projects which often include high-density residential adjacent to industrial zones. Specific concerns for study include: <ul style="list-style-type: none"> -air quality impacts from fleet/distribution operations, both carcinogenic and non-cancer health impacts; -nearby and on-site hazardous waste issues; and -environmental justice implications for land use incompatibilities. 	John Grosskopf*, jwgrosskopf@cox.net Patti Krebs*, iea@iea.sdcoxmail.com Jerome Jaminet*, jjaminet@trcsolutions.com Al Hurt, ahurt@eeimail.com
3. Environment	3.1. Regional Integrated Watershed Management	<ul style="list-style-type: none"> • Efficacy of educational outreach (e.g., City of San Diego's Think Blue Campaign , San Diego County's Clean Water Project) as an approach to pollution prevention and environmental mitigation • Role of science communication and public participation in 	Hiram Sarabia-Ramirez*, hsarabia@ucsd.edu John Robertus*, JRobertus@waterboards.ca.gov Matt Childers, mchilder@ucsd.edu

		<p>integrated watershed planning</p> <ul style="list-style-type: none"> Defining and evaluating water policy and sustainability indicators for integrated watershed management Planning and decision support systems for regional integrated watershed management 	<p>Craig Burnett, cburnett@ucsd.edu Lilian Busse, lbusse@waterboards.ca.gov Michel Boudrias, boum@sandiego.edu Jeff Tayman, jtayman@san.rr.com</p>
	3.2. Environmental Justice	<ul style="list-style-type: none"> Globalization and transnational movements for environmental justice (e.g., Transatlantic Initiative on Environmental Justice) San Diego-Tijuana transborder networks to reduce toxics (e.g., EHC Border Environmental Justice Campaign) Community-based strategies to integrate social, economic and environmental justice (e.g., EHC Toxic Free Neighborhoods Campaign) 	<p>David Pellow*, dpellow@ucsd.edu Hiram Sarabia-Ramirez, hsarabia@ucsd.edu Paula Stigler, paula@sdfoundation.org</p>
	3.3. Green Infrastructure for Sustainable Development	<ul style="list-style-type: none"> The San Diego River Park: Valuing green infrastructure for smart growth and sustainable regional development. (<i>This is a group project that can accept three to five students. The aim is to analyze existing beneficial uses of the San Diego River's corridor and ecosystems from social, economic, cultural and ecological sustainability perspectives. Specific questions/topics and research tasks will be assigned by the mentors in consultation with students.</i>) 	<p>Rob Hutzel*, rhutzel@sandiegoriver.org Carl Nettleton, cnettleton@san.rr.com Ann Van Leer, annvanleer@san.rr.com Mike White, mdwhite@consbio.org Sue Carnevale, sca@sandag.org</p>
	3.4. Sustainability Science and Greening the University	<ul style="list-style-type: none"> Bridging epistemic cultures in sustainability research, pedagogy and service learning Effectively managing university-owned natural reserves through campus planning and stewardship 	<p>Isabelle Kay*, ikay@biomail.ucsd.edu Paul Dayton, pkd@coast.ucsd.edu Susan Smith, susmith@ucsd.edu (after Jan 08), Lisa Shaffer, lshaffer@ucsd.edu</p>
4. Housing	4.1. Affordable Housing	<ul style="list-style-type: none"> Benefits and costs of inclusionary housing Housing Trust Funds and Linkage Fees Non-profit sector strategies in meeting affordable housing needs 	<p>Nico Calavita*, ncalavit@mail.sdsu.edu Ken Grimes, ken.grimes@cox.net</p>
5. Infrastructure and Public Facilities	5.1. Sustainable Energy and Environmental Monitoring Systems	<ul style="list-style-type: none"> Alternative energy Sensor networks for environmental monitoring and energy savings 	<p>Gabriele Wienhausen*, gwienhausen@ucsd.edu Paul Linden, pflinden@ucsd.edu Richard Caputo, richardcaputo@sbcglobal.net</p>

	5.2. Cyberinfrastructure for City-Region Planning and Development	<ul style="list-style-type: none"> • Planning models and decision-support systems (e.g., Community Viz, Paint the Town, Smart Growth Index, PLACE3S): What are the strengths and weaknesses of these models? Are they effective in improving the planning process and increasing constituent interaction? How could they be improved? • Forecasting in planning: How are forecasts integrated into decision-making processes? What are some of the conflicts or issues between forecasting, planning, and policy-making? How can these conflicts be resolved? How can a planner best convey the uncertainty inherent in forecasting to decision-makers and other constituents? 	<p>Dan Perkins, dan@energysmarthomes.net</p> <p>Jeff Tayman*, jtayman@san.rr.com Ron Campnell rcampnell@ucsd.edu David A. Schkade, schkade@ucsd.edu</p>
	5.3. Global Planning Grids for Collaboration in Planning Research and Education	<ul style="list-style-type: none"> • Regional Planning Chronologies: Building historical urban planning collections in San Diego that juxtaposes for comparative purposes : (i) a collection with all the official plans of San Diego into the present; (ii) a 2nd collection with all the invisible planning histories (e.g., redlining), and (iii) a 3rd collection with all the visionary yet unrealized plans (e.g., Temporary paradise). • Global Planning Grid initiative of the Global Planning Educators Interest Group (GPEIG)—a case of 4th Wave cyberinfrastructure. Tying global information commons into local and regional planning. What are the most promising planning and decision support systems in use, and how does public participation and science communication come into play (e.g., PP-GIS, multimedia)? • Capturing/mapping/cataloguing cultural diversity in San Diego’s built environment (buildings and historically-valued urban-civic space) BEFORE it succumbs to the bulldozers of homogenizing modernism or the whitewash of boutique-styled cultural entrepreneurs (public and private). 	<p>Richard Marciano*, marciano@ucsd.edu Reagan Moore, moore@sdsc.edu Sue Carnevale, sca@sandag.org</p>

6. Public Health and Safety	6.1. Quality of Life Indicators and Community Empowerment	<ul style="list-style-type: none"> • Why is quality of life monitoring important? What role does it play in tracking progress of the San Diego’s Regional Comprehensive Plan? • Creating neighborhood and city level profiles using population, public health and safety data. Community profiles will be supported by research and analysis of city ordinances, strategic plans and legislative agendas. Each completed community profile will be used by community action groups to help solve localized public health and social problems. 	Beth Jarosz*, bjasandag.org David Cleveland*, dcleveland@telesis.org
7. Transportation Planning	7.1. Planning and Funding Transit Projects for Smart Growth	<ul style="list-style-type: none"> • Is our region planning and funding the right transit projects to support smart growth and relieve congestion? How are such decisions made? What influence did the Independent Transit Planning Review (ITPR) have on the Regional Transportation Plan 2030 (RTP)? 	Carolyn Chase*, cdchase@sdearthtimes.net
	7.2. Alternative Means of Transportation	<ul style="list-style-type: none"> • Define a network of regionally significant bicycle routes, facilities, and necessary support programs. Identify gaps in the network and recommend specific improvements needed to fill the gaps • Develop cost estimates to complete construction of the regional network and develop a funding strategy to build and maintain the regional bike network • Provide a design manual focusing on bicycle-friendly designs for all streets and roadways through new technologies, standards, guidelines, and innovative treatments on all new roadways and multiuse paths • Provide policy direction and identify programs to assist local jurisdictions in improving safety, education and awareness about bicycle travel 	Chris Kluth*, cclsandag.org
8. Tribal Policy and Planning	8.1. Tribal Participation in the Development of Regional Planning Processes	<ul style="list-style-type: none"> • Southern California Tribal Chairmen’s Association (SCTCA) Group Project: This research project can accept up to five students who will be designated as SCTCA Policy Interns. The SCTCA has established a set of issues it would like to pursue at a regional level. Under the guidance of SANDAG’s Tribal Liaison, the students will provide technical assistance 	Jane Clough-Riquelme* jclsandag.org Paula Stigler*, paula@sdfoundation.org

		in a specific policy area to the SCTCA representatives. Each student will produce at least one professional-level policy report (2-4 pp), PowerPoint presentation (max. of twelve slides), and speaking points for one of the SCTCA representatives. regional planning issues (environment, energy, water, public safety, conservation, and legislation).	
	8.2. Tribal Science and Environmental Health	<ul style="list-style-type: none"> • Tribal Science and Capacity-building of Tribal EPAs • Tribal environmental health sciences information systems (creating a Tribal Workbench) • National tribal science priorities, including tribal issues Related to Tribal Traditional Lifeways, Risk Assessment, and Health & Well Being 	Marshall K. Cheung*, tribal-epa@att.net Hiram Sarabia-Ramirez, hsarabia@ucsd.edu Richard Marciano marciano@sdsc.edu Ted Griswold tjg@procopio.com Paula Stigler paula@sdfoundation.org
9. Urban and Regional Planning	9.1. Climate change in urban and regional planning	<ul style="list-style-type: none"> • Local and Regional Focus: The Conservation element in the City of San Diego’s General Plan: How do we intend to deal with climate change? Working with the City of San Diego and researchers students have the opportunity to work on assessing the likely impacts of climate change on our region, and identify strategies, policies, and technologies that can reduce the impact and prepare for the changes. • Comparative focus: UCSD’s ESI is leading a new project on climate change and sustainable cities (in partnership with with the Association of Pacific Rim Universities (APRU), representatives of local government, industry, and philanthropic organizations. The project is bringing together university-led teams from major Pacific Rim cities, tentatively including San Diego, Melbourne, Singapore, Beijing, and Kyoto. After applying an agreed set of sustainability metrics, teams will project climate impacts on their city-region, and then work on finding strategies to reduce or mitigate the projected impacts, sharing experiences and best practices. 	Linda Pratt*, LPratt@sandiego.gov David Pierce, dpierce@ucsd.edu Bill Anderson, AndersonW@sandiego.gov Toni Dillon, tdillon@sandiego.gov

	9.2. Regional Comprehensive Planning	<ul style="list-style-type: none"> • Evaluate one of SANDAG’s Policy Advisory Committees (the Regional Planning Committee), with a focus on a particular theme or issue. • Evaluate one of SANDAG’s Policy Advisory Committees (the Transportation Committee), with a focus on a particular theme or issue. • Evaluate one of SANDAG’s Policy Advisory Committees (the Borders Committee), with a focus on a particular theme or issue. • Evaluate one of SANDAG’s Policy Advisory Committees (the Public Safety Committee), with a focus on a particular theme or issue. 	Ken Sulzer*, ken811@san.rr.com Carolina Gregor, cgr@sandag.org Ronald Saenz, rsa@sandag.org Beth Jarosz*, bj@sandag.org
	9.3. Multiculturalism and the Management of Diversity	<ul style="list-style-type: none"> • Equity and economic issues concerning newly arriving refugees in San Diego county • Progressive Planners Network: Latinos in planning and as agents of social change • Challenges of immigrant integration: What policies might facilitate successful integration? • How can San Diego effectively harness multiculturalism? Some say that multiculturalism has a deleterious effect on civic society, while others tout multiculturalism as strength. Students are to go beyond the platitudes and uncover how ethnic diversity affects civic society, and how San Diego might harness and/or manage its diversity. 	Connery Cepeda*, connery_cepeda@dot.ca.gov Lisa Sun-Hee Park, lspark@ucsd.edu Tomás R. Jiménez, tjimenez@ucsd.edu
	9.4. Regional Food Planning	<ul style="list-style-type: none"> • With reference to the Community and Regional Food Planning: A Policy Guide for the American Planning Association, document efforts to strengthen connections between traditional planning and the emerging field of community and regional food planning. What is happening locally in the San Diego region? How about in Tijuana? What are the prospective benefits of regional food planning (e.g., economic vitality, public health, ecological sustainability, social equity, and cultural diversity)? 	Kami Pothukuchi, k.pothukuchi@wayne.edu Joe Nasr, joenasr@compuserve.com

10. US-Mexico Border Planning	10.1. Transborder Ecosystems and Planning for Sustainable Human Settlements	<ul style="list-style-type: none"> • Integrated approach to Poverty and Sustainability (Laureles Canyon, Mexico) • Integrated approach to Poverty and Sustainability (Matadero Canyon, Mexico) 	Oscar Romo*, OROMO@parks.ca.gov Hiram Sarabia, hsarabia@ucsd.edu Larry A. Herzog, laherzog@mail.sdsu.edu Jason Levy*, Jason.Levy@wwu.edu
	10.2. Building Institutions and Networks for Transborder City-Region Development and Governance	<ul style="list-style-type: none"> • Comparative study of planning cultures in planning departments of Tijuana and San Diego. • Case study of the Committee on Binational Regional Opportunities (COBRO). COBRO advises SANDAG's Borders Committee concerning both short and long-term binational related activities, provides recommendations regarding binational border-related planning and development; and identifies ways to assist and coordinate with existing efforts in the binational area. • Study the participatory process associated with the Commission for Environmental Cooperation (CEC), an international organization created by Canada, Mexico and the United States under the North American Agreement on Environmental Cooperation (NAAEC). The CEC was established to address regional environmental concerns, help prevent potential trade and environmental conflicts, and to promote the effective enforcement of environmental law. How does the CEC measure its efficacy, how does the CEC tackle issues of transboundary governance? 	Carlos Graizbord*, cargra@an.rri.com Alejandro Hinojosa, alhinc@cicese.mx Hector Vanegas, hva@sandag.org Larry A. Herzog, laherzog@mail.sdsu.edu
Multimedia support			Harrison Watts hwatts@ucsd.edu Web and Systems Development Office of Research Affairs (858) 822-2760

Intended for use by students enrolled in UCSD's Urban Studies and Planning Program, Senior Sequence, class of 2007-2008. Instructor: Keith Pezzoli, PhD.