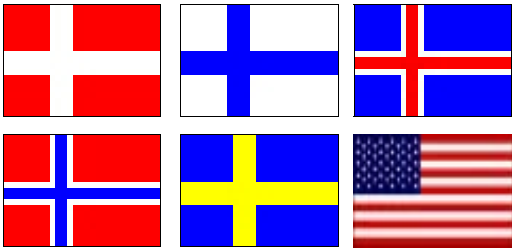

VALLE Review

A report of the Valle Scholarship and Scandinavian Exchange Program
at the University of Washington, Seattle, August 1999

The Director's Column

The year 2000 for many people means concern over computer operations broadly categorized as the Y2K problem. For the Valle Office, however, spring of the year 2000 marks 20 years of operation for the Valle Program. It is a time for remembering with gratitude the wonderful gift of Henrik and Ellen Stray Valle in providing for perpetual funding of graduate scholarships. In those 20 years, over 400 people have been scholarship recipients. While these scholars have gone on to do well in the world, we trust that their lives have been, as well, enriched by their educational and exchange experiences.

Associate Director's Report

Professor John Ferguson, Associate Director of the Valle Program, writes: This spring I had the opportunity to visit Scandinavia and meet with former Valle scholars and others interested in the exchange program. It was deeply rewarding to see how important the exchange scholarships and the education at Washington have been to many individuals, and it is exciting to see the opportunities and challenges for the program in the future.

On my trip, which included visits in Denmark, Norway and Sweden and an extended stay at Tampere University of Technology in Finland, I met with about ten former Valle scholars in the environmental engineering area, as well as others who have studied at University of Washington. I also heard many reports of what other former scholars are doing. I am immensely impressed with the good positions and the interesting careers of these people, with the continuing studies toward doctoral degrees of several, with their strong, positive feelings about the time in Seattle and with their interest in supporting and helping the Valle program in the future.

I also visited several universities and research institutes and would like to note some interesting developments in possible exchanges. As most of you know the mode for exchanges in civil engineering has almost always been that Scandinavian students come to UW as candidates for Masters and that UW students going to Scandinavia work mainly on research projects. There are now excellent reasons to broaden the options for exchange scholars. In every country I heard about graduate programs that are taught in English, making it possible for UW students to earn certificates or

degrees at Scandinavian universities, as well as participating in research. I also found that there is an increasing emphasis on PhD programs at most universities and that there are strong incentives for students to study abroad as part of their study program. While most such exchanges likely will be within the European community, there is certainly the opportunity for UW doctoral students to seek Valle support for work in research groups in Scandinavia and for Scandinavian doctoral students to come to the UW to participate in our research. These new modes of study for exchange scholars seem very exciting to me and I look forward to seeing UW students earning degrees abroad with Valle support and to a flow back and forth of doctoral students, strengthening their research abilities and the ties between research groups at UW and Scandinavia. On a personal note, I was enjoying my first sabbatical in Norway at the time the Valle program was established nearly 20 years ago, and I have had the chance to work with many excellent people because of their support as Valle Scholars. I have been one of the real beneficiaries of the program, professionally and personally, through these people and many others that I know because of them. It is a great pleasure to be able to renew acquaintances, to see some of the results of a very successful program, and to look toward some very exciting new opportunities for future scholars.

Visitors

The Valle Program was pleased to have Thomas Christensen and Lizzi Andersen, of Denmark, spend their sabbatical year at the University of Washington. Professor Christensen's home institution is the Department of Environmental Science and Engineering at the Technical University of Denmark in Lyngby. Lizzi Andersen is on leave from her position as Chief Engineer at VKI. During their year in Seattle, Professor Christensen worked primarily with Professor Mark Benjamin and Dr. Greg Korschin in the Department of Civil and Environmental Engineering and with Professor Raj Bordia and PhD student Mairead Stackpoole of the Materials Science and Engineering Department.

In June 1999, KTH Vice President Anders Ericksson visited faculty in Civil and Environmental Engineering and the Valle Program to discuss areas of cooperation and cooperative research. Dr. Eriksson was at the UW at the invitation of Professor John Stanton.

Three Finnish guests visited the Valle Program in July 1999. Eila Hirvonen, Head of the International Office for Tampere University of Technology, Leila Mustanoja, Executive Director for the Finnish Fulbright Center, and Tuula Laurila, Program Director for the Finnish Fulbright Center. Discussions centered on enhancing cooperation between the University of Washington (UW) and Tampere University and other Finnish programs. The three were in Seattle as part of the national Finn Fest meeting held at the UW campus.

Valle Scholars, 1999-2000

This year the income from the Valle trust funds will provide support for 16 new scholars.

Four exchange scholars will arrive from the Nordic Countries.

Denmark: **Jens Laursen,** Structural Engineering and Mechanics, from The Danish Engineering Academy.
Iceland: **Hákon Bárðarson**, Structural Engineering and Mechanics, from the University of Iceland.

Finland: **Raghida Lepistö**, Environmental Engineering, Tampere University of Technology.

Norway: **Fredrik Prøsch**, Architecture, Rørøs.

American Valle scholars from other universities are: **Nils Lindwall**, Michigan Technical University, Geotechnical Engineering; **Daniel Matthews**, University of Arizona, Environmental Engineering; **Maeve McBride**, University of Pennsylvania, Water Resources and Hydraulic Systems; and **Jennifer Soderstrom**, University of Minnesota, Structural Engineering and Mechanics. From the U of Washington is **Jennifer Barnes**, Transportation Engineering.

University of Washington graduate students chosen for study opportunities in Scandinavia:

Denmark: **Andrew Karvonen**, Environmental Engineering, to Danish Technical University.

Norway: : **Jeffrey Boone**, Architecture, to Rørøs, Norway; and **Amy Groome**, Water Resources and Hydraulic Systems, to Interconsult, Oslo.

Sweden: **Ashley Ballantyne**, Environmental Engineering, to Uppsala University; **Amy Davis**, Landscape Architecture, to Stensund Folk College; **Lara Dutto**, Architecture, to the Royal Institute of Technology, Stockholm.

News and Comments

In May and early June, Professor Folke Nyberg visited architecture programs in Sweden and Denmark on behalf of the Valle Program. Included in his tour were the Royal Institute of Technology in Stockholm, Chalmers Institute of Technology in Gothenburg, Lund Institute of Technology in Lund, and the Royal Academy of Fine Arts in Copenhagen. The purpose of the visit was to renew current ties with faculty and to broaden the exchange opportunities of Valle scholars from Architecture.

Former Valle Scholar Heather (Merseth) Stephens and Professor David Stensel were notified by the Water Environment Federation (WEF) that they are to be the recipients of the 1999 Harrison Prescott Eddy Medal in recognition of the excellence of their article, *Effect of Operating Conditions on Biological Phosphorus Removal*. The medal is to be awarded at the October annual conference of the WEF. The notification letter said the research reported in the article *makes a vital contribution to the existing knowledge of the fundamental principles of wastewater treatment*.

Erland Jansson continues to direct environmental studies through his Saskatchewan consulting firm, JCSl, in Regina, Canada. He also serves on the Advisory Committee for Environmental Systems Engineering at the University of Regina. His two most recent papers were presented in June 1999 at the University of Saskatchewan Manure Management Conference on odor control in the expanding hog industry in Saskatchewan.

Paul Thomassen works for Selvaag Homes in Oslo. He visited the Valle Office in Summer 1999.

Former Valle Scholar Grete Rasmussen visited the Valle Office in July. Currently she is working on her doctoral research at locations in Norway and Denmark. Her study involves the use of planted permeable barriers to treat creosote contaminated ground water. Prior to her visit she had written that after UW graduation she worked for the King County Solid Waste Division before returning to Norway to work for Jordforsk. In January 1998 she received a scholarship from the Norwegian Research Council to work for her PhD.

Former Valle Scholar Andrew Strehler writes that he is working for the King County Wastewater Treatment Division and occasionally works with Professors Stensel and Ferguson on research projects such as thermophilic digestion and anogic gas flotation, at the county's wastewater treatment plants. He still has contact with Thomas Welander who served as his advisor in Lund, Sweden.

Erika Holt, now a visiting research scientist at the Technical Research Center of Finland, has had two papers published. The first appeared in the Transportation Research Record, No. 1610, 1998, and was entitled, *Influence of Early Age Volume Changes on Long-Term Concrete Shrinkage*. The paper was co-authored with UW Professor Donald Janssen. The second paper, *Autogenous Shrinkage at Very Early Ages*, was co-authored with M. T. Leivo, at VTT Building Technology, Finland. The paper was in the Proceedings of the International Workshop on Autogenous Shrinkage of Concrete, June 1998, Hiroshima, Japan.

Gunilla Franzen, *Soil Nailing — A Laboratory and Field Study of Pull-Out Capacity*, PhD Thesis at Chalmers University of Technology, Gothenburg, Sweden, 1998. Former Valle scholar Franzen completed her PhD thesis in August 1998. The study objective was to get a better understanding of the pull out capacity of soil nails in sand and to suggest a method for more accurate prediction of that capacity. The greatest capacity was obtained for grouted nails, a lower capacity was obtained with ribbed bars.

James Michael Strout, *Evaluation of the Field Compressometer Test in Sand*, DE Thesis, NTNV, Trondheim, Norway (May 1998), Major Professor Kaare Senneset. The objectives of the research were to evaluate various aspects of field compressometer equipment and to develop an interpretation method for estimating deformation moduli of sands. The proposed interpretation method allows the field compressometer to be used successfully in medium and dense sands where installation disturbances affect the initial portion of the load deformation curve causing other existing interpretation methods to yield uncertain modulus estimates.

Paul Ormseth writes that his time in Oslo studying at the Oslo School of Architecture under Architect Sverre Fehn were a life-changing experience for which he will always be thankful. He now has his own architectural practice in St. Paul, MN.

Merete Hoff wrote from Oslo where she works for an architectural firm that has commercial building projects rang-

ing from rehabilitation of older buildings to new office buildings and hotels. She recently was in Manhattan for a short architecture study trip.

Greetings were received from Marc Edwards, Associate Professor at Virginia Tech Department of Civil Engineering.

Ingunn Marton wrote from Oslo, Norway. She has worked as a Lead Auditor at Det Norski Veritas and as Adviser in energy efficiency and environmental impacts for The Information Centre for Energy Efficiency. She and Roaul have two boys, Patrick and Amund.

We were pleased to hear from so many of you indicating your preference on how you wished to receive the Valle Review — reading it on the web, by email or by regular mail.

Valle Scholars Funded 1998-99 Academic Year:

Architecture:
William Cory Crocker
Elena Pesic
Helle Søholt
Webster Wilson

Environmental Engineering and Science:
Marta Danielsdottir
Katherine Hilton
Brian Huser
Ólöf Rós Káradóttir
Andrew Karvonen
Laura Landauer
Donna Podger
Andrew Wood

Structural, Geotechnical Engineering and Mechanics:
Jostein Aasen
Kevin Branch
Wendy Burton
Ryan Hofmeister
Jared Nelson
Adam Perez

Transportation, Surveying and Construction Engineering:
David Horn
Snæbjörn Jónasson
Kevan Shafizadeh
Joseph Taflin
Rhonda Young

Urban Design and Planning
Paul Hess
Sigriður Kristjánsdóttir

Valle Scholars Completing Degree Requirements During 1998-99 Academic Year:

Master of Science in Civil Engineering
Wendy Lynne Burton
Ryan Jon Hofmeister
Asberg Konrad Ingolfsson
Andrew Paul Karvonen
Laura Jo Landauer
David Gordon Lucas
Stephen Thomas Muench
Jessica L. Shickman

Master of Architecture
Christopher Bach Brown

Included Among the Valle Scholar Reports Received by the Valle Office

The following reports are available to read at the Valle Program Office:

Civil and Environmental Engineering

Laura C. Bowling and Dennis P. Lettenmaier, in their report, *Evaluation of the Effects of Forest Roads on the Streamflow in Hard and Ware Creeks* indicated that forest roads redistribute soil moisture throughout the basin, resulting in drier areas beneath the

road right-of-way and localized saturated areas from culvert discharge. The road network tends to increase peak flows. With current vegetation, the road network was estimated to increase the ten year return period flood by 8% in Ware Creek and 10% in Hard Creek. Comparison of the current condition simulation with results of a simulated undisturbed basin (mature vegetation and no roads) indicated that the ten year return peak flow rate might be increased by 22% and 18% in Ware and Hard Creeks respectively, due to road building and clear cut logging.

Wendy Burton, *Analysis of Falling Weight Deflectometer Tests for Various Subgrade Moduli*, Project Report, Chalmers University of Technology, 1998, Dr. Sven Liedberg, Chalmers Advisor. Roads built on soft clays can develop severe rutting and cracking over a short period of time. Burton's research studied how the shear modulus of the clay influenced the behavior of the roads. Her work showed that two factors would be likely to contribute to rapid deterioration of roads constructed on these soft clays. First, disturbance of clay directly beneath the embankment results in a clay with a very low shear modulus and second, the stiffness of the base layer is lower than expected based on standard empirical values.

Patricia C. Henshaw, *Restabilization of Stream Channels in Urban Watersheds: Long Term Channel Response to Urbanization in the Puget Sound Lowlands,* MSCE Thesis, Dr. Derek Booth, Major Advisor. The purpose of her research was to determine whether alluvial channels are capable of restabilizing over a period of years to decades of constant urban land use in their watersheds.

The study encompassed seven small watersheds representing a typical range of Puget Sound lowland streams with urbanization levels ranging from the rapidly developing suburban fringe to established urban core. In general, Puget Sound lowland streams were likely to restabilize within one or two decades of constant land use in the water shed. The extent of hydrologic change and the responsiveness of the channel and watershed, as characterized by geology, local grade control, and riparian corridor conditions, appeared to be the controlling factors.

R. Jon Hofmeister, *Relative Earthquake-Induced Slope Instability Hazard Maps of the South Salem Hills Vicinity, Oregon*, 1998, Project Report. Relative hazard maps are a vital tool in making realistic judgments regarding land use, development and public safety. The goal of Hofmeister's project was to produce an earthquake-induced slope instability hazard map to serve as an aid in evaluating relative hazards in the South Salem Hills vicinity.

The map produced delineates hazard zones using a relative scale of *Very Low* to *High*. The map is generally applicable for regional applications but should not be used as an alternative to site specific studies in critical areas. The map is intended for use in conjunction with other available resources to make informed regional decisions regarding new developments as well as for retrofits and mitigation measures.

David M. Horn, *Examining the Incorporation of Transportation Demand Management Strategies into Mode Choice*

Models with a Specific Emphasis on the Modeling of Vanpool Mode Choice, MSCE Thesis 1999, Major Professor Scott Rutherford. Horn's research noted the following: 1. Vanpools are sufficiently different from carpools to warrant a separate mode option. Mode choice models that examine vanpools separately can and should be developed. 2. The cost associated with mode options affect mode choice. Cost factors should be included in mode choice models to represent their impacts on travel behavior. 3. The distance of travel has an impact on mode choice. TDM strategies that are directed towards vanpooling, transit, and non-motorized modes should be targeted to appropriate markets.

Asberg K. Ingolfsson, *Elastic Modulus Prediction for Seattle Area Concrete*, MSCE Thesis, 1998, Major Professor Donald Janssen. Ingolfsson's research investigated the relationship between compressive strength, paste content and the modulus of elasticity for cement concrete. His results showed that the prediction for elastic modulus involving both compressive strength and paste content is more accurate than using only the compressive strength of the concrete as recommended by the current building codes. Regression results showed that it is better to raise the compressive strength to the power of 0.25 instead of using the square root as is done in today's designs.

Laura Landauer, *Preliminary Studies of Groundwater Flow in the Hellerud Region Using Three Dimensional Computer Modeling,* Project Report 1999. Landauer's report covers computer studies done at the Norwegian Water Resources and Energy Directorate in Oslo and examines changes in local hydrogeology due to the train tunnel, Romeriksporten, which goes under the Hellerud region in the Oslo Metropolitan area. A three dimensional computer model was constructed using Visual MODFLOW to study groundwater movement in the region.

Stephen T. Muench, *Construction-Related Asphalt Concrete Pavement Temperature Differentials*, MSCE Thesis, 1998, Major Professor Joe Mahoney. This study examined four 1998 Washington State paving projects to assess the potential for premature asphaltic pavement failures due to cool spots in the pavement during placement of hot temperature paving mixtures. Identified cool spots consistently showed higher levels of air voids. These higher air void areas evidently lead to premature surface failure when compared to the pavement mat as a whole.

Architecture and Urban Planning

Helle L. Søholt, *A Character of Openness*, M Arch Thesis, Major Professor Katrina Deines, 1999. Søholt's thesis presents some spatial problems in three Seattle neighborhoods. Her study looks at the character of openness in the city which she defines as opportunity, choice and possibility for individual spatial and architectural interpretations and which are the essential bases of the American city and society. Helle notes that *movement* and *place* are oppositions, but, as well, are the most important counterpoints or contrast in the American city.

Webster Wilson, *The Finnish Wood House*, Project Report, 1998, advisors Professor Phil Jacobson, UW, and Pro-

VALLE SCHOLARS AND FRIENDS NEWS UPDATES

We would like to receive updates about our Valle scholars and friends. If you would take the time to complete the information below and send it to us either by mail or email it would be most appreciated.

Name:_____

Year / Degree_____

Address: _____

Email address: _____

Phone: (home)_____ (work) _____

News:

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Please mail information to:

Prof. Dale A. Carlson, Director
Valle Scholarship & Scandinavian Exchange Program
University of Washington
Box 352130
Seattle, WA 98195-2130, USA

or email to:

valle@rio.engr.washington.edu

APPLICATION PROCEDURES

Graduate School Application
Due to the time required for processing, international applicants are strongly encouraged to submit application materials prior to November 1.

Applicants now have the option of submitting the UW Graduate Application via the World-Wide-Web as well as by mail. Some features of the Web application include: a reduced application fee of $45.00 and the option to pay the fee electronically by credit card.

Graduate Admissions is in the process of implementing a self-screening procedure to assist potential international applicants in determining whether or not they are eligible to apply for graduate study at the University of Washington.

If you wish to apply via the Web please visit departmental Web pages for more information. If you cannot find the Web address for the department, go to:

http://www.grad.washington.edu/admissions/viewchoice.html
or
https://www.grad.washington.edu/application
also the Valle Web site has links to UW departments, see:
http://www.engr.washington.edu/activities/valle/

Valle Application
You will need to submit copies of your departmental application materials, the graduate school application, and a completed Valle Scholarship Application. We are able to send you the Valle Application via e-mail if you are able to receive *word attachments*. If you wish to send the Valle Application materials to the Valle Program via fax you may send it to the following fax number: (206) 543-2907.

GRE and TOEFL Test Information

The GRE (Graduate Record Examination) is required of all applicants to the UW Graduate School, and the TOEFL (Test of English as a Foreign Language) is required for applicants whose native language is not English.

Tests should be scheduled early so that the results of the tests are available by the February 1 deadline for Valle applications.

Information in regard to the GRE and TOEFL is available on the internet at:
http://www.kaplan.com

International Information

Orientation. The International Services Office (ISO) will conduct its annual orientation program September 16-20 for all new UW international students (except Canadians) entering the U.S. for the first time. New international students are required to pay a $30 orientation fee.

Visas and Passports. Answers to questions in regard to passports, visas, extensions of stay, etc. are available from the ISO office.

Foundation for International Understanding through Students (FIUTS). International students who do not have a host or friendship family are encouraged to participate in the program. Applications are available from the FIUTS office.

Registration. International students are required to register full-time (graduate students -- 10 credits/qtr).

University of Washington Class and Holiday Schedule, 1999-2000

Autumn Quarter 1999	
Applic. closing date	Nov 1
Classes begin	Sept 27
Veterans' Day	Nov 11
Thanksgiving recess	Nov 25,26
Last day of instruction	Dec 8
Final examinations	Dec 9-16
Quarter break[1]	Dec 17-Jan 2
Winter Quarter 2000	
Classes begin	Jan 3
Martin Luther King, Jr. Day	Jan 17
Valle Applic. Deadline	Feb 1
Presidents' Day	Feb 21
Last day of instruction	Mar 10
Final examinations	Mar 13-17
Quarter break	Mar 18-26
Spring Quarter 2000	
Classes begin	Mar 27
Memorial Day	May 29
Last day of instruction	June 2
Final examinations	June 5-9
Commencement	June 10
Quarter break	June 10-18
Summer Quarter 2000	
Classes begin	June 19
Independence Day observed	July 4
Quarter ends	Aug 18
Quarter break	Aug 19-Sep 24
Autumn Quarter 2000	
Applic. closing date	Nov 1
Classes begin	Sept 25
Veterans' Day	Nov 11
Thanksgiving recess	Nov 25,26
Last day of instruction	Dec 8
Final examinations	Dec 7-14
Quarter break[1]	Dec 15-Jan 1

Nordic Consular Offices in Seattle

Consulate of Denmark
6204 E Mercer Way, Mercer Island
Tel: (206) 230-0888

Consulate of Finland
11045 SE 28th Place, Bellevue
Tel: (425) 451-3983

Consulate of Iceland
5610 20th NW, Seattle
Tel: (206) 783-4100

Consulate of Norway
Joseph Vance Building, Seattle
Tel: (206) 623-3957

Consulate of Sweden
1215-4th Ave., Suite 1019, Seattle
Tel: (206) 622-5640

Valle Trustees

Paul R. Cressman, Sr..
John Petrisor

Dean, College of Engineering

Denice Denton

Faculty Scholarship Review Committee

Katrina Deines, Robert Holtz, Folke Nyberg, Scott Rutherford, Gene Welch

University of Washington Web Sites

University of Washington:
http: / / www.washington.edu /

Dept of Civil & Environmental Engineering:
http: / www.ce.washington.edu /

College of Architecture and Urban Planning:
http: / / www.caup.washington.edu /

Valle Scholarship & Scandinavian Exchange Program:
http: / / www.engr.washington.edu / activities / valle /

VALLE PROGRAM PERSONNEL

Dale A. Carlson, PhD
Director & Professor

John F. Ferguson, PhD
Associate Director;
Professor, Civil Engineering

Joseph S. Greer
Valle Representative

Bobbie Nelson-Greer
Valle Representative

Address:
Office of the Director
Valle Scholarship and Scandinavian
Exchange Program
102 Wilson Lab
University of Washington
Box 352130
Seattle, Washington 98195-2130
USA

Tel: (206) 685-2312
Fax: (206) 543-2907
E-mail: valle@rio.engr.washington.edu
http: / / www.engr.washington.edu / activities / valle /

OFFICES IN SCANDINAVIA

Prof. Arild Eikum
Interconsult AS
Grenseveien 90
P.O. Box 6412 Etterstad
N-0605 Oslo, Norway
Tel: 47 22 29 57 20

Prof. Tommy Lindell
Centrum för bildanalys
Lägerhyddvägen 17
S-75237 Uppsala, Sweden
Tel: 46 18 18 34 64
Fax: 46 18 55 34 47

Prof. Sven Liedberg
Institutionen för geoteknik
Chalmers teknika högskola
S-412 96 Göteborg, Sweden
Tel: 46 31 772 21 12
Fax: 46 31 772 20 70

Prof. Jaakko Puhakka
Head, Institute of Water and
Environmental Engineering
Tampere University of Technology
P.O. Box 541
FIN - 33101 Tampere, Finland
Tel: 358 3 365 2966
Fax: 358 3 365 2896

Prof. Thomas Christensen
Institut for Miljøteknologi
Danmarks Tekniske Universitet
Bygning 115
DK-2800 Lyngby, Denmark
Tel: 45 45 25 16 00
Fax: 45 45 93 28 50

For further information, applications, or additional copies of this report, please contact this office by email , telephone, mail or fax, or refer to the web site for further information and application forms.

Office of the Director
Valle Scholarship and Scandinavian Exchange Program
University of Washington
Box 352130
Seattle, WA 98195-2130 USA
Email: valle@rio.engr.washington.edu
Tel: (206) 685-2312 Fax: (206) 543-2907
Valle web site: http: / / www.engr.washington.edu / activities / valle /

Information Requested _____

Your Name _____

Organization _____

Office Street Address _____

City, State _____

Zip Code _____

Country _____

Email address _____

Valle Scholarship & Scandinavian Exchange Program
Univerity of Washington
Box 352130
Seattle, WA 98195-2130 USA