A TOTAL ENERGY ASSESSMENT

by Dr. Dan Santini

HYBRID ELECTRIC VEHICLE PROJECT

by UIC Students

MICHIANA DIVISION TOUR OF
CLARK ENGINEERING SERVICES

See the "INVESTMENT NEWS" and JOB SHOP SHOW
This is the first issue of the SAE Chicago Section Newsletter in the 1994-1995 Season. I would like to use this opportunity to thank you the Section Members for your vote of confidence in the new Section Board which you elected in May. We will do our very best to provide the Section with engineering activities and “quality” service that benefits the membership at large. But we need your feedback, your criticism and your support in order to understand how we are doing and how we can improve our activities. And more than that, we need your active help! We are all volunteers, therefore we do things out of the desire to serve the engineering community, and the need to learn new skills in working with people! In the process, we all want to become better engineers, better leaders, better human beings. Come and join us!

You can reach any board member directly (the current list is included in the newsletter). You can also offer your comments and help during our technical meetings which we invite you to attend in larger numbers this year.

Talking about meetings, the Section Board has planned a very interesting program this year. We will have state-of-the-art technology presentations, inspiring coffee talks, a visit with the SAE president nominee, plant tours, etc... The September meeting will deal with the technology of electric and hybrid vehicles, a “hot” topic in advanced automotive applications. We will have more information on our meetings in each newsletter. Look for them and mark your calendar to attend as many as possible. Meet with peers, socialize in a quality country-club setting, make new friends and network with engineers and future engineers (our student chapters).

See you all on September 20!

Rodica A. Baranesucu
Section Chair
To register... Call 1-800-225-4535

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<th>Position</th>
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<tbody>
<tr>
<td>Rodica A. Baranescu</td>
<td>Chair</td>
<td>(708) 865-3717</td>
</tr>
<tr>
<td>Chuck Cornell</td>
<td>Past Chair</td>
<td>(708) 971-2442</td>
</tr>
<tr>
<td>Gary Novak</td>
<td>Vice-Chair</td>
<td>(708) 674-7701</td>
</tr>
<tr>
<td>Margaret Bain</td>
<td>Treasurer</td>
<td>(708) 865-3167</td>
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<tr>
<td>Dan Kapellen</td>
<td>Secretary</td>
<td>(708) 971-2442</td>
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<tr>
<td>Eugene Wallace</td>
<td>Co-Chair, Math &amp; Science</td>
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<tr>
<td>Ray Heller</td>
<td>Co-Chair, Math &amp; Science</td>
<td>(708) 963-9175</td>
</tr>
<tr>
<td>Steve Underwood</td>
<td>Vice-Chair, Membership</td>
<td>(312) 236-8123</td>
</tr>
<tr>
<td>Carson Eddy</td>
<td>Vice-Chair, Student Activity</td>
<td>(312) 227-2410</td>
</tr>
<tr>
<td>Jim Buxton</td>
<td>National Delegate</td>
<td>(708) 865-4339</td>
</tr>
<tr>
<td>Jim King</td>
<td>First Alternate</td>
<td>(708) 887-2012</td>
</tr>
<tr>
<td>Al Kluge</td>
<td>Second Alternate</td>
<td>(708) 859-4974</td>
</tr>
</tbody>
</table>

### Standing Committee Chairs

<table>
<thead>
<tr>
<th>Name</th>
<th>Committee</th>
<th>Phone Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dave Morris</td>
<td>Meetings/Programs</td>
<td>(708) 971-2442</td>
</tr>
<tr>
<td>Michael Block</td>
<td>Engineering Career Resources</td>
<td>(708) 789-0003</td>
</tr>
<tr>
<td>Chuck Cervenka</td>
<td>Magazine Editor</td>
<td>(708) 968-0459</td>
</tr>
<tr>
<td>Linda Gogola</td>
<td>Co-Editor</td>
<td>(708) 859-5774</td>
</tr>
<tr>
<td>Jack Shultz</td>
<td>Advertising</td>
<td>(708) 529-4434</td>
</tr>
<tr>
<td>Mary Jaque</td>
<td>Advertising</td>
<td>(708) 887-2203</td>
</tr>
<tr>
<td>Steve Burdette</td>
<td>Chair Company Reps</td>
<td>(708) 887-3736</td>
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<tr>
<td>Bill Warren</td>
<td>Arrangements</td>
<td>(708) 865-3318</td>
</tr>
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<td>Kelly Bowland</td>
<td>Reception</td>
<td>(708) 858-4867</td>
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<td>Chuck Cornell</td>
<td>Long Range Planning</td>
<td>(708) 971-2442</td>
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<tr>
<td>Gordon Bailey</td>
<td>Long Range Planning/Photographer</td>
<td>(708) 869-5001</td>
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<td>Al Kluge</td>
<td>Co-Photographer</td>
<td>(708) 859-4974</td>
</tr>
<tr>
<td>Dave Olson</td>
<td>Engineers Week</td>
<td>(708) 858-2800</td>
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### Vice Chair, Activities

<table>
<thead>
<tr>
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<tr>
<td>Adam Wolf</td>
<td>Electronics</td>
<td>(708) 971-2442</td>
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<tr>
<td>Bob Larsen</td>
<td>Advanced Technology</td>
<td>(708) 252-3735</td>
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<tr>
<td>Les Asher</td>
<td>Fuels &amp; Lubricants</td>
<td>(708) 420-5944</td>
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<tr>
<td>Bob Hawken</td>
<td>Agricultural Machinery</td>
<td>(708) 887-2313</td>
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<tr>
<td>Marty Keane</td>
<td>Construction Equipment</td>
<td>(708) 859-5436</td>
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<td>Yolanda Huslig</td>
<td>Powerplants</td>
<td>(708) 865-4053</td>
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<td>Kelly Bowland</td>
<td>Light Duty Vehicles</td>
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<tr>
<td>Rich Barthel</td>
<td>Parts &amp; Accessories</td>
<td>(708) 260-7317</td>
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<td>Bill Lindsey</td>
<td>Manufacturing &amp; Materials</td>
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<tr>
<td>Diane Eaves</td>
<td>Powertrain Development</td>
<td>(708) 789-0003</td>
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### Michiana Division

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<tbody>
<tr>
<td>Dennis Berndt</td>
<td>Past Chair</td>
<td>(219) 873-3516</td>
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<tr>
<td>Gary Patterson</td>
<td>Chair</td>
<td>(219) 879-5451</td>
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<tr>
<td>Al Rioli</td>
<td>Vice Chair</td>
<td>(219) 926-2170</td>
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<tr>
<td>Nick Mawhorr</td>
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(Ms. Martin is former U.S. Secretary of Labor)
Environmental and Energy Effects of Introducing Electric Vehicles

by

Danilo J. Santini, PhD

The presentation will focus on the best initial applications of electric vehicles (EVs), considering patterns of use and geographic/spatial locations of vehicles. Features such as relative fuel consumption, greenhouse gas emissions, and "criteria pollutant" emissions will be addressed. The misconception that the environmental merits of EVs should be measured in terms of total energy cycle emissions will be discussed. The potential benefits of the differences in spatial and compositional patterns of emissions relative to gasoline vehicles will be examined. The speaker will speculate on the best and worst applications of EVs, and relate those to the most likely location of introductions of EVs.

Dr. Santini is Section Manager of the Environmental and Economic Analysis Section of the Center for Transportation Research at Argonne National Laboratory. He has been employed at Argonne National Laboratory for nineteen years. Generally, his research has involved examination of the energy and environmental behavior of technologies, and evaluation of policies designed to encourage the use of more efficient technologies or to improve the environment. Dr. Santini has approximately 100 publications of articles, reports, conference papers, and contributions to books. Dr. Santini holds a Bachelor of Architecture from Massachusetts Institute of Technology, a Masters of Business and Economics from the Illinois Institute of Technology, and a PhD in Urban Systems Engineering and Public Policy Analysis from Northwestern University.

Coffee Talk:

University of Illinois at Chicago's Dodge Neon Hybrid Electric Vehicle

by

Walter Gorczowski and Kevin Bishop

The SAE chapter at UIC is constructing a Hybrid Electric Vehicle for the 1995 Hybrid Electric Vehicle Challenge sponsored by Chrysler and the Department of Energy. The donated Dodge Neon is powered by two energy sources, natural gas and electricity. This small, clean burning natural gas engine produces large improvements in fuel economy and emissions for cruise conditions. The electric drive system supplies added power for rapid acceleration and is the sole source of power in the vehicle's thirty mile electric emissions range.

Walter Gorczowski and

Kevin Bishop have been Ch:
person and Vice-Chairperson respectively of the SAE student chapter at UIC since 1991. The students have been involved in the construction of Illinois' first solar powered vehicle, as well as two SAE Mini-Baja vehicles. Walter is currently studying mechanical engineering at UIC and Kevin holds a BSME from UIC.

Adam Wolf is a software engineer at Synchro-Start Products Inc. where he is responsible for development of software for engine controls. Adam holds a B.S. in Electrical Engineering from the University of Iowa and has seven years experience in automotive and aircraft control software.

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400 EAST ORCHARD STREET
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SEE MAP ON NEXT PAGE

5:30 P.M. Social Period
6:00 P.M. Dinner
7:00 P.M. MEETING

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Successful money management requires a standard by which you can measure your economic progress. One gauge of your financial headway is your personal net worth—the difference between your assets and liabilities. Preparing a simple personal balance sheet can help you estimate your net worth and will also blueprint how you are managing your money by allowing you to see not only what assets and liabilities you have, but where and how they are going. Once you know these things, you can take steps to make your net worth grow by finding ways to control spending, reduce debt and increase your savings and investments.

How to Estimate Your Net Worth
If you haven't considered your net worth before, there's no time like the present to think about it. To begin your personal balance sheet, you will need to set aside a block of uninterrupted time, a large notepad, and a pencil. Once you have an estimate, you can go into more depth if you wish. Here's what to do:

1. List all your assets (everything you own that can be sold or swapped for another item of value). Include your house, car, furniture, clothes, jewelry, bank accounts, stocks and other investments, vested holding in company savings and pension plans, Individual Retirement Accounts and cash-value life insurance.
2. Write the market value next to each asset.
3. Total your assets.
4. List your liabilities on a separate sheet. Record all of your debts, including credit card and charge accounts, your home mortgage, home equity line of credit and any other loans, such as for automobiles, college or investments.
5. Write the principal amount still due next to each liability. Do not include interest.
6. Total your liabilities.
7. Subtract your liabilities from your assets.
The end result is your net worth. (If assets exceed liabilities, you have a positive net worth. If liabilities exceed assets, your net worth is negative.) You now have a foundation for setting new goals, monitoring your progress and working toward making your bottom line grow.

Reorganizing Your Priorities
With your asset-liability inventory in hand, you can begin to decide whether your finances are allocated in ways that will let you accomplish your objectives. If you're not headed in the right direction, what can you do to change course? Depending on your goals, you may want to pay down old debts, postpone new ones, initiate a savings plan, go on a belt-tightening budget or begin a more aggressive investment policy.

Putting your Financial House in Order
In addition, you can use your worksheet as a tool in conducting other financial housekeeping, such as reviewing your homeowners' insurance coverage, revising your will or planning for retirement. With all this material now organized, you can also document other relevant information, such as where you keep your will, insurance policies, mortgage records and other important papers. While you're at it, put together a letter of instruction in the event of an emergency and make sure someone close to you knows the exact location of this letter and your files.

If you make recalculating your net worth an annual chore, as the years pass you'll be able to make comparisons, learn from your mistakes, assess your progress and work toward improving your money management. Your financial recordkeeping will benefit, too.
It is a common axiom that a product should be thoroughly tested before the customer places it in service. The simple verification of the life of the completed product is frequently what is envisioned in such a statement. What is often overlooked by those outside the testing community is the extent to which testing impacts the entire product development, quality, and production process. It is the intent of this presentation to review the overall contribution of a comprehensive test program to the introduction of a broadly accepted product.

Speaker: Robert F. Hand is General Manager of Clark Engineering Services, a contract development testing organization. In addition to his staff management planning duties, Bob heads the marketing and new business development activities. Bob served as both writer and instructor of the series on "Basic Noise Control" offered through SAE as a seminar and a video. He holds a B.S. in Electrical Engineering from the University of Michigan, along with an M.A. in Management from Nazareth College.

Chairman: Bill Ropp, Director of Operations, oversees the product testing and materials engineering activities at Clark Engineering Services. He has been involved in test design, management and staffing for over 25 years. Bill is also Vice Chairman-Plant Representatives for the SAE Michiana Division.
TOUR: CLARK ENGINEERING SERVICES
TIME: 6:00 p.m. (Michigan time-EDT)
821 East Front Street
Buchanan, Michigan

SEE MAP ON THE NEXT PAGE

DINNER MEETING:
ORCHARD HILLS COUNTRY CLUB
NILES-BUCHANAN ROAD
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SOCIAL PERIOD: 7:30 p.m. EDT
DINNER: 8:00 p.m. EDT

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Synchro-Start is committed to quality, service and cost effective products. We have been recognized "Supplier Certified" by a dozen industry leaders. At present, we are in the midst of qualifying to meet ISO 9001 standards. Our commitment to qualify enables us to efficiently satisfy our customers' requirements. OEM's call on Synchro-Start to design and develop electro-mechanical linear actuators and electronic protection devices. With our DAI Controls Division we design strategies that are tested and evaluated through computer simulation providing systems that interface the precision of electronic controls with the realities of mechanical systems. Systems have been field proven in transportation, industry and agriculture.

An international leader, Synchro-Start maintains manufacturing, sales, service and warehouse facilities throughout the world. To accommodate the added capabilities generated by Synchro-Start/DAI, a new company, Synchro-Start Products Europe Limited, has been formed to handle the growing European responsibilities.
<table>
<thead>
<tr>
<th>Meeting Date</th>
<th>Topic Speaker</th>
<th>Coffee Talk Speaker</th>
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<tbody>
<tr>
<td>9/20/94</td>
<td>Electric Vehicles: A Total Energy Assessment Dr. Dan Santini, Argonne</td>
<td>Hybrid Electric Vehicles Kevin Bishop, UIC</td>
</tr>
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<td>10/11/94</td>
<td>Automobile Safety in the 90's John Lemonen, SAE President</td>
<td>Internet: Accessing Government Research Documents Bob Larsen</td>
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<td>11/15/94</td>
<td>Advanced Diesel Topics John Needham, Ricardo</td>
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<td>12/13/94</td>
<td>Indy Car Racing Rep from NewmanHaas Racing</td>
<td>Virtual Prototyping in Racing Jim Price, Mechanical Dynamics</td>
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<td>TBD</td>
<td>World in Motion TBD</td>
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<td>2/14/95</td>
<td>Advanced Batteries</td>
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<td>3/14/95</td>
<td>Dodge Viper</td>
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<td>4/18/95</td>
<td>Electronic Control for Truck Transmission Eaton Rep</td>
<td>Knock Sensors for Diesel Engines</td>
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<td>5/9/95</td>
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