



FRESNO
STATE

Civil and Geomatics
Engineering



CALIFORNIA SPATIAL REFERENCE CENTER (CSRC), EXECUTIVE COMMITTEE ELECTIONS (JUNE 2024) AND THE CALIFORNIA REAL TIME NETWORK (CRTN) CONSORTIUM NOVEMBER 2, 2023

Maria Turingan

CSRC Coordinating Council Fall Meeting

Hosted by Student Association of Geomatics Engineering (SAGE), Fresno State

Virtual Meeting Hosted by the California Land Surveyors Association (CLSA)

UC San Diego





PREVIEW



- 1) **California Spatial Reference Center (CSRC)**
 - CSRC at Scripps Oceanography, UCSD
 - CSRC is a UCSD Support Group
 - Three Core Groups
 - CSRC Executive Committee Elections
- 2) **California Real Time Network (CRTN)**
 - CRTN Consortium
 - CRTN Usage
- 3) **CSRC/CRTN Funding**
- 4) **CSRC/CRTN Social Media**



Matt, Glenn, and Yehuda at CRTN Station



CSRC AT UCSD, SCRIPPS OCEANOGRAPHY



- **CSRC is part of the Part of the UC and UCSD, a non-profit, public research university**
 - Regents of the University of California
 - University of California San Diego (UCSD)
 - Scripps Institution of Oceanography
 - Institute of Geophysics and Planetary Physics (IGPP Department)
- **UCSD** was founded in 1960 and is recognized as one of the top 15 research universities worldwide
- **Scripps Institution of Oceanography** has been one of the most reputable institutions for global earth science, oceanographic research, and education since 1903
- **Scripps Orbit and Permanent Array Center (SOPAC)** research group at Scripps Oceanography operates CSRC/CRTN and provides staff, facilities and infrastructure



CSRC – UCSD SUPPORT GROUP



- **CSRC, began in 1999 as a UCSD Support Group**, providing public outreach and other support for the University's mission
- **For over 24 years, CSRC has brought together** land surveyors, scientific and academic researchers, GIS professionals, state and local governments, NOAA's NGS, the California Department of Transportation, and the geodetic and geophysical communities
- **CSRC was dedicated in 2001** at Scripps Oceanography
- **Southern California Integrated GPS Network (SCIGN) unveiled in 2001** - CSRC helped the Jet Propulsion Laboratory (JPL), the Southern California Earthquake Center (SCEC), the US Geological Survey (USGS) install permanent GPS stations throughout Southern California



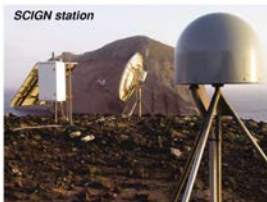
CSRC Inception Ceremony



UNDERSTANDING EARTHQUAKE HAZARDS IN URBAN AREAS

SCIGN—New Southern California GPS Network Advances the Study of Earthquakes

Southern California is a giant jigsaw puzzle, and scientists are now using GPS satellites to track the pieces. These puzzle pieces are continuously moving, slowly straining the faults in between. That strain is then eventually released in earthquakes. The innovative Southern California Integrated GPS Network (SCIGN) tracks the motions of these pieces over most of southern California with unprecedented precision. This new network greatly improves the ability to assess seismic hazards and quickly measure the larger displacements that occur during and immediately after earthquakes.



SCIGN stations receive radio signals from GPS satellites overhead...





CSRC – THREE CORE GROUPS



1) CSRC Coordinating Council

- Approximately 60 volunteers representing CSRC stakeholders and organizations

2) CSRC Executive Committee

- 15 core volunteers
- Serves as the board to steer CSRC

3) California Real Time Network Consortium

- Provides funding support to CRTN/CSRC
- Directs CRTN



CSRC recognized Dr. Yehuda Bock with the Founder's Award, April 2023

<http://sopac-csrc.ucsd.edu/index.php/coordinates-council/>
<http://sopac-csrc.ucsd.edu/index.php/executive-committee/>
<http://sopac-csrc.ucsd.edu/index.php/consortium-members/>



CSRC – EXECUTIVE COMMITTEE MEMBERS ELECTED



Art Andrew, Orange County

| Position | Member | Organization |
|------------------|-------------------|-------------------------------|
| Chairperson | Humberto Gallegos | California Baptist University |
| Vice-Chairperson | Steven Martin | Retired (East Bay MUD) |
| Secretary | Timothy McKinney | Michael Baker International |
| Treasurer | Rich Maher | KDM Meridian |
| Member | Adrian Aguirre | Dragados USA, Inc. |
| Member - Interim | Kevin Maxwell | Caltrans |
| Member | Taleah Quemada | Long Beach Energy Resources |
| Member | Pat Tami | CA Dept. of Water Res. |



CSRC – EXECUTIVE COMMITTEE MEMBERS NON-ELECTED

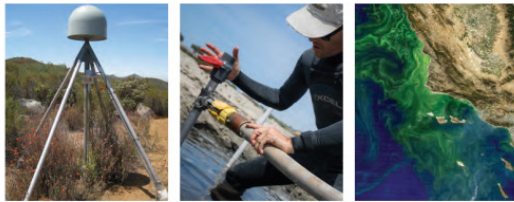


Yehuda at SIO5, CRTN Station, 2021

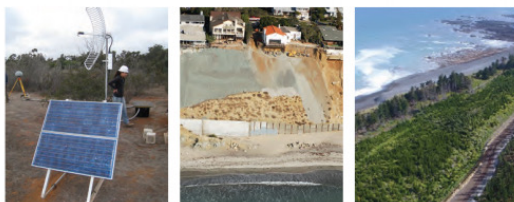
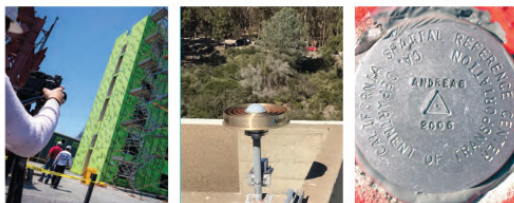
| Position | Member | Organization |
|---------------------------------------|--------------------|----------------------------|
| CSRC Director | Dr. Yehuda Bock | Scripps Oceanography, UCSD |
| Immediate Past Chairperson | Kimberley Holtz | Port of Long Beach |
| Chancellor of UCSD (or designee) | Dr. John Orcutt | Scripps Oceanography, UCSD |
| Director of IGPP, Scripps, UCSD | Dr. Adrian Borsa | Scripps Oceanography, UCSD |
| NOAA's National Geodetic Survey (NGS) | Dr. Dana Caccamise | NOAA NGS |
| California Geodetic Coordinator | Scott Martin | Caltrans |
| CSRC Executive Manager | Greg Helmer | Psomas |



CSRC – EXECUTIVE COMMITTEE ELECTIONS JUNE 2022



CALIFORNIA SPATIAL REFERENCE CENTER



STRATEGIC PLAN // DECADE THREE // AUGUST 30, 2021

SOPAC



Are you interested in volunteering on the Executive Committee (EC)?

Four EC Positions Open June 2024 (incumbent):

- 1) Secretary (Timothy McKinney)
- 2) Treasury (Rich Maher)
- 3) EC Member (Kevin Maxwell)
- 4) EC Member (Taleah Quemada)

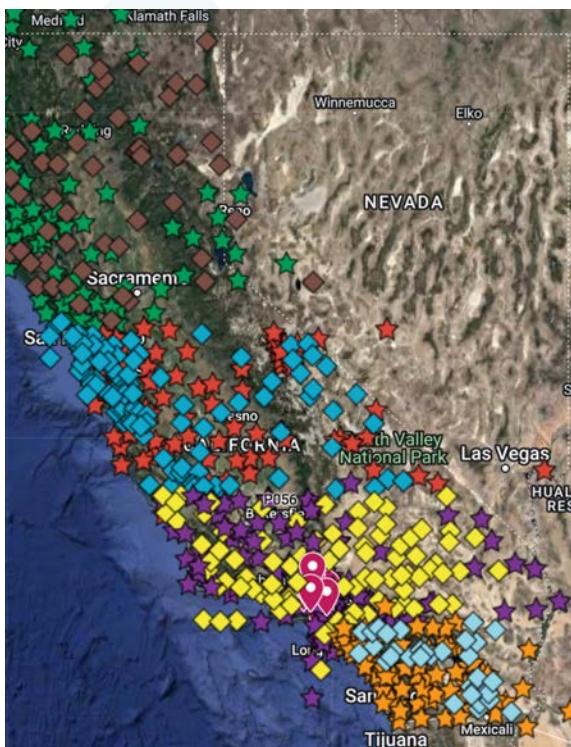
CSRC Strategic Plan (2021): see http://sopac-csrc.ucsd.edu/wp-content/uploads/2021/09/CSRC_NextDecadeStrategicPlan2021_Reduced.pdf



CALIFORNIA REAL TIME NETWORK (CRTN) CONSORTIUM



- 1) **Los Angeles Department of Water and Power**, John Tosto
- 2) **Blue White Robotics**, Ron Berenstein (working in Agriculture, Fresno)
- 3) **Metropolitan Water District**, Brian Wiseman
- 4) **California Land Surveyors Association**
- 5) **City of Los Angeles**, Department of Public Works, Bureau of Engineering
- 6) **Riverside County Flood Control and Water Conservation District**, Jim McNeil, Joshua Tremba
- 7) **Orange County**, Public Works, Kevin Hills, Elliott Medina
- 8) **San Diego County**, Department of Public Works, Neil Kussat
- 9) **Riverside County Transportation Department**, David McMillan
- 10) **City of Long Beach Energy**, Taleah Quemada
- 11) **Port of Long Beach**, Kimberley Holtz
- 12) **California Department of Transportation**, Kevin Maxwell
- 13) **Los Angeles County**, Public Works, Steve Hennessee
- 14) **California Spatial Reference Center**, Chairperson, Humberto Gallegos
- 15) **Scripps Institution of Oceanography, UCSD**, Yehuda Bock



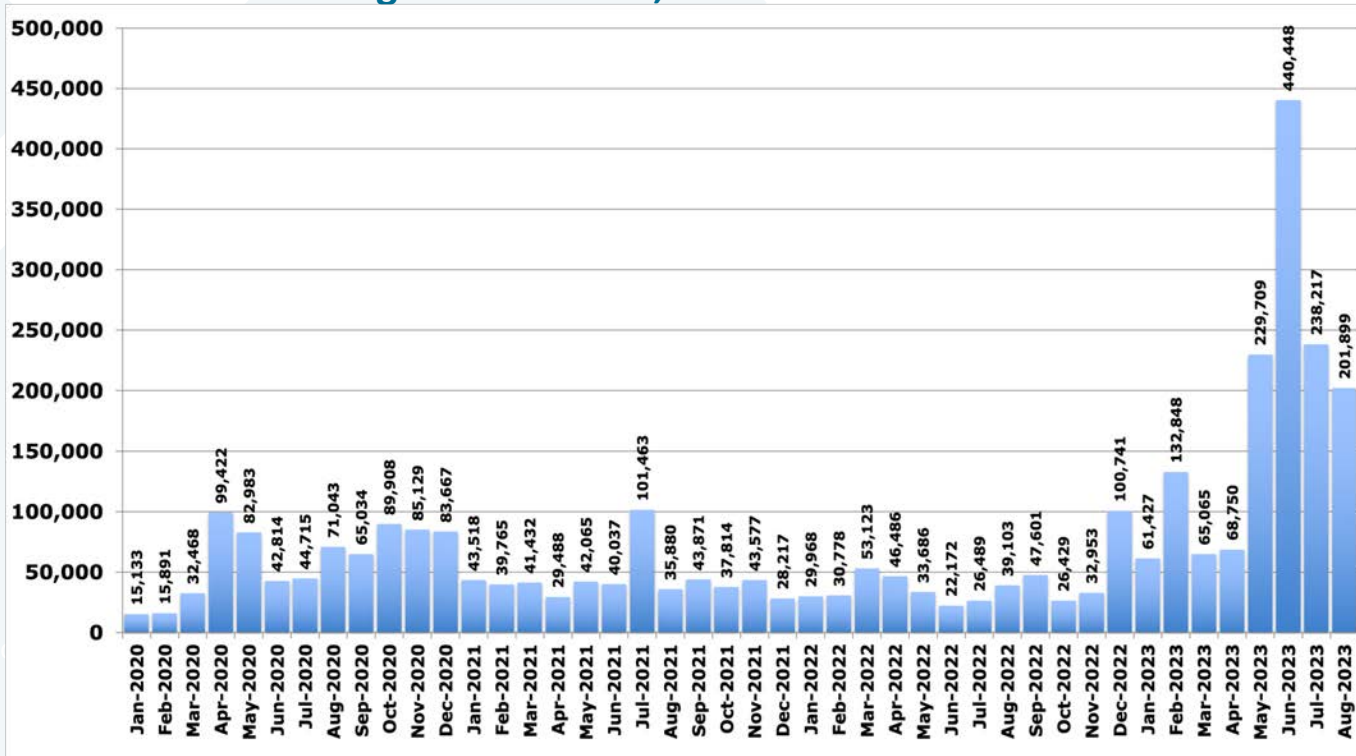
CRTN Stations on Google Maps by John Tosto



CALIFORNIA REAL TIME NETWORK (CRTN) USAGE



- Number of individual organizations/users who have requested a CRTN account: Approximately 3,070
- Average Number of CRTN NTRIP connections per month from January 2020 – August 2023: 72,346
- Total Number of Connections August 2023: 201,899



Matt, Glenn, and Yehu



CSRC/CRTN – FUNDING



Geisel Library Project with Structural Engineering Dept and KDM Meridian



Matt, Glenn, and Yehuda at CRTN

- **CSRC/CRTN operations are leveraged by and depends on SOPAC research grants primarily from NASA and NGS and a small percentage of funding from the US Army Corp of Engineers and a State of California Assembly Bill**
- **CSRC/CRTN is also funded by service contracts with Caltrans and the Department of Water Resources (DWR, through a subcontract with PSOMAS)**
- **CRTN Consortium Membership and CRTN Payment for Services and Donations**
- **In the past few years, CSRC/CRTN operations were at risk due to lack of direct funding and fluctuations of and competition for research grant funding**



CSRC/CRTN SOCIAL MEDIA



CSRC recognized Dr. Yehuda Bock with the Founder's Award, April 2023; Greg Helmer, Sharona Bock, Yehuda Bock, and Dana Caccamise

Matt, Glenn, and Yehuda at CRTN

<https://www.facebook.com/photo/?fbid=210087488762761&set=a.122560977515413>

<https://www.instagram.com/p/Cyl-oI8MVV4/>

<https://www.linkedin.com/feed/update/urn:li:activity:7120861298900271105/>

https://twitter.com/CSRC_CRTN/status/1715099344867606933



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THANK YOU

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