



STEVENS
INSTITUTE OF TECHNOLOGY
1870

Assessment Helps Institutionalization: A Tale of a Heavy Evaluation User

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Professor of ECE
October 10, 2022
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My Background



More About Me



- **32 Years as a Professor of Electrical Engineering at the University of Washington**
 - UW ADVANCE Faculty Director for 20 years
 - UW STARS Faculty Director for 9 years
- **On IUPUI ADVANCE External Advisory Board**
- **Moved to Stevens 9/1/2022**



Photo: Ryan Hooper, UW ECE

A Brief Anecdote About When I First Got to UW

Positionality Statement

- I am a white Jewish hetero cis-gendered woman from a college-educated family in a very male-dominated discipline**
- I have experienced and witnessed a lot of gender bias**
- I have witnessed a lot of racism**
- I try to use my privilege to support people from non-dominant groups**

Two Reasons I Joined Stevens



I Learned to Use the Snipping Tool



Photo: WinCustomize

My Evaluation Partners – Center for Evaluation & Research for STEM Equity



Photos: CERSE and UWT
Chancellor website

cerse@uw.edu

Here are Some of My Collaborators



- Photos: UW and Cal Poly websites

Two Examples of Using Evaluation Data for PR and Sustainability

1) ADVANCE: to address low numbers of women faculty in STEM



2) STARS: to address low numbers of students from limited-income (LI) backgrounds in Engineering (Ohland)



Example 1: Women Faculty in STEM



1999 MIT Study of Women Faculty

President Charles M. Vest: “I commend this study of Women Faculty in Science to all of my faculty colleagues. Please read it, contemplate its messages and information, and act upon it personally and collectively.”



NSF ADVANCE Program

- **Women were 9% of Engineering faculty in 2001**
- **Previous NSF programs (e.g. POWRE) tried to “Fix the Women”**
- **ADVANCE Institutional Transformation aims to “Fix the System” (which helps men too)**



NSF ADVANCE Program

- **Over 100 US institutions have received ADVANCE grants**
- **\$270M awarded to date**
- **Change policies and practices**
 - **Faculty hiring**
 - **Family leave**
 - **Promotion (shoutout to IUPUI!)**



UW ADVANCE



- UW received ADVANCE grant in 2001 (\$3.75M)
- PI was Denice Denton
- She mentored me and offered me ADVANCE position

UW ADVANCE Provides Faculty Professional Development

Leadership Workshops

University leaders:
deans, department
chairs, directors

2001 – Present
Quarterly

Mentoring-for-Leadership Lunches

STEM women tenured
and tenure-track
faculty

2003 – Present
Monthly

Pre-Tenure Faculty Workshops

STEM co-ed
pre-tenure faculty

2004 – Present
Quarterly

Seattle Times Article on ADVANCE

Education | Local News

UW female professors building a culture for engineering

Originally published October 14, 2013 at 9:21 pm | Updated October 14, 2013 at 11:46 pm



By Katherine Long

Seattle Times staff reporter

Share story

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When Eve Riskin first began teaching electrical engineering at the University of Washington in 1990, her students were so surprised to find a young woman professor teaching in a male-dominated field that many asked her if she had a Ph.D.

Of course, Riskin did — in electrical engineering, from Stanford.

Twenty-three years later, female professors are slowly becoming more common in male-dominated engineering and science fields at the UW.

The university has been aided by a grant from the National Science

Some Irony

- **UW Engineering Marketing/Communications (MarCom) had ignored ADVANCE**
- **Article appeared “Above the Fold”**
- **Article appeared the first morning of our ABET six-year visit**
- **The Dean congratulated MarCom 😊**

How We Used Data to Get Article

- **We had met with Seattle Times reporter – she put us off a bit**
- **We had high percentage of women faculty in the Engineering but didn't explain this well**
- **We needed to present data differently**

ASEE – Highest NUMBER of Women Faculty

4.9 Top 20 Institutions with Highest Number of Female Tenured/Tenure-Track Faculty

Table 87: Top 20 Institutions with Highest Number of Female Tenured/Tenure-Track Faculty

No	Institutions	Number of Faculty
1	Georgia Institute of Technology	115
2	University of Illinois at Urbana-Champaign	94
3	University of Michigan	90
4	Massachusetts Institute of Technology	79
4	Purdue University	79
6	University of Florida	77
7	Carnegie Mellon University	76
7	The Pennsylvania State University	76
#9	University of Washington in Seattle	75
10	Virginia Polytechnic Institute and State University	73
11	Arizona State University	72
12	Texas A&M University	71
13	North Carolina State University	69
14	Cornell University	65
14	The University of Texas at Austin	65
16	The Ohio State University	63
17	University of California, Irvine	60
18	Stanford University	59
18	University of California, Berkeley	59
20	Oregon State University	53

* 310 Institutions included

ASEE – SIZE of Engineering College

4.3 Top 50 Institutions by Number of Tenured/Tenure-Track Faculty

Table 81: Top 50 Institutions by Number of Tenured/Tenure-Track Faculty

No	Institutions	Number of Faculty
1	Georgia Institute of Technology	583
2	University of Illinois at Urbana-Champaign	474
3	Texas A&M University	448
4	University of Michigan	429
5	The Pennsylvania State University	400
6	Purdue University	394
7	Massachusetts Institute of Technology	393
8	Virginia Polytechnic Institute and State University	389
9	North Carolina State University	377
10	Arizona State University	326
11	The University of Texas at Austin	317
12	Florida Atlantic University	316
12	University of Florida	316
14	Carnegie Mellon University	301
15	Rensselaer Polytechnic Institute	295
16	The Ohio State University	294
17	Stanford University	286

No	Institutions	Number of Faculty
18	University of Washington in Seattle	283
19	Cornell University	275
20	University of Wisconsin-Madison	264

#18



ASEE – Highest PERCENTAGE of Women Faculty

4.8 Top 50 Institutions with Highest Percentage of Female Tenured/Tenure Track Faculty

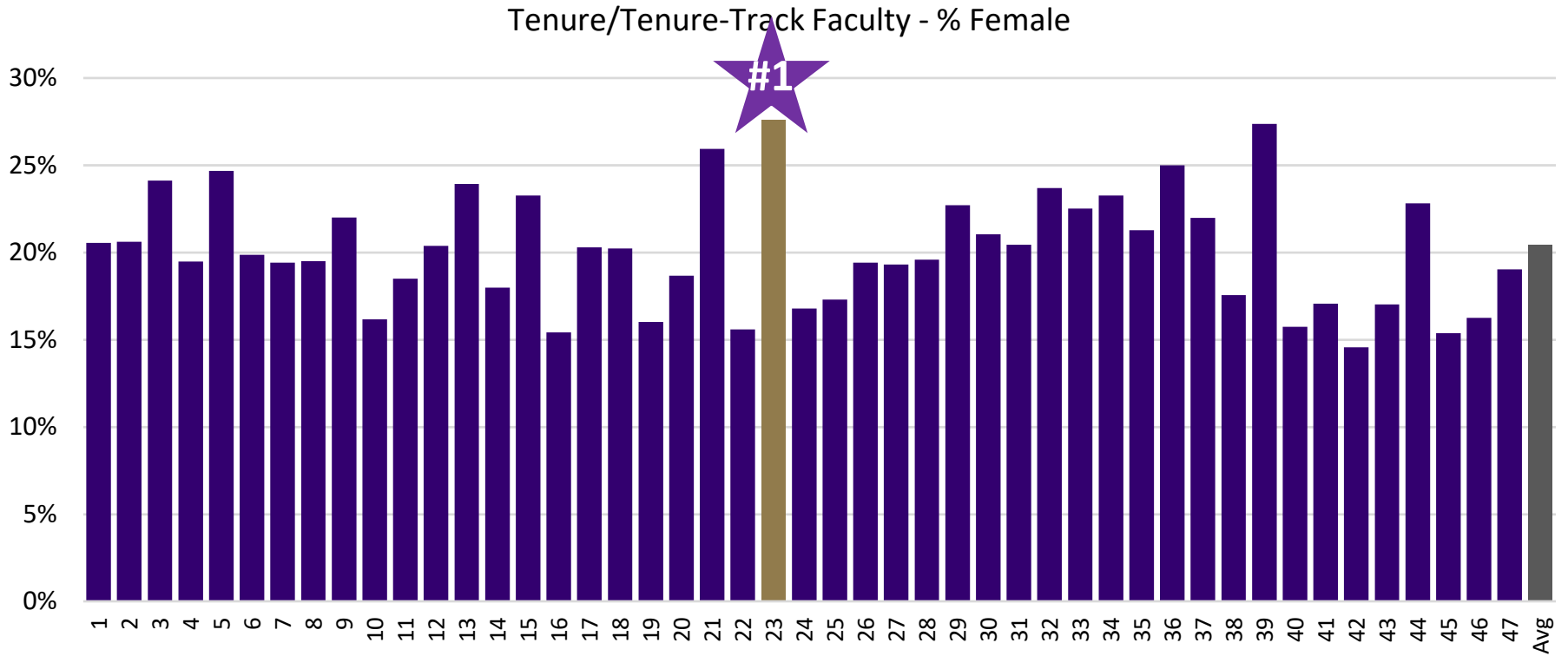
Table 86: Top 50 Institutions with Highest Percentage of Female Tenured Tenure Track Faculty

No	Institutions	Percent Women
1	Smith College	70%
2	Sweet Briar College	66.7%
3	Humboldt State University	62.5%
4	Cameron University	60%
4	Campbell University	60%
4	Saint Ambrose University	60%
7	Olin College of Engineering	47.6%
8	Seattle University	42.9%
9	University of Bridgeport	38.9%
10	U.S. Coast Guard Academy	35.3%
11	University of Portland	35%
12	Middle Tennessee State University	33.3%
12	Santa Clara University	33.3%
12	Swarthmore College	33.3%
12	University of San Diego	33.3%
16	San Jose State University	32.6%
17	Lafayette College	32.6%
18	Mercer University	32.4%
19	California State University, Long Beach	31.6%
20	University of St. Thomas	31.4%
21	California Baptist University	31%
22	Loyola Marymount University	30%
22	Union College	30%
24	Roger Williams University	29.4%
25	University of Massachusetts Lowell	29.3%
26	Texas Christian University	28.6%
27	University of Wisconsin, Platteville	28.3%
28	University of California, Merced	28.3%
29	University of Hartford	28%
30	University of New Haven	27.8%
31	Wentworth Institute of Technology	27.5%
32	Fairfield University	27.3%
33	University of Puerto Rico, Mayaguez Campus	27%
34	Gannon University	26.9%
34	Trine University	26.9%
36	Gonzaga University	26.7%
36	New York Institute of Technology	26.7%
38	University of Washington in Seattle	26.5%
39	Rowan University	26.5%

#38



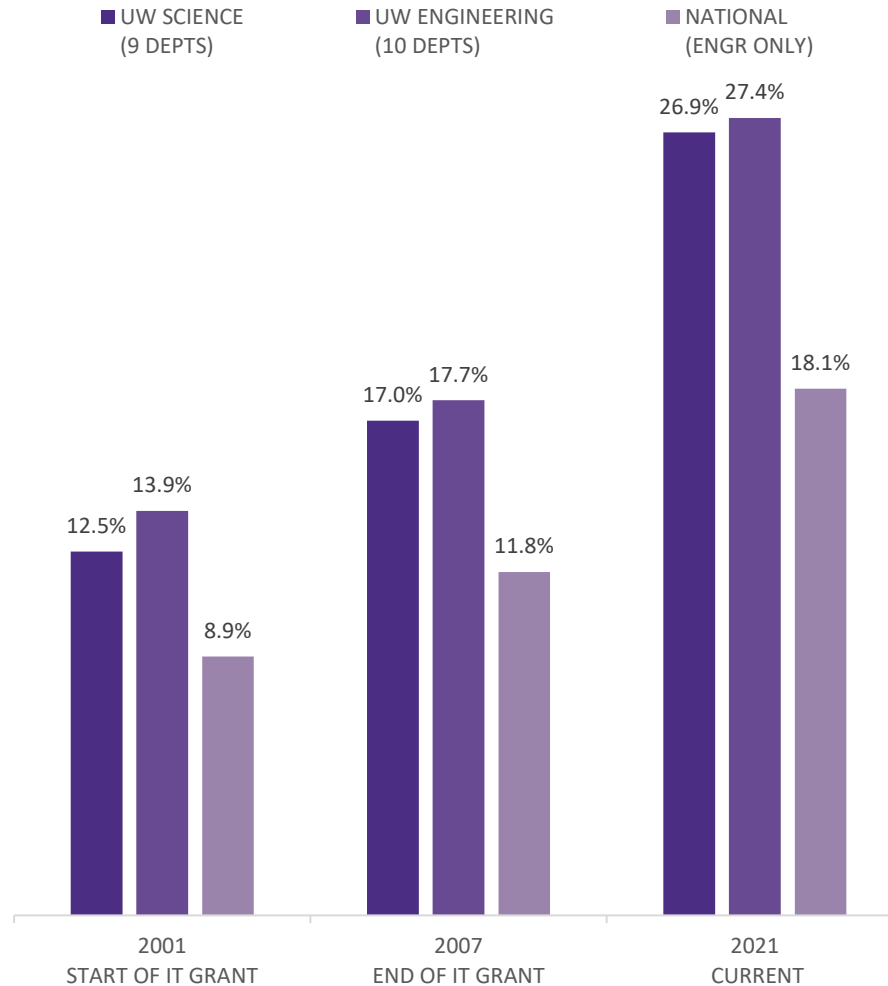
We Made a Graph!



US News and World Report Ranking, Colleges of Engineering

UW ADVANCE Campus Impact

PERCENTAGE WOMEN FACULTY



We Got Permanent Funding from then-Provost, Now UW President, Ana Mari Cauce



Photo: AMC's Facebook page

UW ADVANCE Women Department Chair 2001



UW ADVANCE Women Department Chairs 2021



UW ADVANCE Women Department Chairs 2022



Congrats, you have an all male panel!



Valmentajakahvien vierailijalista:

Vol. 1 – Sami Kalaja

Vol. 2 – Matti Alpolo

Vol. 3 – Marko Malvela

Vol. 4 – Ben Waller

Vol. 5 – Henrik Dettmann

Vol. 6 – Erik Piispa

Vol. 7 – Jukka Jalonen

Vol. 8 – Seppo

Vol. 9 – Juri H

Vol. 10 – Tap

Vol. 11 – Tom

Vol. 12 – Pekka

Vol. 13 – Patrik Borg

Vol. 14 – Jukka Viitasalo

Vol. 15 – Tommi Paavola

Vol. 16 – Pekka Potinkara

Vol. 17 – Lauri Tarasti



Documenting all male panels, seminars, events, and various other things featuring all male experts.

Please submit! Preferably photos and screenshots. Or links. Make sure it is an all male thing, if not, please explain how it still may count as one. All male references in academic work are also welcome, please submit full bibliographic on those.

Add a Hoffsome stamp to your photo before submission at: <http://www.hautomohattu.fi/hoffsomator/>

🗨 ASK ME ANYTHING

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📡 RSS

🗄 ARCHIVE

Please do not post any advertisements on this board without prior EE approval. Otherwise, it will be removed. Thank you.

Electrical Engineering Department

360-534-5270

Research Colloquium Series Spring 2015

Tuesdays, 10:30-11:30am
Electrical Engineering Building, 105



April 7
Vivek De
Intel
Energy Efficient Computing
in Nanoscale CMOS: Chal-
lenges and Opportunities



April 14
Bhaskar Rao
UC San Diego
Hierarchical Bayesian
Methods for Sparse
Signal Recovery



April 21
Patrick Chiang
Oregon State University
I Forgot to Charge My
AppleWatch!



April 28
Ricardo Queiroz
Universidade de Brasilia
Free-Viewpoint Visualiza-
tion for Images and Video



May 5
Jon Schuller
UC Santa Barbara
Semiconductor and
Molecular Optical Antennas



May 12
Mohamed El-Sharkawi
University of Washington
Outlook into Modern
Engineering Education



May 19
Baosen Zhang
University of Washington
Opportunities in Power
Systems: Optimization,
Electronics and Customers



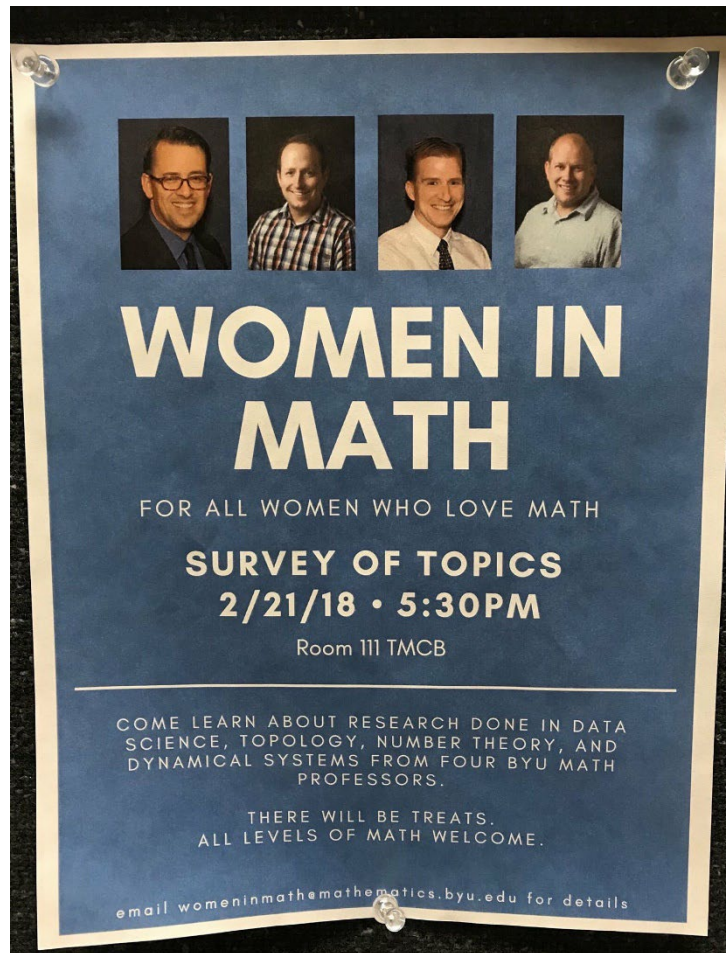
May 26
David Miller
Penn State University
Persimonious Topic
Models with Salient Word
and Topic Discovery



June 2
Eric Yeatman
Imperial College, London
Energy Harvesting from
Motion for Autonomous
Devices

ELECTRICAL ENGINEERING
UNIVERSITY of WASHINGTON

What Else Not to Do



- Photo: BYU website

Example 2: Students from LI Backgrounds in Engineering



Low Numbers of Students from LI Backgrounds in Engineering

- UW Engineering had post-general education admissions model
- By 2017 only 50% of all applicants got an Engineering slot
- Admissions filtered out students from LI and minoritized backgrounds



How did 2011 UW pre-engineers fare in getting admitted to Engineering?

	URM	Non-URM	Pell-Eligible	Non-Pell
Fr Entry PRENGR 2011	11.3%	74.3%	20.7%	64.9%
Fr Entry Dept JR/SR 2013	5.9%	75.3%	12.2%	69.0%

Washington State Academic RedShirt Program (STARS)

- Modeled after CU-Boulder GoldShirt “Redshirt” year of support
- For UW Engineering/CS students from LI backgrounds
- Focus on public high schools in WA with >30% FRL
- Sonya says “This work is one student at a time”



WASHINGTON
STARS
IN ENGINEERING

UW STARS



STARS Data

STARS
SCHOLARS
298
COHORTS I-IX



DEMOGRAPHICS

43%

Women

83%

Pell-eligible
students

47%

Underrepresented
minority students

69%

First-generation
students

Even Better STARS Data!

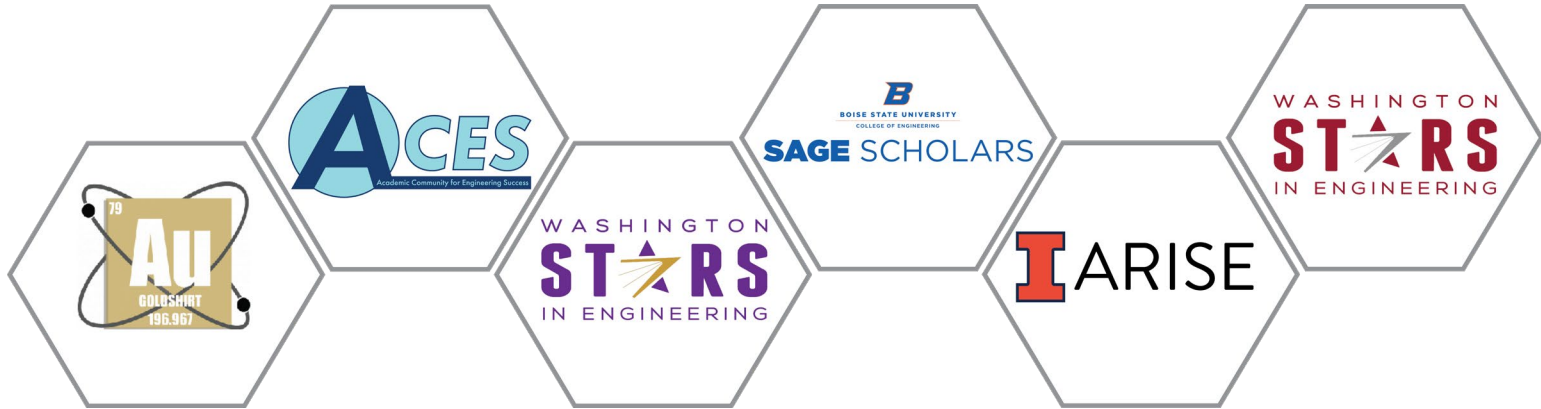
COURSE	MEAN STARS GRADE	MEAN DTC GRADE
Calculus I	3.49	3.19
Calculus II	3.26	3.21
Calculus III	3.06	3.18
General Chemistry I	3.23	3.23
General Chemistry II	3.30	3.22
Physics I	3.46	3.10
CSE I	3.56	3.19
CSE II	3.62	3.28

UW Has 83% 6-Year Graduation Rate

ENGINEERING/COMPUTER SCIENCE, STEM, AND UW RETENTION

COHORT	YEAR	N	ENGR/CS	STEM	UW
I	2013	29	59%	66%	90%
II	2014	32	75%	81%	97%
III	2015	29	69%	76%	83%
IV	2016	28	86%	86%	93%
V	2017	51	78%	88%	96%
VI	2018	40	73%	80%	95%
VII	2019	30	97%	97%	97%
VIII	2020	30	100%	100%	100%
I—VIII	2013-2020	269	79%	84%	94%

Redshirt in Engineering Consortium



Survey Shows Redshirt Students:

- Are more attached to engineering or CS
- Are more confident in their math and science abilities, and in time management, networking, and interviewing skills
- Are more familiar with campus resources
- Are more comfortable asking for help
- Are buffered from usual decline in self-confidence of engineering 1st-year students

Seattle Times Article on STARS

UW's STARS helps low-income students shine

Originally published April 22, 2015 at 4:25 pm

Good students from low-income backgrounds soar to meet high expectations at UW.

By [Jerry Large](#)

Seattle Times staff columnist

Share story



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Email



Tweet

Usually when I think about helping kids succeed, I have in mind young children in the most dire circumstances, the ones who might not make it through school or might wind up in jail. But sometimes even being an A student isn't enough for a young person to reach her potential.

Ewurama Karikari and Trinh Ha were both top students in high school. Mount Tahoma in Tacoma for Ha and Bethel High School in Spanaway for Karikari. The freshmen made the winter-quarter dean's list at the University of Washington, but might not have even attended the UW if not for a little help. Being there is good for their futures, and good for the UW, too.

More Irony

- **The Dean again congratulated COE MarCom for the article**
- **The Dean also congratulated the ADVANCE Director**

Provost's Walking Tour in 2019

- **Mark Richards joined UW as Provost in 2018**
- **He is strong DEI proponent**
- **He visited Colleges in 2019 including STARS**
- **He LOVED the STARS students!**



Photo: UW Provost website

Provost Got \$500K/year for STARS



How Else Evaluators Help



Photo: UW CERSE staff, Spring 2022

- They help you improve your programs
- They provide data for annual/final reports
- They can write papers with you
- They provide sound bites
- They're great sounding boards

My Advice

1

**Use data to
show impact**

2

**Let students
talk to funders**

3

**Take lots of
pictures but
avoid photo-
ops**

More Advice

4

Have a 2-page data sheet that you update annually

5

Be your own PR agent:
Don't give up

6

Remember that optics matter

Thank you!