

Get LIT with US: Solar Panels on Campus

A large array of solar panels is shown in a field under a bright sun with a lens flare effect. The panels are arranged in rows and are tilted towards the sun. The background is a clear blue sky with some white clouds. The sun is positioned on the left side of the image, creating a strong glare and lens flare effect across the panels.

<http://store.sundancesolar.com/how-much-energy-can-a-solar-panel-produce-in-a-day-1/>

**Kristin Ottenbreit, Jenna Rae Fusick, Chelsea Baraniecki,
Courtney Trudeau, Allison Carr**

SUSTAINABILITY SYMPOSIUM

U of S students get behind solar solution

SCOTT LARSON
THE STARPHOENIX

Finding ways for the University of Saskatchewan to be a greener, more environmentally friendly campus was the goal for a group of students enrolled in an upper year environmental science class.

They came up with a number of innovative ways to get the job done and presented their proposals Thursday when the university's Office of Sustainability hosted the Sustainability Living Lab Project Symposium. The symposium showcased student projects that have been completed this year to help develop sustainability initiatives around the university.

Projects presented at the symposium included green rooftops on campus, a farmer's market, encouraging the use of recycled paper and a manure utilization system for the dairy research facility.

The trio of Alana Closs, Chelsea Hebert and Dakota Borys decided to tackle solar energy with their project entitled Brighten Us Up.

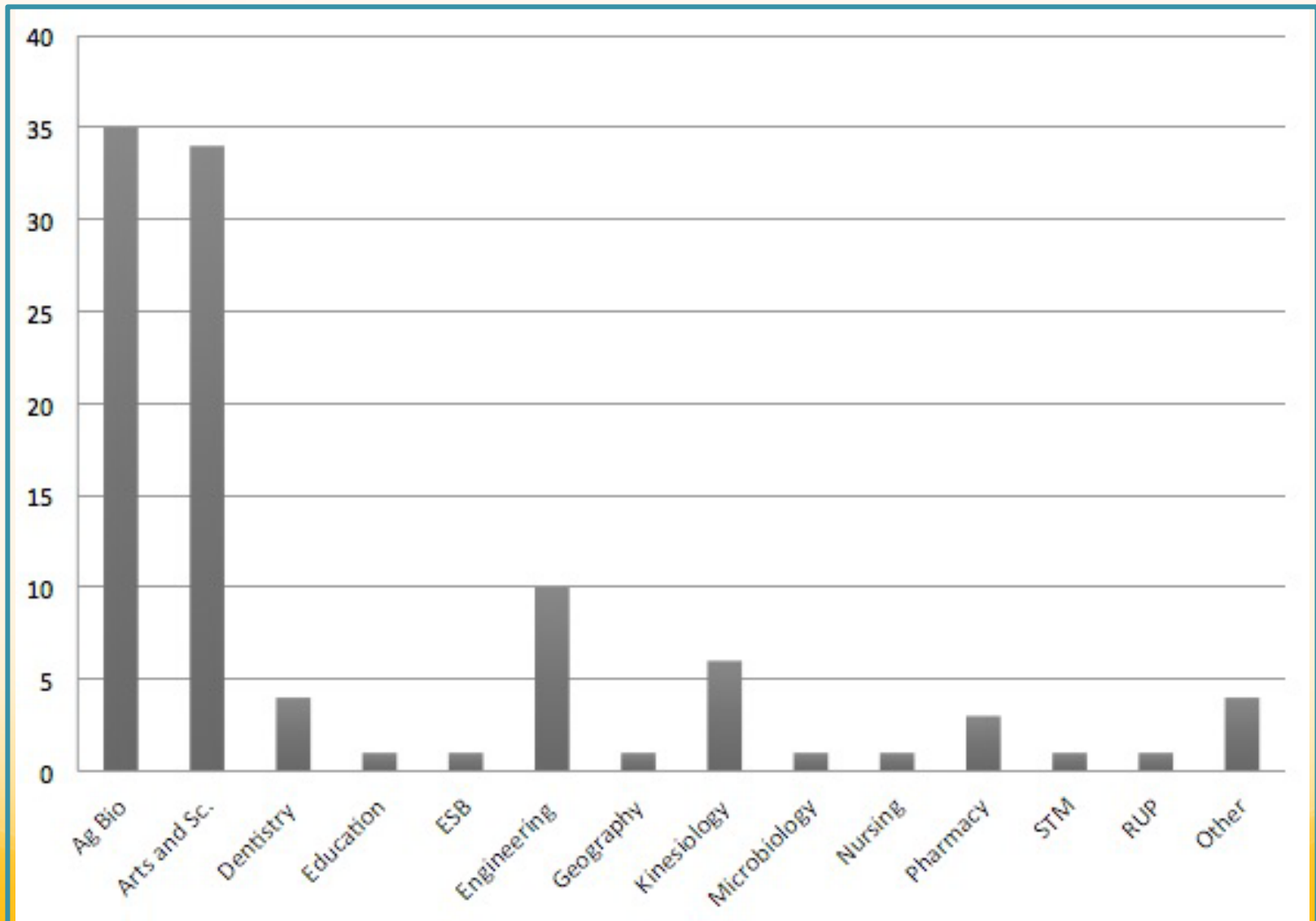
They suggested three solar options the U of S could undertake to become not just more environmentally friendly but also take a lead



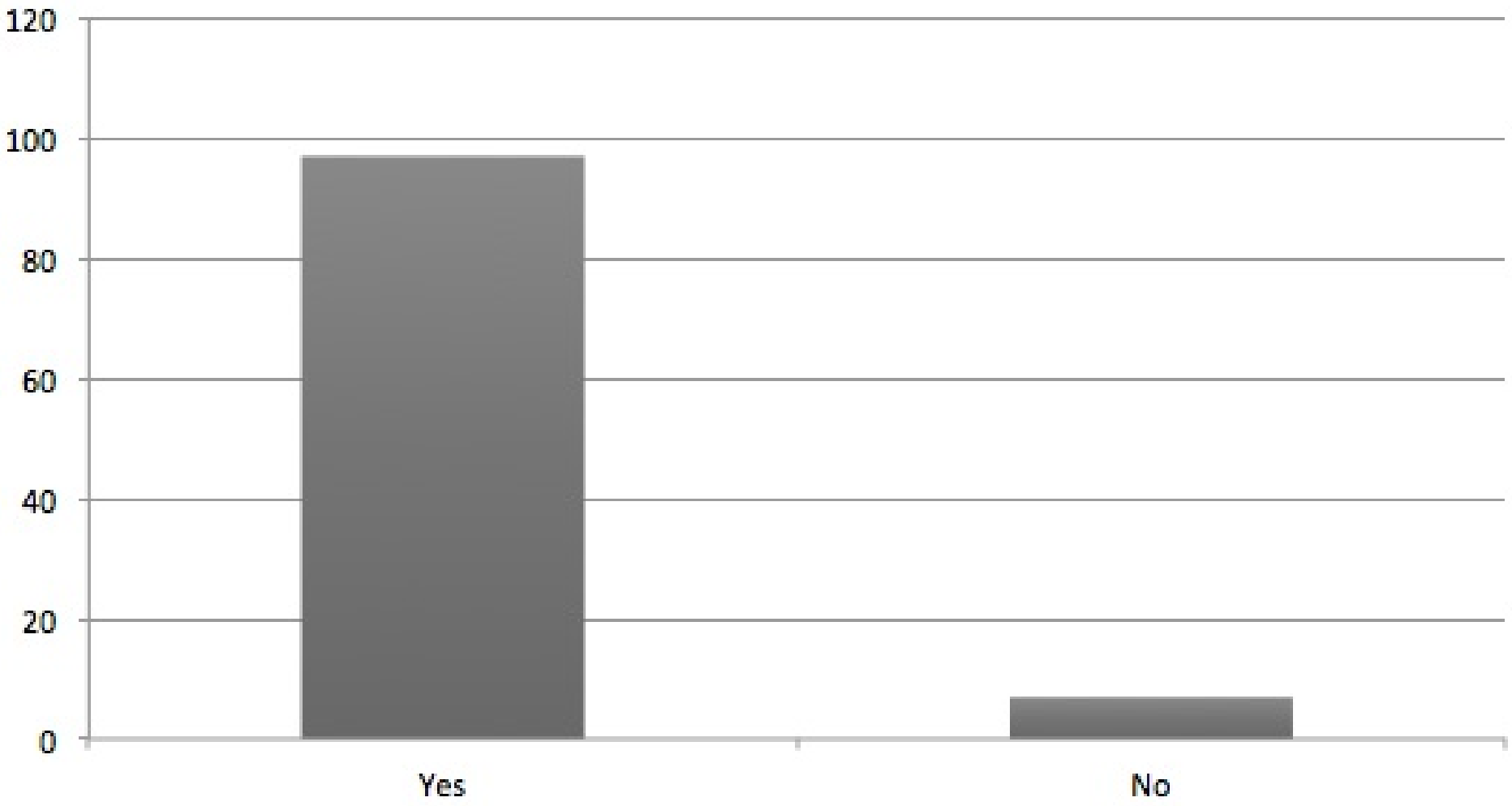
Chelsea Hebert, Dakota Borys and Alana Closs presented solar options for the University of Saskatchewan as part of a sustainability symposium on campus Thursday.

SCOTT LARSON/The StarPhoenix

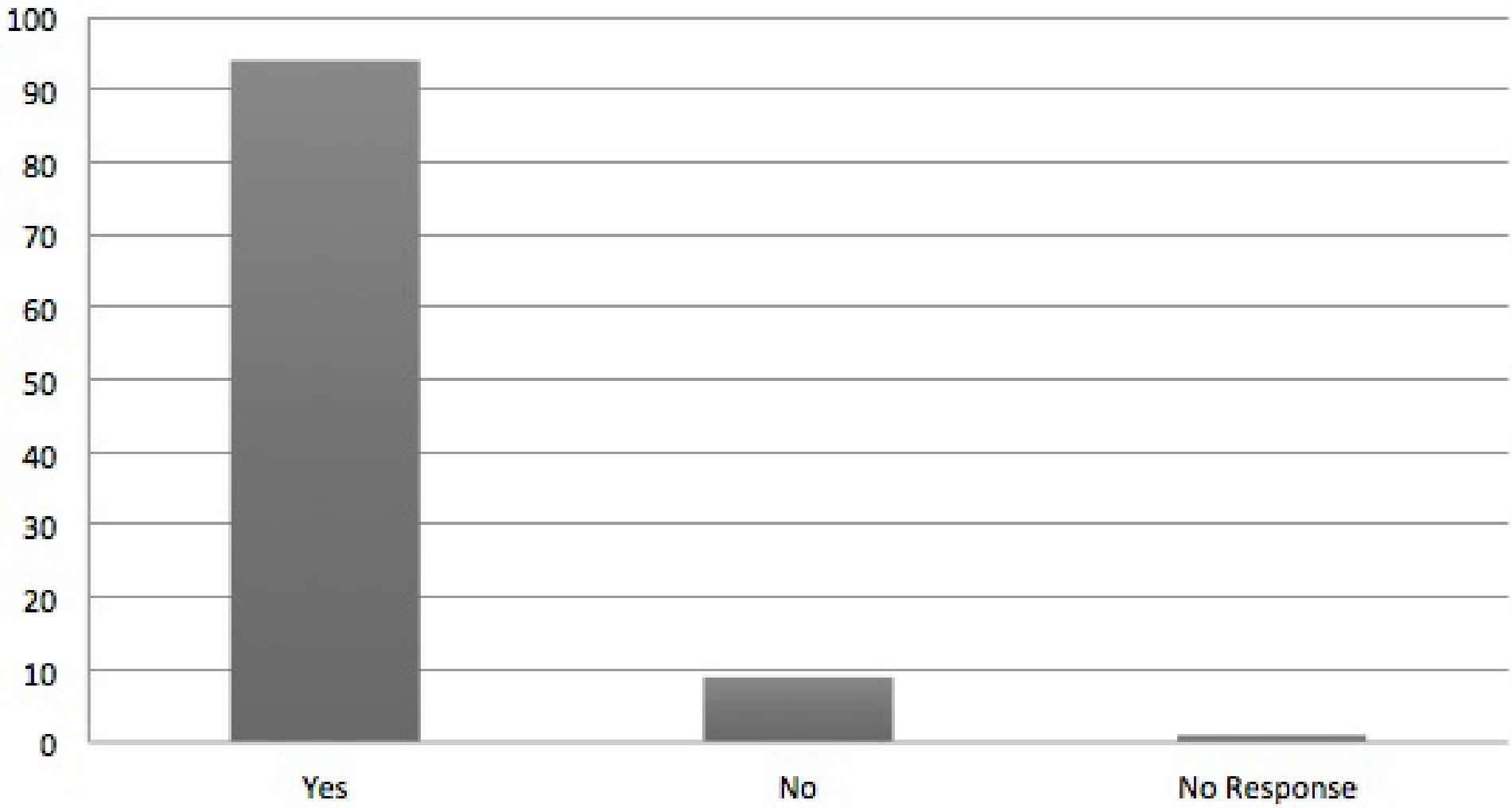
Survey Demographics



Should the U of S Invest More in Renewable Energy?



Should the U of S Install More Solar Panels?



Economic Barriers

| Current Kirk Hall electricity usage | | | |
|-------------------------------------|------------|--------------|--------------|
| 2015 | kWh | Residential | University |
| January | 17,710.00 | \$ 2,302.30 | \$ 929.78 |
| February | 17,744.00 | \$ 2,306.72 | \$ 931.56 |
| March | 19,601.00 | \$ 2,548.13 | \$ 1,029.05 |
| April | 15,486.00 | \$ 2,013.18 | \$ 813.02 |
| May | 21,257.00 | \$ 2,763.41 | \$ 1,115.99 |
| June | 21,687.00 | \$ 2,819.31 | \$ 1,138.57 |
| July | 22,798.00 | \$ 2,963.74 | \$ 1,196.90 |
| August | 16,690.00 | \$ 2,169.70 | \$ 876.23 |
| September | 24,301.00 | \$ 3,159.13 | \$ 1,275.80 |
| October | 18,864.00 | \$ 2,452.32 | \$ 990.36 |
| November | 17,768.00 | \$ 2,309.84 | \$ 932.82 |
| December | 22,729.00 | \$ 2,954.77 | \$ 1,193.27 |
| Yearly Average | 19,719.58 | \$ 2,563.55 | \$ 1,035.28 |
| Average from May-Aug | 20,608.00 | \$ 2,679.04 | \$ 1,081.92 |
| Average from Oct-Apr | 19,275.38 | \$ 2,505.80 | \$ 1,011.96 |
| Annual Total | 236,635.00 | \$ 30,762.55 | \$ 12,423.34 |

| Solar as a % of total building usage | |
|--------------------------------------|-----|
| January | 15% |
| February | 18% |
| March | 20% |
| April | 27% |
| May | 22% |
| June | 21% |
| July | 21% |
| August | 26% |
| September | 15% |
| October | 18% |
| November | 13% |
| December | 10% |
| Annual Average | 18% |

95 panels (310W/panel) predictions using Aurora Solar

| Month | Energy Production [kWh] | Residential | University |
|---------------------|-------------------------|--------------------|--------------------|
| January | 2,579.62 | \$ 335.35 | \$ 135.43 |
| February | 3,170.58 | \$ 412.18 | \$ 166.46 |
| March | 3,959.34 | \$ 514.71 | \$ 207.87 |
| April | 4,225.53 | \$ 549.32 | \$ 221.84 |
| May | 4,614.59 | \$ 599.90 | \$ 242.27 |
| June | 4,455.21 | \$ 579.18 | \$ 233.90 |
| July | 4,898.70 | \$ 636.83 | \$ 257.18 |
| August | 4,297.51 | \$ 558.68 | \$ 225.62 |
| September | 3,673.89 | \$ 477.61 | \$ 192.88 |
| October | 3,339.27 | \$ 434.11 | \$ 175.31 |
| November | 2,251.04 | \$ 292.64 | \$ 118.18 |
| December | 2,202.10 | \$ 286.27 | \$ 115.61 |
| Annual Total | 43,667.38 | \$ 5,676.76 | \$ 2,292.54 |

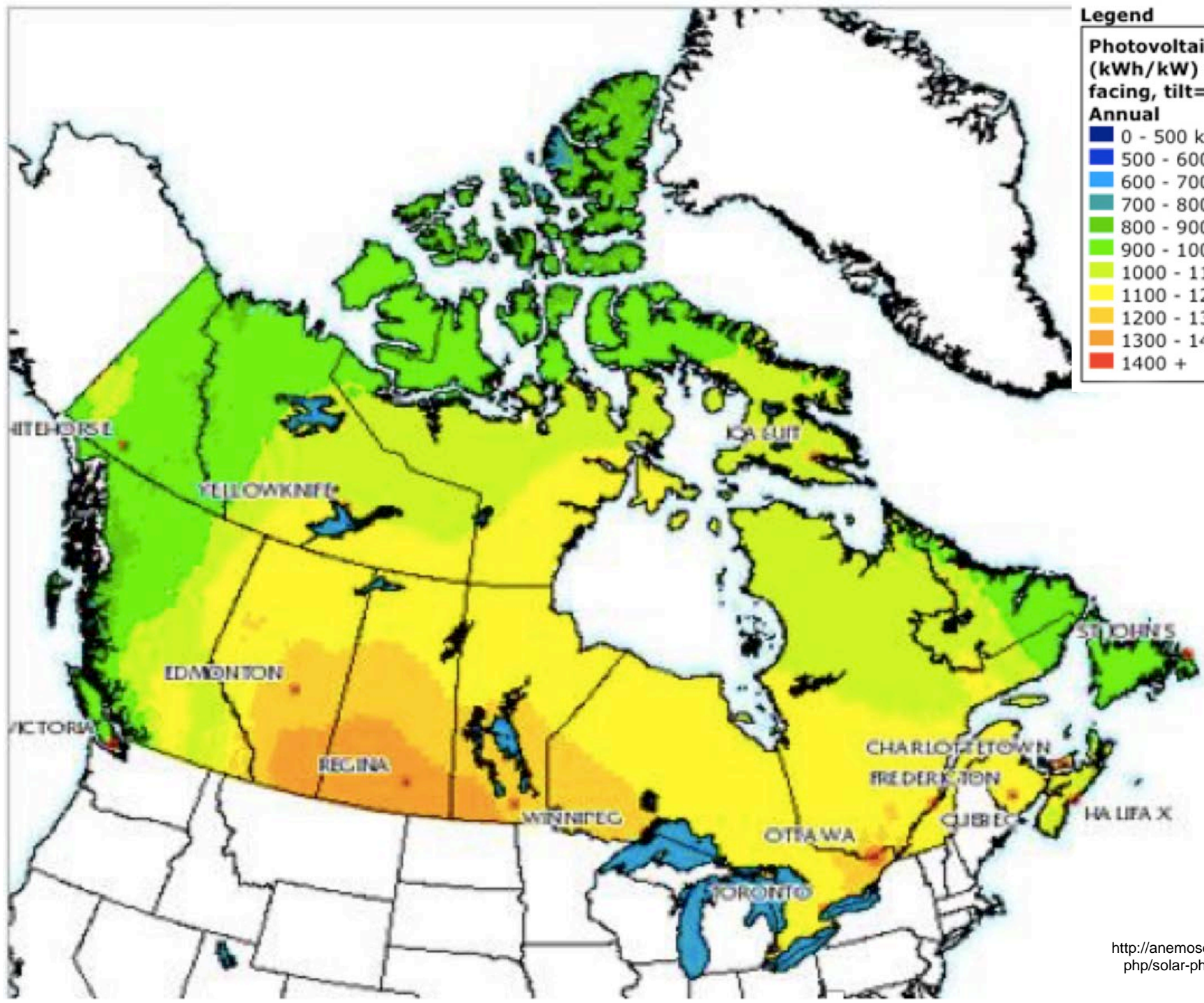
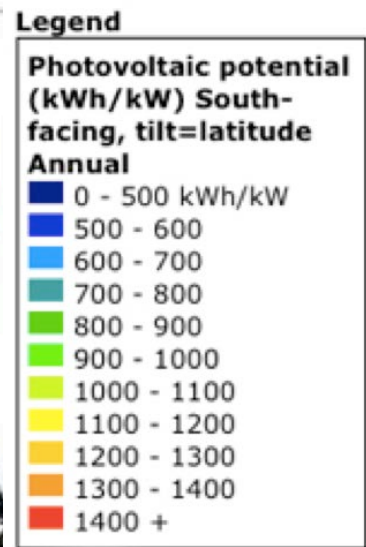




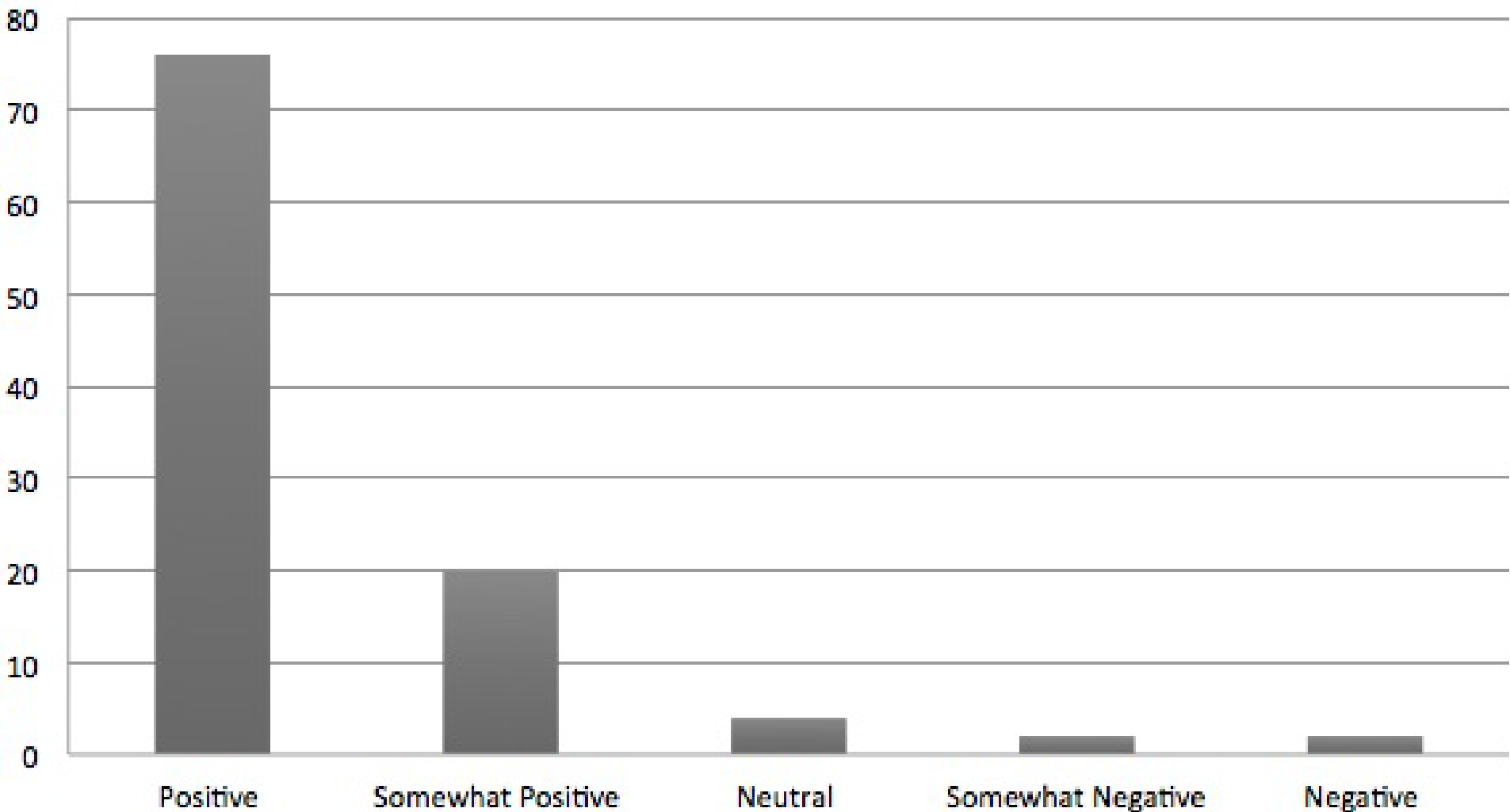
Campus Sustainability Revolving Fund

- Budget of 2 million total
- Financing sustainability initiatives at the University of Saskatchewan
- Applied and still waiting for approval





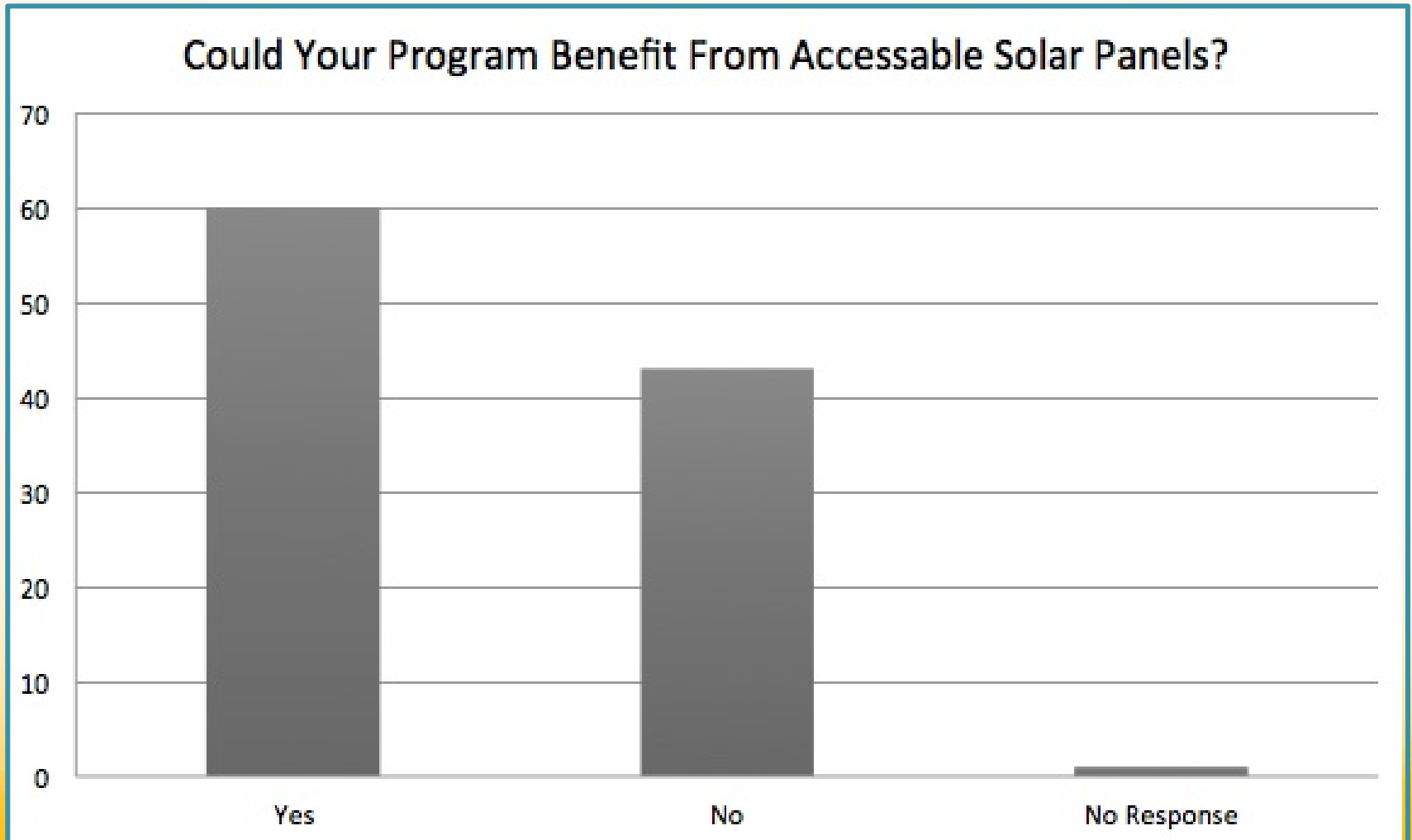
What is Your Current Perception of Solar Panels?



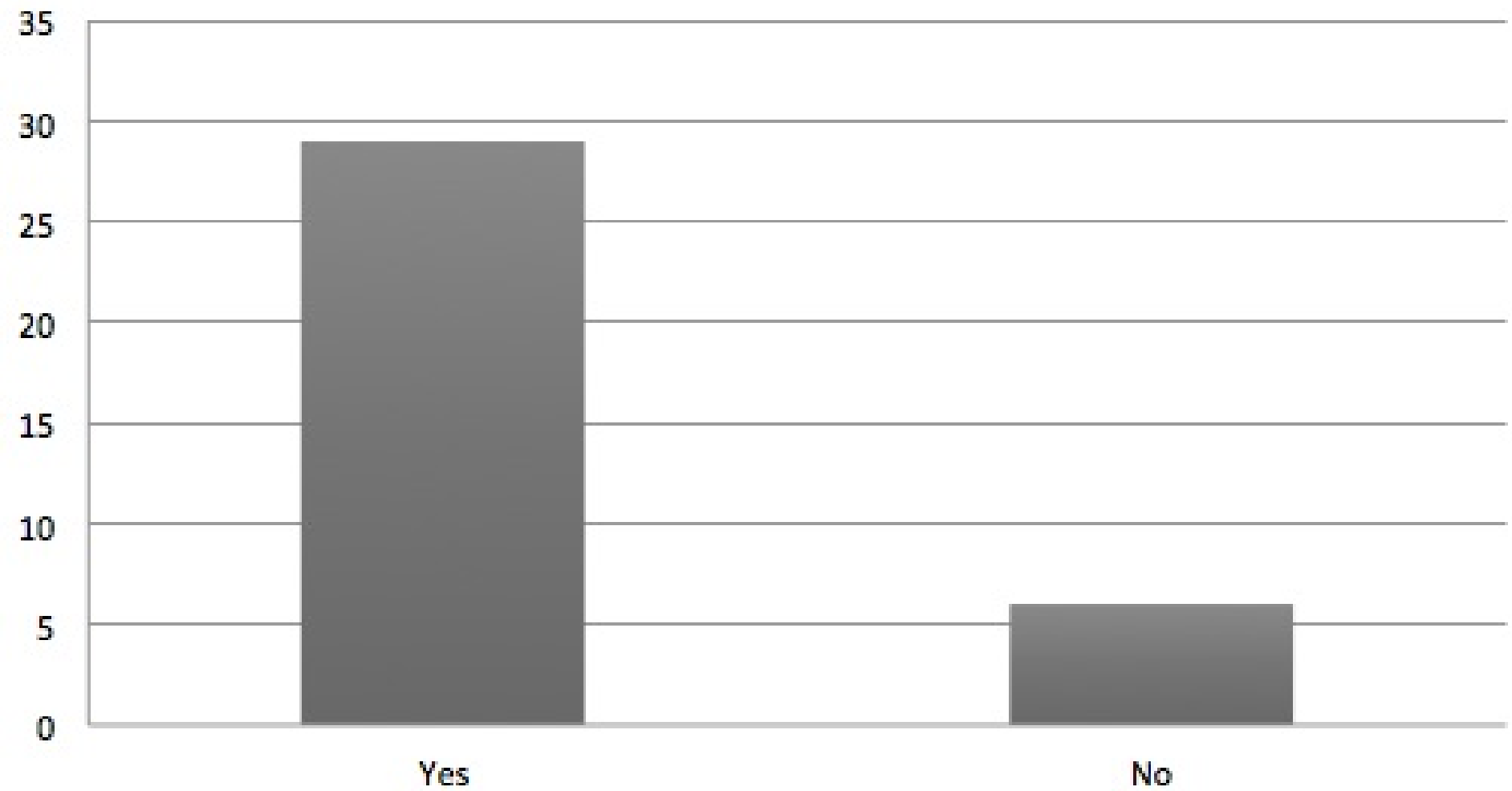
Why Kirk?



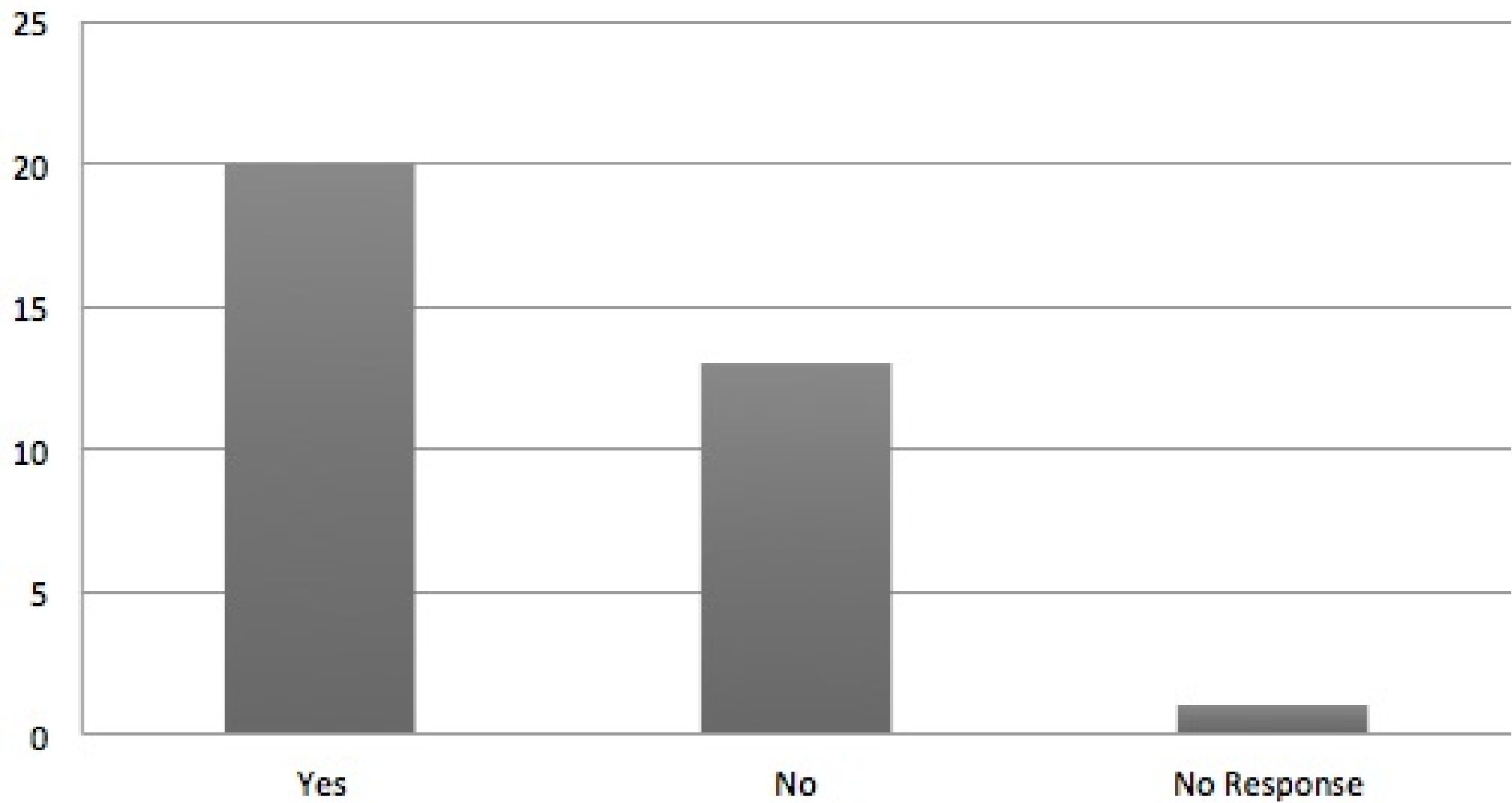
Accessibility



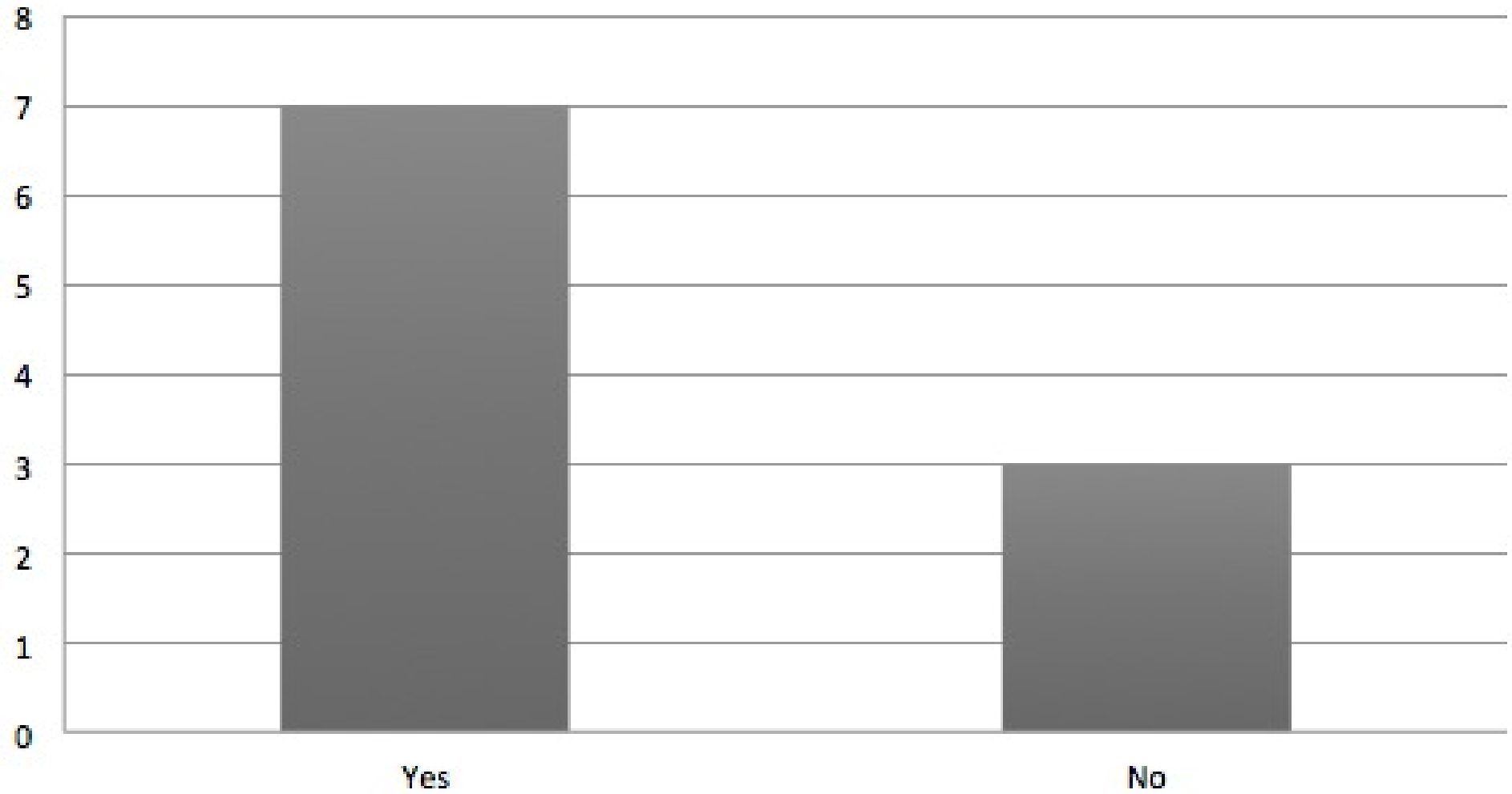
Agriculture and Bioresource



Arts and Science



Engineering

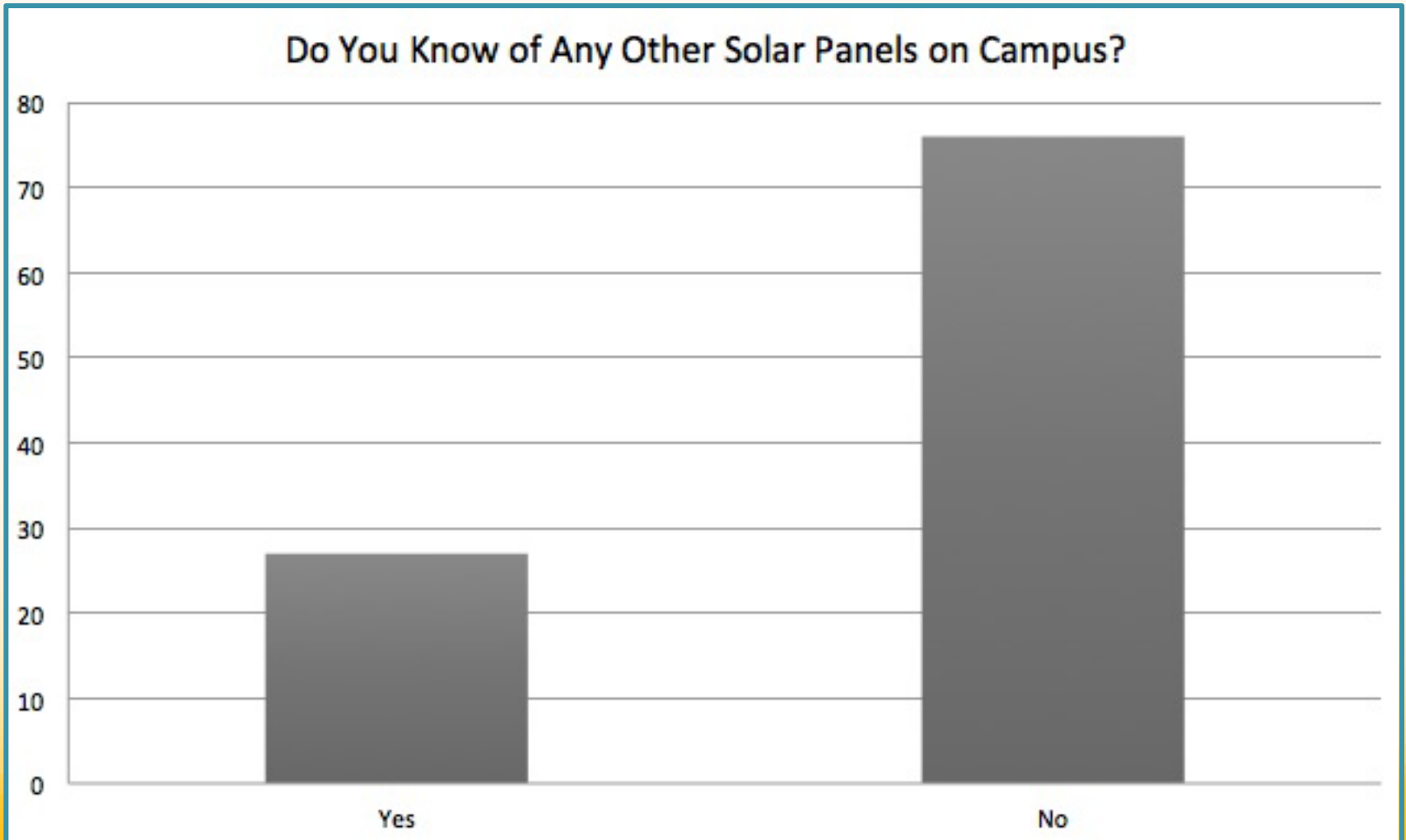


Participants Comments

“Many of the classes I have taken have discussed how solar works and what it looks like, but it would be nice to have a real life example that we can see and touch”

“Interactive learning such as first year labs. And using data from them to see how well the panels are working in our localized area to see the benefits and drawbacks of solar panels in Saskatchewan”

Visibility



Solar Panels at Horticulture







Endorsements

Sincerely,



Brian Daku
Professor and Head
Electrical and Computer Engineering

BLD/sp

Brian Daku

Toddi Steelman



UNIVERSITY OF
SASKATCHEWAN

School of
Environment and
Sustainability

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Executive Director
Room 329, Kirk Hall
117 Science Place
Saskatoon, SK S7N 5C8

MEMORANDUM

Telephone: (306) 966-1499
Facsimile: (306) 966-2298
E-mail: toddi.steelman@usask.ca

To: Allison Carr, Jenna Rae Fusick, Kristin Ottenbreit, Courtney Trudeau, and Chelsea Baraniecki

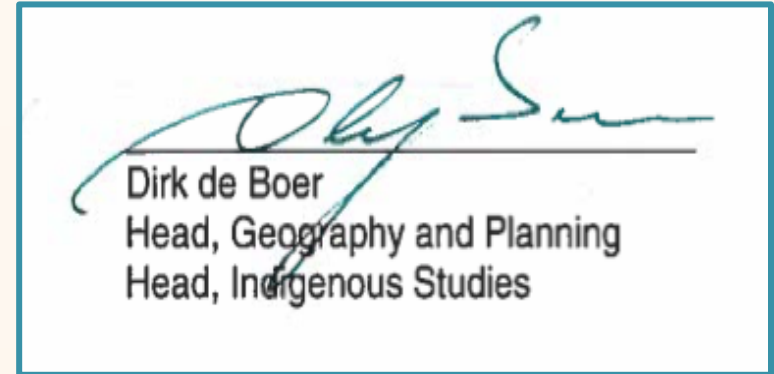
Cc: Colin Laroque

Date: March 14, 2016

Re: Endorsement of ENVS 401 Project Regarding Installation of Solar Panels on Kirk Hall

Endorsements

Dirk de Boer

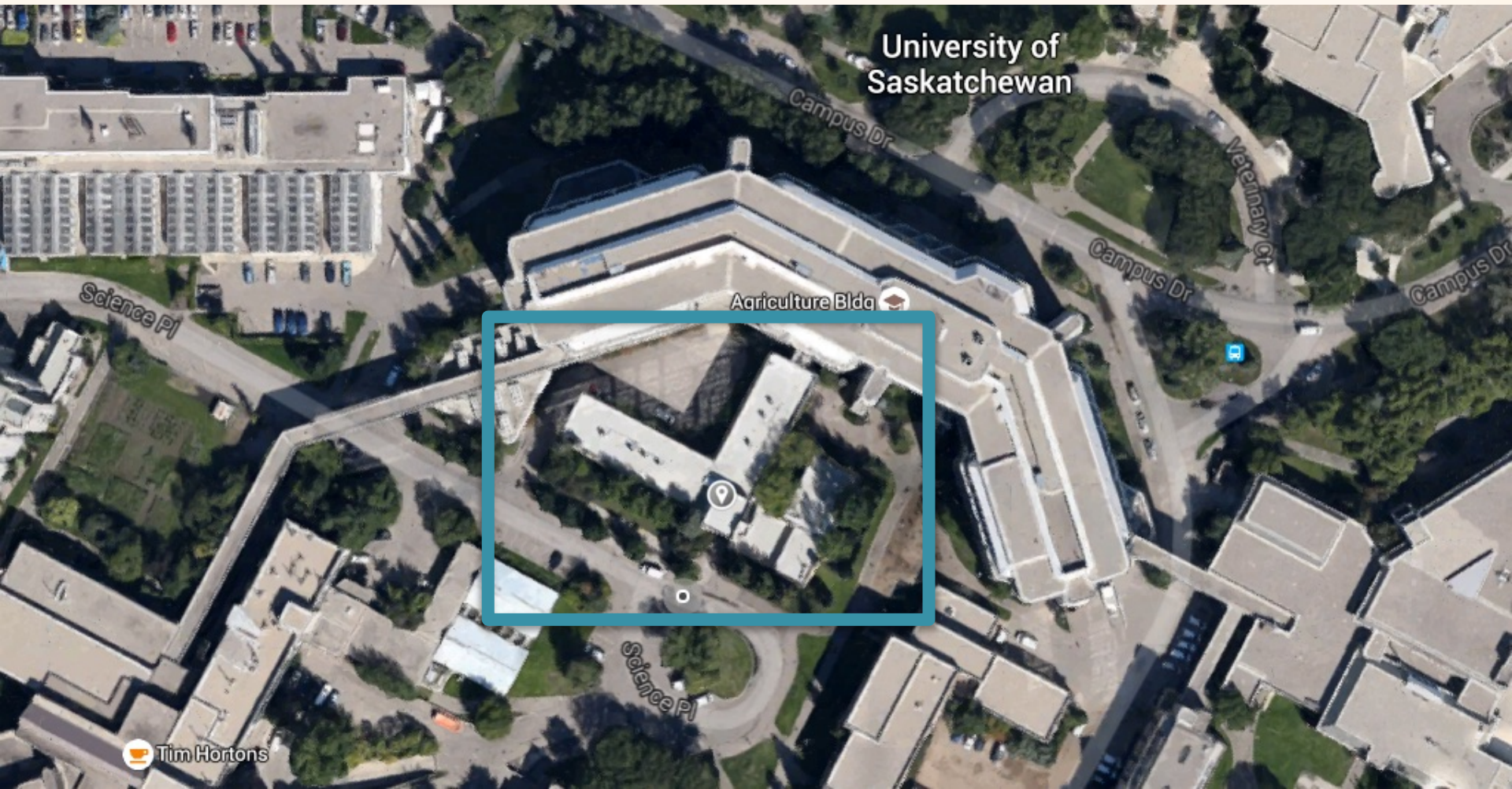


Please keep me up to date on your project, and let me know if other opportunities for the department of Geography, its' faculty or its' students to show support exists. We look forward to attending your presentation once your proposal is completed. Should any questions arise from other parties regarding our endorsement of your project, they should feel free to contact us.



R. H. Johnson

Rodney Johnson



University of Saskatchewan

Agriculture Bldg

Science Pl

Campus Dr

Veteranay Ct

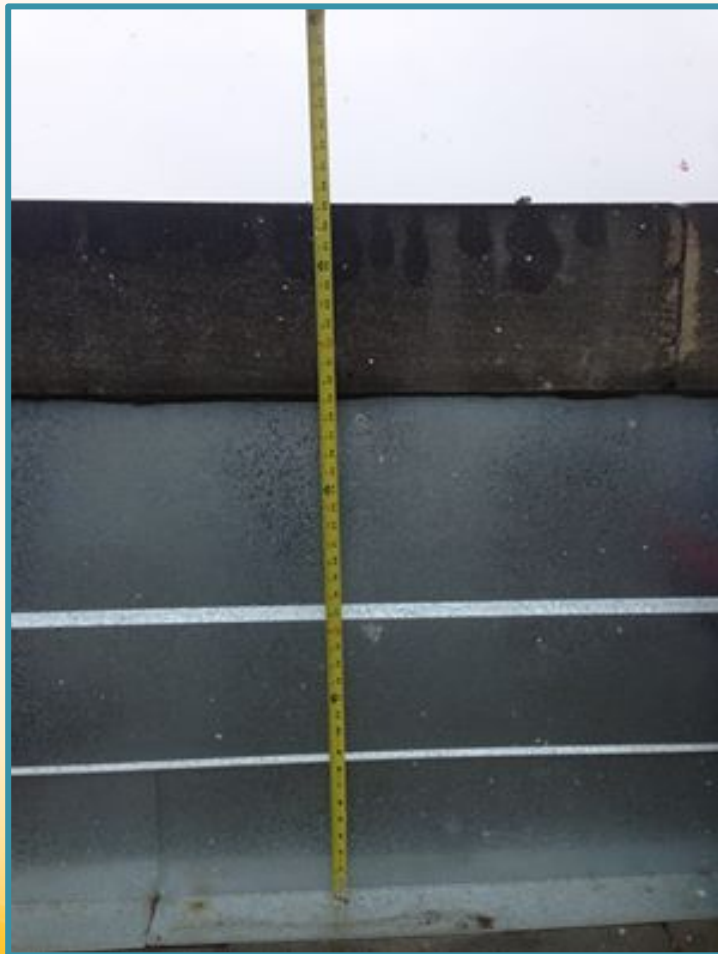
Campus Dr

Science Pl

Tim Hortons



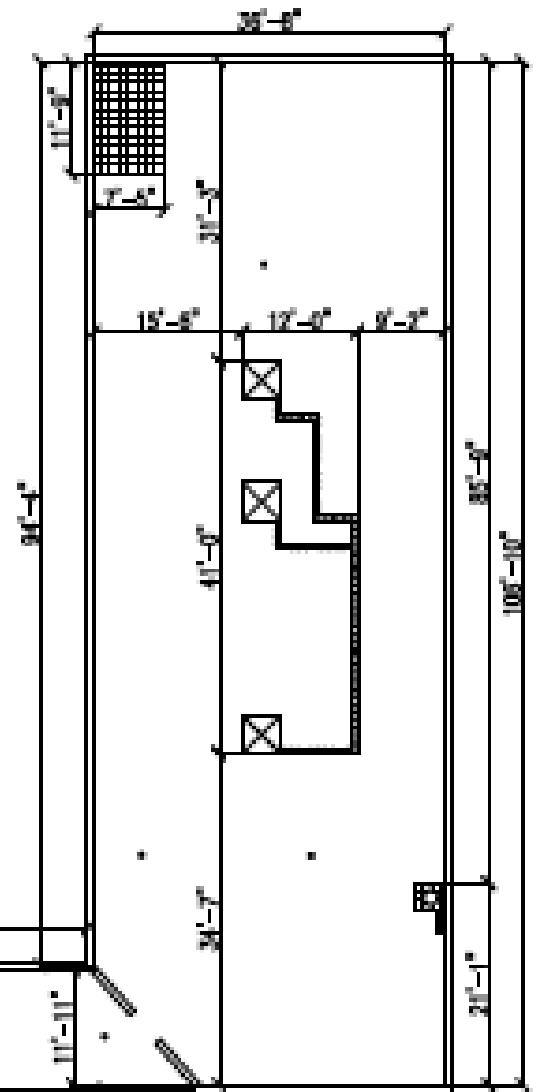
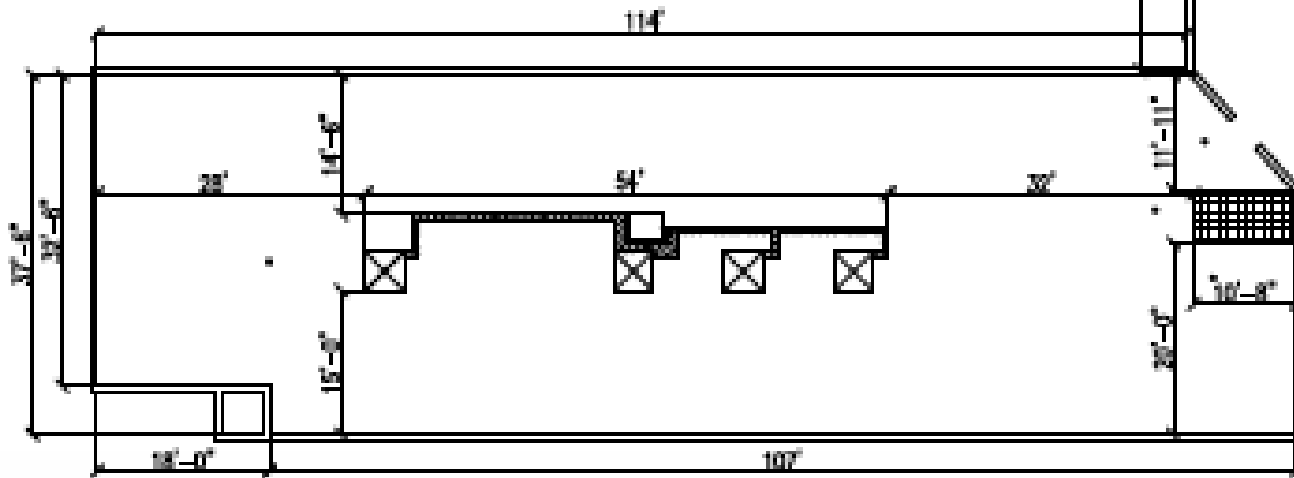
Minimized Safety Concerns





LEGEND

- PLUMBING VENT
- ⊗ AC UNIT
- ▣ CONDUIT
- ▩ MECH. EQUIPMENT



NOTE:
ALL DIMENSIONS ARE APPROXIMATE.

EXISTING ROOF PLAN

SCALE: 1" = 20'



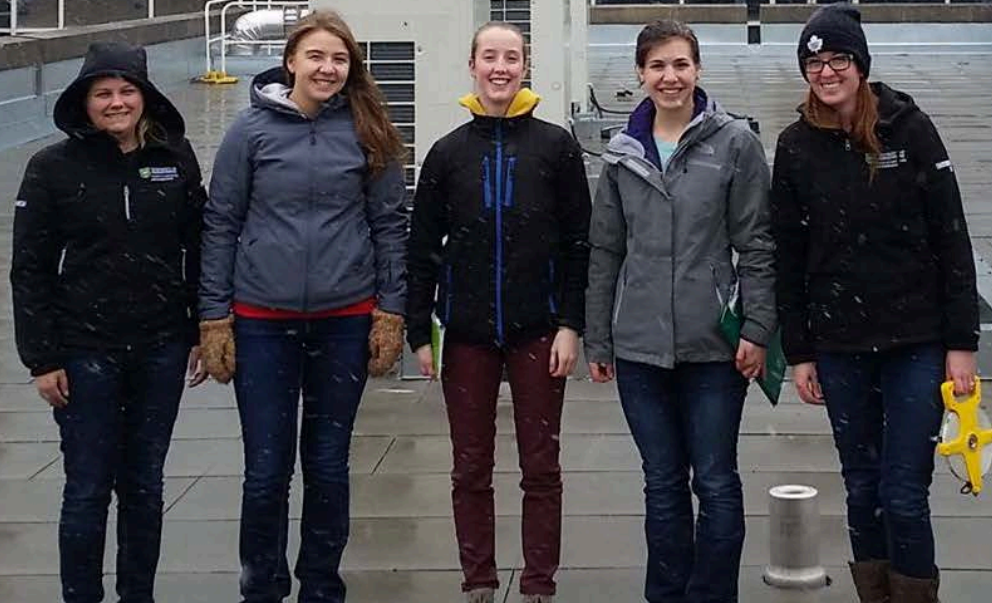


Summary

- Student interest
- Economic support
- Suitable location
- Available space



Get LIT with US!



Acknowledgments

- Toddi Steelman
- Margret Asmuss
- Kathryn Theede
- Jenna Gall
- Keith Hall
- Rod Johnson
- Bert Weichel
- Dirk de Boer
- Brian Daku
- Jacqueline Bantle
- Martin Boucher
- Sharla Daviduik
- Colin Laroque
- Philip Loring