

Thanks, Betty Crocker!

Betty Crocker, famous for her prepackaged cake mixes, has inspired SEAOC President Mel Green to undertake the challenge of prepackaging the seismic design portions of the building code. When complete, there will be a straight forward recipe to follow for the seismic design of small regular buildings, a la Betty Crocker.

The new document, as yet unnamed but affectionately dubbed "code lite," will serve two purposes. First, for all those engineers who think the code is too complicated, it will offer a straightforward conservative alternative. Second, it will be sold nationally with the intent of providing much needed revenue for the association.

Noting that 80% of the buildings designed today use only 20% of the seismic design provisions of the code, Mel has charged Janah Risha, committee chair from SEAOSC, with the task of streamlining the seismic provisions of Volume 2 of the 1997 Uniform Building Code. The document will be used for the design of buildings not more than three stories or 45' in height. The portions of the code relating to taller more complex structures will be omitted. It will include an in depth commentary.

It is refreshing to see SEAOC redirect some of its efforts away from the high-tech, high performance end of the spectrum and towards simplifying the design process. This document should prove very useful to a large segment of the engineering community, both locally and nationally, and help preserve SEAOC's leadership position in seismic design.

Look for this document on your grocer's shelves early next year.

STRUCTURAL IMPLICATIONS OF EXPLOSIVE ATTACK

Hollice F. Stone and Lorraine Lin of Hinman Consulting Engineers, Inc.

by Jamison Curry, Program Committee Chair

After the attacks on September 11th, 2002, there is heightened awareness of the vulnerability of our nation's buildings to the effects of terrorist attack. Of particular concern are high profile and public buildings. Our opening presentation for the 2002-2003 season will focus on structural design to mitigate the effects of attack with explosives. Our speakers will be Hollice Stone and Lorraine Lin, of Hinman Consulting Engineers.

Among the topics to be presented are: the difference between blast and seismic events; damage and injuries that occurred in past incidents; the explosive threat scenarios to be considered; blast loads on structures; blast vulnerability assessments; critical structural component design analysis; and window analysis techniques.

A structural vulnerability assessment studies the effects of explosive weapons used by terrorists that could cause catastrophic structural collapse, resulting in fatalities, injuries, or significant disruption of service. The objective of these assessments is to save lives by reducing the chance of catastrophic collapse and to facilitate evacuation and the rescue/recovery effort. Defining critical threat levels provides decision-makers with the tools needed to assess security requirements to reduce the threat. These studies may also be used to provide options for structural hardening to reduce structural and non-structural damage, which has a direct effect on lowering casualty levels.

Ms. Stone will also discuss post-event safety issues due to structural damage based on her experiences as a member of the Menlo Park Urban Search and Rescue team deployed to

the World Trade Center last September.

Hollice Stone is trained as a civil engineer with Bachelor of Science and Master of Science degrees from Stanford University. As a project manager with Hinman Consulting Engineers, she works on the design, retrofit, and failure analysis of embassies, courthouses, military structures, and federal buildings to reduce the effects of terrorist attack.

Lorraine Lin has a Master of Science in Structural Engineering and Bachelor of Science in Civil Engineering from the University of California, Berkeley, and a Doctor of Philosophy degree from Oxford University. At Hinman Consulting Engineers, she has performed blast vulnerability assessments for major transportation systems in New York City, Federal Reserve Bank facilities, high profile corporate headquarters buildings, and moderate to high risk federal buildings.

Meeting Notice

**August Dinner Meeting
August 6th, 2002**

The City Club

155 Sansome Street, 10th Floor

San Francisco

Assembly 5:45

Dinner 6:30

Program 7:30

Fax registration form on the back of this newsletter to the SEAONC office by **12 noon Friday, August 2nd.**

NOTE: New dinner prices, and new age for Jr. Mbrs. start this month (see back for details).

BYA Publications
2002 Structural Engineering
Review Manual & Workshop
www.structuralsolutions.com

The best structural review manual, edited by **Ben Yousefi, SE, James Son, SE and Rafael Sabelli, SE** just got better. The 660 page SERM, 2002 edition, now includes **LRFD solutions** to many of the steel Problems. The manual contains complete problem statements and solutions for the California SE exams 1990-1995 (6years). All solutions are per **1997 UBC** and problems have been upgraded to reflect the newer provisions in the code and in particular the seismic design requirements. A Supplement containing several additional problems is also going to be available by mid July.

In addition, **Review Workshops** are being offered in Bay area and Los Angeles to provide an interactive learning environment for the users of the manuals. The workshops are instructed by some of the most reputable experts in the field of structural engineering, whom have been extensively involved in research and/or code development processes. For more information about the manuals and workshops please check our web site at the address above, email us at structuralreview@aol.com or call 800-566-2906.

Committees on Assignment

Design Approach for Collectors in Concrete Buildings

by Lawrence Liao, Chair of Concrete Subcommittee of Seismology and Structural Standards

The Concrete Subcommittee of the SEAONC Seismology and Structural Standards Committee is currently investigating different methods of collector design in cast-in place concrete structures.

In general practice, the design of cast-in place concrete structures utilizes collector elements consisting of either concrete beams or special reinforcement placed within the concrete slab. These collectors are designed for linear distribution of the diaphragm force. However, one must consider if a linear distribution of axial force over the entire length of a collector line in a cast-in place concrete slab is appropriate. The Concrete Subcommittee has completed a case study using a finite element model to explore the elastic force distribution in a cast-in place concrete slab. The case study suggests that the distribution of force is affected by several factors, such as relative rigidity, span and span to depth ratio of the diaphragm as well as the relative rigidity between the diaphragm and the Vertical Lateral Load Resisting (VLLR) elements. The case study also indicates that shear transfer from slab to collector is not linear along the collector line.

The shear capacity of a concrete slab at the interface between the slab and VLLR resistance elements is significant and should be considered when designing collector elements. In other words, collector elements may be designed for total collector force minus the shear capacity of the reinforced concrete slab at the interface between the slab and VLLR elements. Note that the appropriate 'Omega' factor should be applied in accordance with the code.

In conclusion, the general assumption that the collector is a simple element that transfers shear linearly along the collector line in a cast-in place concrete slab may be very conservative. However, recommendations regarding the detailed behavior and design of these elements are still under study by the Concrete Subcommittee. The Concrete Subcommittee suggests that the contribution of the shear capacity of the slab/collector at the interface between the slabs and VLLR elements be considered in the design of collectors for cast-in place concrete slab. Any tension stresses (due to gravity loads) at the interface of the slab to VLLR element should also be considered when designing these elements.

Committee Chairs

Business Forum

Reinhard Ludke
415/834-2010 Ext 3003
rludke@cdengineers.com

Bylaws

Vincent deNevers
415/421-0375

Computer Applications

Satinder Singh
510/465-3977
spsingh@pacbell.net

Construction Quality Assurance

Art Dell
415/989-9900
adell@soha.com

Continuing Education

Julia Hunting
415/989-1004
julia_hunting@kpff.com

Disaster Emergency Services

Joe Zsutty
408/298-9018
jzsutty@aol.com

Existing Buildings

David Bonowitz
415/771-3227
dbonowitz@mindspring.com

Legislative

David Wilson
415/834-2010
dwilson@cdengineers.com

Professional Practices

Bill Andrews
510/433-9370
andrews@dasse.com

Program Chair

Jamison Curry
510/740-3200
jcurry@ruthchek.com

Public Affairs & Membership

Derrick Roorda
415/398-5740
droorda@de-simone.com

Public Relations

Mehri Ansari
415/348-8948
mehri@ansariinc.com

Seismology & Structural Strdrs.

Rafael Sabelli
415/243-8400
sabelli@dasse.com

Website

Darrick Hom
510/272-9040
dbhom@degenkolb.com

Young Members Forum

Laura Yamaguchi
510/549-1906
lauray@tippingmar.com

Bulletin Board

August 27th Luncheon Meeting – San Francisco City Club

JOINT MEETING – SEAONC and The Institute of Structural Engineers, U.K

A joint meeting of SEAONC and The Institute of Structural Engineers of the United Kingdom (ISE) will be held on Tuesday, August 27th. Socializing will begin at 11:00 a.m., with lunch and presentation from 12 p.m. to 2 p.m. in the Bechtel Room at the City Club in San Francisco.

Once every ten years the president of ISE visits the United States. The current president of ISE, Dr. David Blockley, invites SEAONC members to attend a luncheon meeting to get acquainted. Dr. Blockley will be accompanied by ISE Secretary Dr. Keith Eaton and their spouses.

Dr. Blockley will present a brief talk on his research interest. The talk is entitled "Reliability of Structures and Structural Systems." Dr. Blockley, in his capacity as President of ISE, is also interested in comparing and contrasting the registration requirements of various countries.

ISE has members not only in the United Kingdom and in the United States but also many in Commonwealth Countries. ISE, along with the Institute of Civil Engineers, serves as the body that issues registration to Structural (and Civil) Engineers in the United Kingdom, serving much like the California Board of Registration does for Structural Engineers registered in this state.

There are some of you out there that are members of both SEAONC and ISE. Dr. Blockley will also spend some time giving the ISE members news of the Institute. Come and get acquainted with our friends from across the pond. Bring your spouse, too. Cost for SEAONC members (and guests of SEAONC members) is \$20.00. Call the SEAONC office at 415/974-5147 by noon, Friday August 23rd to register. Space is limited.

PEER Reports Announces New Publications

The following reports are available from NISEE, Pacific Earthquake Engineering Research Center, University of California, Berkeley, 1301 South 46th Street, Richmond, CA 94804-4698; telephone 510/231-9403; fax 510/231-9461; e-mail info@nisee.berkeley.edu; URL <http://nisee.berkeley.edu/reports/>.

1. *Modeling Soil Liquefaction Hazards for Performance-Based Earthquake Engineering*, by Kramer, Steven L. and Elgamel, Ahmed-W. (PEER 2001/13, 165 pages). This synthesis of current practice summarizes procedures for prediction of liquefaction behavior, describes recent advances in the understanding of liquefaction behavior and outlines the incorporation of this improved understanding into solutions for detailed modeling of soil liquefaction. The report focuses on performance-based earthquake engineering with emphasis placed upon aspects of liquefaction relating to the performance of buildings, bridges and lifelines.

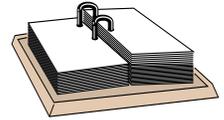
2. *Amplification Factors for Spectral Accel-*

eration in Active Regions, by Stewart, Jonathan P.; Liu, Andrew H.; Choi, Yoojoong; Baturay, Mehmet B. (PEER 2001/10, 132 pages). This report evaluates the degree to which detailed information on site conditions can be used to improve ground motion predictions relative to what is obtained with attenuation relationships.

3. *Ground Motion Evaluation Procedures for Performance-Based Design*, by Stewart, Jonathan P.; Chiou, Shyh-Jeng; Bray, Jonathan D.; Graves, Robert W.; Somerville, Paul G.; Abrahamson, Norman A. (PEER 2001/09, 229 pages). This report synthesizes contemporary procedures for ground motion analysis within a performance-based design framework and documents the past and future role of the Pacific Earthquake Engineering Research (PEER) Center Research in developing these procedures. The subjects of source, path and site effects are discussed in six chapters: Source Characterization, Attenuation Relations, Near-Fault Ground Motions, Site Effects, Ground Motion Simulation and Time History Selection.

EVENT CALENDAR

August 6--Dinner Meeting, San Francisco City Club



August 13th--YMF Social--Pool at Julian's at the Metreon, 6 p.m.

August 21 and 28--SEAONC Summer Seminar: Seismic Upgrade of Existing Buildings

August 27--Joint Meeting Luncheon, SEAONC and Institution of Structural Engineers, U.K., San Francisco City Club

NEW DINNER MEETING PRICE STRUCTURE

- New dinner prices take effect this month.
- Also, the age to qualify for the Junior Member rate has been changed to 29 and under. Please see back page for details.

SEAONC Office Updating Referral List

The SEAONC project referral list is being updated. This list is available free of charge to the public. It is both a service to the community and an aid to SEAONC members. Members' firms are listed with contact information and project types. The SEAONC office estimates that it sends out between thirty and fifty lists each month. If you would like your company to be included please fill out the Referral List Form in this newsletter on page 8 and return to the SEAONC office. Don't be left out!

65 Attend Annual YMF Baseball Event



Thank you to our 37 members and 28 guests for coming to the Annual YMF Baseball game! It was a very emotional game, with Oakland beating the Giants 3-2, and the fireworks afterwards were spectacular!

YMF Announces August 13th Social

The next YMF Social will be Pool at Julian's at the Metreon, 6pm, August 13th. Anyone "young" at heart is welcome. Questions? e-mail Laura Yamaguchi, lauray@tippingmar.com.

Opinions expressed in the SEAONC NEWS are not necessarily those of the Structural Engineers Association of Northern California. Advertising rates and information sent upon request. Acceptance of advertising and informational brochures in the SEAONC NEWS does not constitute endorsement or approval by SEAONC of the products or services advertised. SEAONC reserves the right to refuse any advertising.

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NEW UC BERKELEY EXTENSION
HALF-PAGE AD
(E-MAILED TO VONby client)

Ram International
Repeat Full Page Ad

Forell/Elsesser Engineers, an award-winning structural/civil engineering firm, offers outstanding career opportunities to engineers and CAD drafters with all levels of experience who seek a dynamic, challenging and rewarding work environment (www.forell.com). Work on exciting projects and collaborate with innovative design engineers. We offer an unparalleled salary & benefits package, including employer matched 401(k), pension and incentive compensation plans. Contact: Jim Guthrie, 160 Pine St. #600, San Francisco, CA 94111; fax 415/837-0800 or jim@forell.com.

G.A. Graebe & Assoc., Inc. in Salinas, CA, is seeking an Associate Civil Engineer with at least 10 years experience in Structural Design of Wood, Concrete, Masonry and Steel Structures. Familiar with 1997 UBC and skilled in Computer Programming, Engineering Software and Autocad. CA PE is a plus. Salary is negotiable, depending on experience. Call 831/422-6409 and/or e-mail/ fax résumé to: structdraw@redshift.com, Fax#831/422-3275.

Interactive Resources Architects & Engineers (www.intres.com) offers competitive compensation & benefits, ongoing career development, interesting projects, and a unique firm culture in a great historic coastal town in the East Bay. We also offer ownership potential. Registered PE minimum, SE

preferred. CA/West Coast experience necessary. See our website for more information. Send résumé to 117 Park Place, Point Richmond, CA 94801. Fax: 510/232-5325.

Structural designer position available with a Modesto based structural consulting office. 3 years experience in designing concrete, CMU, steel, and wood structures. Must have good communication skills and be conversant in AutoCad, SAP 2000, ETABS. Send résumé to **Lawder Engineering**, PO Box 3206, Modesto, CA, or fax to 209/521-1166.

RPSE is a 30+ employee Palo Alto firm currently seeking talented EIT's, PE's, & SE's. If you are a dynamic individual with great communication skills and enjoy diverse and challenging projects, we want to talk to you! RPSE offers growth opportunity, competitive salary, great benefits, and a superb working environment. Please fax cover letter & résumé to HR, Attn: Sharon at 650/428-2861 or email to sharonberman@rpse.com. For more details please visit www.rpse.com.

Career opportunities in the structural design of prestigious projects await you at **Rutherford & Chekene**, a recognized leader in structural design and seismic engineering. We have a large current workload and a significant backlog. Projects include museums, libraries, research laboratories, and hospitals. Opportunities are available in our San Francisco and Oakland offices for engineers with 3+ years of experience who have enthusiasm for participating in the design of some of the most exciting engineering

projects in the Bay Area. CE/SE license and prior building design/detailing experience are a plus. If you wish to learn more, please contact Peter Revelli by phone at 510/740-3200 or e-mail at prevelli@ruthchek.com. Also visit our web site at www.ruthchek.com.

Simpson Gumpertz & Heger Inc. (SGH), founded in 1956 by three M.I.T. professors, is a growing and dynamic consulting engineering firm with \$20M in gross revenues, a staff of 180, and offices in Boston, MA, San Francisco, CA, and Washington, DC. SGH has an international reputation in design, investigation, research and development of structural and building envelope systems, mechanical components, and materials. The variety of our expertise enables the firm to undertake investigative, research, and design projects of a complex and unusual nature. Our San Francisco office has several openings for senior level structural and seismic engineers. Positions could lead to shareholding in the firm. Requirements: MS or PhD in Structural Engineering with 15 – 25 years of experience in structural and seismic engineering. Must be a registered Structural Engineer (SE) in CA, and must be capable of obtaining and executing complex structural and seismic engineering projects. We offer an excellent compensation and benefits package in a corporate culture based on learning and growth. At SGH you'll gain the strength of our reputation and the creativity of diverse and complex projects. To learn more about SGH, please visit our web site at www.sgh.com. We are an equal opportunity employer and value the diversity of our workforce. Please forward your résumé and letter of interest to HR Dept.,

New Members

Member

Fariborz Barzegar

Struct-Tech Group, Inc.

I-Hong Chen

Kerry MacDonald

Project Engineer, Monte Stott & Associates

Associate

Nancy Aiello

Design Engineer, SOHA Engineers

Brian DiBarnaba

Designer, Degenkolb Engineers

Petros Keshishian

Project Engineer, ABS Consulting

Wen-Hsiung Lin

Structural Engineer, Ben C. Gerwick, Inc.

Posting for Membership

Member

David Allen, Professional Engineer

David B. Allen, PE, PMP

Matthew Bittleston, Professional Engr.

SOHA Engineers

Scott Fischer, Assistant Project Manager

Watry Design Inc.

Anita Gupta, Structural Designer

Watry Design Inc.

Jason Lee, Project Engineer

Tipping Mar & Associates

James Liu, Designer

Degenkolb Engineers

Stephen Lord, Project Engineer

Hoogerwerf Engineering Group, Inc.

Jessica A. McNerney, Senior Designer

Watry Design Inc.

Andrew Mitchell, Designer

Degenkolb Engineers

Joshua Marrow, Senior Engineer

Simpson, Gumpertz & Heger Inc.

Berta Rodriguez, Proj. Engr, Structures

Rutherford & Chekene

Gina Sandoval

Degenkolb Engineers

Corrine Tan, Engineer

Ove Arup & Partners California

Michael Unsworth, Struct. Plan Checker

Coastland Civil Engineers

Ryan Vuletic, Manager of Engineering

Simpson Strong-Tie

SGH, 297 Broadway, Arlington, MA 02474; FAX 781/643-2009; e-mail jobs@sgh.com

Structural Design Group of Santa Rosa, is looking for a highly motivated, technically skilled engineer looking for a leadership position in an exciting young firm. Associate position available for a bright, creative individual with 2 years minimum design experience in educational facilities, low rise commercial, or residential structures. We offer unlimited opportunities for career advancement and an excellent salary/bonus/benefit package. Please fax résumé to 707/284-3646 or e-mail: RichB@s-d-g.net

Watry Design, Inc. which is located in the San Francisco Bay Area, is in search of highly motivated engineers to join our rapidly growing team. Watry is a full service Architectural/Engineering Firm specializing in the design of large concrete structures, including high-rise hotels and apartments as well as award-winning parking structures. This position offers the right individual an opportunity to play an integral role in the design of multi-million dollar projects with a firm that fosters a cohesive family like environment. The applicant must possess a B.S. in Structural Engineering (or equivalent) with a P.E. or S.E license being highly desirable. A background in the design of concrete and post-tensioned structures, strong computer skills, and excellent communication skills are beneficial. If you would like further information regarding Watry Design, Inc., please visit our web site at www.watrydesign.com. Submit all résumés to: Watry Design Inc., 815 Hamilton Street, Redwood City, CA 94063 attn: Lisa Blanton or you can send electronically to lblanton@watrydesign.com

Bevier Structural Engineering. Sacramento area engineering firm seeks qualified engineers with minimum two years experience in structural design and detailing of buildings. Multiple positions available. California CE or SE preferred. Strong communication and team work skills essential. Project management skills a plus. Excellent benefits and competitive salaries offered. Send or E-Mail résumé to: Bevier Structural Engineering, 2479 Sunrise Boulevard, Gold River, CA 95670-4344, E-Mail: bill@bevier.net

Hilti, Inc., a worldwide leader in the manufacturing and marketing of anchoring and fastening products, is presently seeking a

self-motivated Field Engineer for the San Francisco Bay Area. This position is responsible for educating design professionals concerning proper use and advantage of Hilti products, securing commitments for specification/approval of Hilti products, assisting AE professionals in solving design problems and utilizing sound engineering judgment to solve field problems. The successful candidate will have a high energy level, be willing to work in a fast-paced environment and must enjoy working with a variety of customers (engineers, architects and contractors). Successful candidates must possess a Bachelor's Degree in Engineering and three years minimum experience in engineering or related technical field. Hilti offers a competitive compensation and benefits package that includes salary, bonus, full medical, dental, 401(k), company vehicle, paid expenses and extensive training. Submit all résumés to: Jim Bluse, e-mail: blusjim@us.hilti.com

Hohbach-Lewin, Inc. seeks engineers experienced in the structural analysis and design of new and existing steel, concrete, masonry and wood buildings for its Palo Alto and San Francisco offices. The company serves a wide range of clients and emphasizes professional development by diffusing management duties throughout the organization and rotating staff members between different project types. Hohbach-

Lewin also provides excellent benefits and above-average compensation. Salaries are correlated with experience and expertise. E-mail résumés to: alee@hohbach-lewin.com or Fax: 650-617-5932

OLMM Consulting Engineers (www.olmm.com), is a reputable structural engineering firm with offices in Oakland and San Francisco. The success of our strategic plan and the diversity of our projects have contributed to continued strong business. We have immediate opening for a Senior Structural Engineer in our Oakland office. The position requires SE license and minimum 6 years of responsible experience in the analysis and design of major building structures. We offer top compensation package, excellent opportunity for growth, challenging projects, and a great place to work. Come join us and make a difference! Mail résumé to 1404 Franklin Street, #350, Oakland, CA 94612, attn: Alyssa; or e-mail to alyssa@olmm.com.

*Job Forum insertion fee:
\$150 up to 450 characters/spaces
\$15 for each 45 characters/spaces
thereafter. All job forum ads will be
posted on the SEAONC web site.*

New 1/4 page display ad for ABS Consulting
(pdf sent to Von)

**Reminder:
September Newsletter
Deadline:
Friday, August 9, 2002**

**Submit your articles by
e-mail:
SEAONC@ix.netcom.com**

SEAONC Multimedia Projector for Rent

SEAONC's multimedia projector is available for rental! Voting members can rent the projector for only \$100 a day (plus a \$1000 security deposit). Contact the SEAONC office at 415/974-5147 for more details.



SEAONC Referral List

As a public service to the community and as an aid to the members of SEAONC, a permanent project referral list has been created. Each office may list **one contact only**. To be on the list, complete and sign the form below and return it to the SEAONC office: 74 New Montgomery St., #230 San Francisco, CA 94105 or Fax:415/764-4915

COMPANY _____

ADDRESS _____

TELEPHONE _____

FAX _____

CONTACT PERSON _____

SIGNATURE _____

If your firm is already on this list (check on web site: www.seaonc.org) and you have *no changes*, please fill in company and contact name, sign the form and check this box

If we do not hear from you- the listing will be deleted.

Project Types: (check all that apply)

- 1. Single-family Homes
- 2. Multi-residential
- 3. Commercial
- 4. Unreinforced Masonry Buildings
- 5. New Construction
- 6. Renovation
- 7. Investigations and Reports
- 8. Post-earthquake Inspection and Repair
- 9. Material Testing and/or Inspection
- 10. Geotechnical
- 11. Parapet Bracing
- 12. Construction Shoring
- 13. Excavation Shoring and Underpinning
- 14. Consultation for Legal
- 15. Seismic Bracing of Non-structural Elements

This list, appearing on web site or sent out, will contain the following message: "This list is provided as a public service by the Structural Engineers Association of Northern California. Included are firms that have indicated they have engineers available for these services. Building owners and engineers must work together in determining the scope of work and in negotiating a fee for engineering services."

*NEW Ad for
Computers and Structures*

upcoming events

- AUG
- 6 Dinner Meeting, The City Club
 - 13 YMF--Pool at Julian's, 6 p.m.
 - 21, 28 SEAONC Summer Seminar:
Seismic Upgrade of Existing Buildings
 - 27 Joint Meeting Luncheon, SEAONC and
Institution of Structural Engineers, U.K.,
The City Club

Registration

Structural Engineers Association of Northern California
AUGUST 6th SEAONC DINNER PROGRAM, CITY CLUB, SAN FRANCISCO

5:45 PM
General Assembly

6:30 PM
Dinner

7:30 PM
Program

*"Structural
Implications of
Explosive Attack"*

Location:

The City Club
155 Sansome Street,
10th Floor
San Francisco

BART:
Montgomery Street
Exit
San Francisco

If no label is shown above, or for guests, please fill in the form below.

NAME _____

COMPANY _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

PHONE _____ FAX _____

RSVP by fax to: 415/764-4915 or phone: 415/974-5147
Make check payable to **SEAONC** and bring with you to the door.

Deadline for pre-registration: 12 noon, Friday, August 2, 2002

Dinner and program reservations are limited. Register early! No cancellations after 12 noon, Friday, August 2, 2002. *No-shows will be invoiced. Tickets not claimed by 6:45 p.m. on the night of the event are subject to being sold. Note: Individuals with outstanding monthly meeting balances are required to pay in advance for a meeting reservation and pay all outstanding monthly meeting invoices.*

COST:	PRE-REGISTERED	LATE REGISTRATION
SEAONC Member	<input type="checkbox"/> \$34	<input type="checkbox"/> \$39
Junior Mbr (29 and under)	<input type="checkbox"/> \$28	<input type="checkbox"/> \$33
Non-Member	<input type="checkbox"/> \$39	<input type="checkbox"/> \$43
Student	<input type="checkbox"/> \$15	<input type="checkbox"/> \$15

← **NOTE: New prices, and new age for Junior Member**