



August 8, 2012

Brown-Nichols Science Award Committee
Delta Science Program
Delta Stewardship Council
Sacramento, CA

We write to recommend Dr. James Cloern to you for the Brown-Nichols Science Award in 2012. Dr. Cloern has been conducting important and much honored research in the San Francisco Estuary since the late 1970s (with over 80 peer-reviewed reports about the Estuary in the literature) and has substantially advanced the science and scientific basis for management of Estuary in that time. Cloern has received Ketchum, Schwappe, Fulbright, Golden Screen, Department of Interior, and NATO awards during his long career in the Estuary. Jim's research is underpinned by his long standing observational efforts to monitor the chemistry and biology in the Estuary along with the physical processes involved, and he is probably the strongest spokesman for the value of long-term sustained, place-based research in estuarine sciences today. Cloern has mentored/advised 12 post docs, 20 post-graduate degrees, and has provided advisory services to an impressive array of management and science programs in the Estuary and beyond it.

For our part, given that our own research focuses in the climate sciences, we call to your attention Cloern's important efforts to detect and explain climatic causes of significant events and changes in the Estuary from bloom to seasonal to multi-year time scales. A couple of the more notable recent contributions in this regard have been:

Cloern et al., 2005, Climate anomalies generate an exceptional dinoflagellate bloom in San Francisco Bay: *Geophys Res Lett* 32:L14608.

Cloern et al., 2007, A cold phase of the East Pacific triggers new phytoplankton blooms in San Francisco Bay: *PNAS* 104:18561-18565. (Editor's choice paper in *Science* when it came out)

Most recently, his leadership was absolutely critical in organizing and completing the high-visibility CALFED-funded Computational Assessments of Scenarios of Change for the Delta Ecosystem (CASCaDE) project, which brought together dozens of scientists in fields ranging from climatology to hydrodynamics to sediment transports to ecology in an effort to connect models in ways that allowed identification of key vulnerabilities of the Delta to recent projections of 21st Century climate change. An important result of that project has been its capstone report, which has already been cited 9 times in the scientific literature since its release last September:

Cloern et al., 2011, Projected evolution of California's San Francisco Bay-Delta-river system in a century of climate change: PLoS ONE 6.

In the process of all of this scientific activity, Cloern has also managed to be friend to nearly everyone and an inspiration and motivator for much of the most important work on the system. Thus we strongly recommend Dr. Cloern to you for the 2012 Brown-Nichols Science Award.

Sincerely,

A handwritten signature in blue ink, appearing to read "Michael Dettinger". The signature is fluid and cursive, with a large loop at the end.

Dr. Michael Dettinger
US Geological Survey
Scripps Institution of Oceanography
La Jolla, CA

A handwritten signature in blue ink, appearing to read "Daniel R. Cayan". The signature is cursive and somewhat stylized.

Dr. Daniel Cayan
Scripps Institution of Oceanography
US Geological Survey
La Jolla, CA