WEEF Proposals - Summer 1995

Item	$	Department
Session 1		
28th Congress of Canadian Engineering Students	7000	Student Project
Developing Skills to run Student Chapter	1716	Mechanical
Watstar - New Pentiums for EL 108	49000	All
Workstation for Geological Engineering Study Room	3605	Geological Engineering
5 Computers for 4 Yr. Electrical Room	10795	Electrical
Visual Projection/Presentation System	9000	Mechanical Eng
Monitors for AutoCad Stations	4700	Mechanical Eng
2 Signal Conditioning Systems	2850	Systems Design
~~Vault 466Lw/ 17" Monitor/CD Rom~~	~~2250~~	~~Systems Design~~
~~Pulse Generators~~	~~1695~~	~~Systems Design~~
Midnight Sun Solar Race Project	5000	Student Project
Formula SAE Data Acquisition Intstrumentation	3016	Student Project
~~Low Flow Meters~~	~~12500~~	~~Chemical Engineering~~
Session 2		
Portable PC for Presentations	3700	All
Addition Disk Space for Civil Eng	2800	Civil
Additional Server for Civil Eng	6500	Civil
~~Data acquisition for Structures Lab~~	~~3000~~	~~Civil~~
Fluid Mechanics Upg.- Portable Beam Scales	3032	Civil
~~Portable DO Meters~~	~~1200~~	~~Civil~~
Filter Domes	2319	Civil
~~Field Spectrophotometer~~	~~2965~~	~~Civil~~
Portable pH/Ion Meter	850	Civil
Incubator	4325	Civil
UV/VIS Spectrophotometer	2902	Civil
1996 Mini Baja Team	1200	Mini Baja
Sled Zeppelin	2000	Student Project
Working Model Engineering Software	4000	System Design
Grand Total	149920	

Geo
2b, 1b

Civil
4a, 3a, 2b

Comp
2b, 4a

Chem
4a, 3a, 2b, 1b

Elec
4a, 2b
3a

Systems
3A, 1b

Mech
3a, 2b, 1b, 4a

XSCIV,

Please write comments onto the enclosed proposals. I'll be taking this to the decision meeting this evening.

Thanks
Stefan.

Session 1

Proposal Title: 28th Congress of Canadian Engineering Students

Submitted by: Casey Colak **Cost**: $7000 **Dept.**: Student Organization

$4000 good, but how accessible will this conference be to UW eng. undergrads

Description of Proposal:
CCES Conference involving 200 Canadian Engineering students consisting of speakers and workshops. The conference is held annually at a different Engineering School each year. UW hosts it 1996.

$425.00/student

Benefits of the Proposal (including number of department(s) and students affected):
The organizing committee and approximately 30 volunteers from all departments. Also, a copy of Project Magazine will be produced for every student that discusses the topic of the conference: Engineering Education.

Class Rep Comments:

Proposal Title: Developing Skills to run Student Chapter (CSME/ASME/SAE)

Submitted by: Linda Ezergailis **Cost**: $1716 **Dept.**: Student Project

$500

Description of Proposal: 3 conferences will be attended by members of the executive to develop leadership and organizational skills, and well as learning about the latest developments in industry and other universities.

Benefits of the Proposal (including number of department(s) and students affected):
Ideas for future lectures, symposiums and competitions. Feedback to the Mech. Eng. Dept. about their cirrocumuli review.

Class Rep Comments:

Proposal Title: EL 108 WATSTAR Upgrade

Submitted by: Matin Macleod **Cost**: $49,000 **Dept.**: All

Description of Proposal: Upgrading of the 28 386/33 PC in EL108 to Pentiums

Benefits of the Proposal (including number of department(s) and students affected):
All engineering students will have access to faster computers.

Either	100 MHz Pentium @ $1600/machine	Total: $49,500
	75 MHz Pentium @ $1300/machine	Total: $40,000

Class Rep Comments: let's not set a precedent that we'll bankroll Watstar from now on.

Proposal Title: Workstation for Geological Engineering Study Room

Submitted by: Jonny Wu **Cost**: $3606 **Dept.**: Geology

Description of Proposal: Workstation for Geological Engineering Study Room

Benefits of the Proposal (including number of department(s) and students affected):
Used for hydrology courses, groundwater studies, on-line access etc.

Class Rep Comments: No need really ... sort of a luxury.

Proposal Title: WATSTAR computers for 4th yr. Electrical Room

Submitted by: Ralph Hoflich **Cost**: $10795 **Dept.**: Electrical

Description of Proposal: 5 computer systems for 4 th yr. Elec. room.

Benefits of the Proposal (including number of department(s) and students affected):
Both streams of Electrical and Computer engineering.

Class Rep Comments: ?

Proposal Title: Classroom Visual Projection/Presentation System

Submitted by: M. Kaptain **Cost**: $9,000 **Dept.**: Mechanical

Description of Proposal: The Department would like to install a state of the art visual presentation system in classroom E1 2536. It will consist of a computer projection system, a CCD camera, a VCR and an audio system for the lecture theater. The estimated cost is $27,000. We are requesting part funding of $9,000.

Benefits of the Proposal (including number of department(s) and students affected): ME students in 2A/2B, 3A/3B.

Class Rep Comments:

Proposal Title: Monitors for ACAD. Stations

Submitted by: M. Kaptain **Cost**: $4700 **Dept.**: Mechanical

Description of Proposal: The Department of Mechanical Engineering is providing a training tutorial facility on WATSTAR for teaching ACAD. The present set of 10 monitors have reliability problems and should be replaced by 17" CAD monitors. Estimated cost is $9,400 and we are requesting half funding of $4,700.

Benefits of the Proposal (including number of department(s) and students affected): All ME students using the WATSTAR system. Especially directed at 1A, 1B, 2A, 2B.

Class Rep Comments: • priority for Mechs. over multimedia classroom.
• autocad course is open to other faculty

Proposal Title: 2 Signal Conditioning Systems

Submitted by: G. Metzker **Cost**: $2,850 **Dept.**: Systems

Description of Proposal: The Department of Systems Design is updating and enhancing the Signals and Systems Laboratory constituent and will be purchasing Signal conditioning modules and components.

Benefits of the Proposal (including number of department(s) and students affected): The requested equipment will be used in the undergraduate laboratory for all SYDE lab courses and workshops. (SYDE 192, SYDE 292, SYDE 161, SYDE 361, SYDE 461, 462)

Class Rep Comments: priot. #1 yes.

Proposal Title: Vault 4661 w/ 17" Monitor/CD ROM

Submitted by: G. Metzker **Cost**: $2,250 **Dept.**: Systems

Description of Proposal: We request one WATSTAR workstation to add to our DASL network, located in E2-1303C. This would bring the total number of workstations up to seven.

Benefits of the Proposal (including number of department(s) and students affected): The requested equipment will be used in the undergraduate laboratory for all SYDE lab courses and workshops. (SYDE 192, SYDE 292, SYDE 161, SYDE 361, SYDE 461, 462)

Class Rep Comments: priord. #7

Proposal Title: Pulse Generators prior #3.

Submitted by: G. Metzker **Cost:** $1,965 **Dept.:** Systems

Description of Proposal: Our proposal is to replace some of our pulse generators in the teaching laboratory with new models by the spring of 1996. The currently used pulse generators had been purchased in 1974 and are becoming ever more unreliable

Benefits of the Proposal (including number of department(s) and students affected): The requested equipment will be used in the undergraduate laboratory for all SYDE lab courses and workshops. (SYDE 192, SYDE 292, SYDE 161, SYDE 361, SYDE 461, 462)

Class Rep Comments:

Proposal Title: Midnight Sun Solar Race Project

Submitted by: Dr. G. Savage, David Walsh **Cost:** $5,000 **Dept.:** Student Project

Description of Proposal: The purpose of the Midnight sun project is to enable undergraduates, graduates , staff and faculty to work on a large scale project. The following items could be purchased with the $5,000: motor for project, hand held radios (4), power point trackers (2), wheels (6).

Benefits of the Proposal (including number of department(s) and students affected): Engineers from all areas have been involved in the project. To date there have been over 50 project courses spanning engineering and physics as well as over 120 students involved at different levels of the project. Project courses include ME 482, ELEC. 499, SYDE 362, 461 & 462, as well as independent projects through GenEng.

Class Rep Comments: get the radios! can the wheels!

Proposal Title: Data Acquisition System, Formula SAE

Submitted by: Todd Malloy **Cost:** $3,016.41 **Dept.:** Student Project

Description of Proposal: The 1996 Formula SAE team will make use of on-board data acquisition during all test & race sessions to maximize the knowledge gained. A-Tech instruments is supplying the unit for a year while the necessary sensors must be purchased at cost.

Benefits of the Proposal (including number of department(s) and students affected): 40 undergrad engineering students from second to fourth year, including mechanical and systems design. Equipment could be loaned to other projects.

Class Rep Comments: partial funding is not attractive. - good presentation.

Session 2

Proposal Title: Portable PC for Presentations

Submitted by: S Kingsley Jones **Cost**: $3700 **Dept.**: All

Description of Proposal: The purchase of a portable PC for use with video projectors or data monitor tablets in presentations. This PC would be available for scheduled sign out by any engineering student on an hourly basis and only for use on campus. The PC would be fairly powerful and well featured to enable use with some of the more complex graphical presentation media. Portability is needed in order to allow it to be used in any room on campus.

Benefits of the Proposal (including number of department(s) and students affected):
All students in courses requiring presentations and students doing work term report presentations. This includes many (500+) students in a term.

Class Rep Comments:

Proposal Title: Additional Disk Space for Civil Engineering WATSTAR Lab

Submitted by: Michael Herz **Cost**: $2800 **Dept.**: Civil

Description of Proposal: Add additional hard disk space for Civil Eng. WATSTAR Lab

Benefits of the Proposal (including number of department(s) and students affected):
The current default of 2 MB is inadequate for Civil Eng students. Increased capacities would enhance user capabilities and response time. All Civil Eng students (250/term) would benefit from this proposal.
Note: The dept. is prepared to provide %50 funding from alumni funds.

Class Rep Comments:

Proposal Title: Additional WATSTAR Server for Civil Eng students

Submitted by: Michael Herz **Cost**: $6500 **Dept.**: Civil

Description of Proposal: Add an additional WATSTAR server for Civil Eng students.

Benefits of the Proposal (including number of department(s) and students affected): The WATSTAR server for civil students is currently running at capacity. All civil engineering students would benefit (250/term) from this additional server.
Note: The dept. is prepared to provide %50 funding from alumni funds.

Class Rep Comments:

Proposal Title: Computer Controlled data acquisition system for structural lab.

Submitted by: MA Polak **Cost**: $3000 **Dept.**: Civil

Description of Proposal: The proposal is related to assembling a fully operation computerized data acquisition system for the structural laboratory. Currently, the lab has a 16 channel data logger which does take measurements, however the data logger cannot be used without a computer. A computer is needed along with interface software.

Benefits of the Proposal (including number of department(s) and students affected):
The system will be used for the structural testing program in CivE 313 as well as for 300 and 400 level project courses (approx. 150 students/term). With a new system, much more advanced and interesting testing can be done by undergraduate civil eng students.

Class Rep Comments:

Proposal Title: Fluid Mechanics Experiment Upgrade

Submitted by: T Ridgeway **Cost**: $ 3032 **Dept.**: Civil

Description of Proposal: Upgrade existing beam balances from imperial to metric in the fluids lab for consistency with other lab equipment.

Benefits of the Proposal (including number of department(s) and students affected):
Used in CivE 280 and CH Eng 025 (175/year)

Class Rep Comments:

Proposal Title: 2 Portable DO Meters

Submitted by: Mark Sobon **Cost**: $ 1200 **Dept.**: Civil

Description of Proposal: This is a portable unit necessary for DO measurements in the field. The BOD adapter enable it to be used for BOD measurements in the lab. There are currently 2 units in our lab, and we find them easy to use and rugged.

Benefits of the Proposal (including number of department(s) and students affected):
Students in CivE 375 would use this in a Water quality bacteriological lab as well as civil students in 126 and 472 using the meters for project use (250/year)

Class Rep Comments:

Proposal Title: 3 Filter Domes

Submitted by: Bruce Stickney **Cost**: $2319 **Dept.**: Civil

Description of Proposal: Pyrex glass Filter Domes are used for Solids Determination when Filtrate needs to be recovered. The units provide for collection of Filtrate into sample containers without the need for additional transfers which speeds up work and reduces the chances for Sample contamination.

Benefits of the Proposal (including number of department(s) and students affected):
These units would replace four old units which are constructed of Acrylic. The Acrylic units age from UV light and Solvent Vapours and have been replaced about every 5 yrs. New glass units eliminate this problem while maintaining visibility of sample collection, so necessary for this type of work. Civ # 472, 126, 300, 400 (200/year)

Class Rep Comments:

Proposal Title: Field Spectrometer

Submitted by: Bruce Stickney **Cost**: $2965 **Dept.**: Civil

Description of Proposal: This is a portable unit widely used for Project work because of its' capability of use in field measurements. It operates on batteries or on line current, and can then be used on a bench in the lab. There is currently one of these units in our lab, and this would give us a second much needed unit.

Benefits of the Proposal (including number of department(s) and students affected):
Students in Env. E 126 and Civ E 472 and other project work use these almost exclusively for their colourimetric Analyses (140/yr). This unit is compatible with another unit, which is very often in use, and would not require using different instrument for field and lab.

Class Rep Comments:

Proposal Title: Portable pH/Ion Meter

Submitted by: Mark Sobon **Cost**: $850 **Dept.**: Civil

Description of Proposal: This is a portable unit which makes it ideal for pH measurements in the field. The unit also allows for the use of an Ion Selective Electrode making it a dual function meter (tracer studies). The meter is also capable of datalogging 50 pts at time intervals.

Benefits of the Proposal (including number of department(s) and students affected): Students in Civ E 375 would use this in several Water Quality labs, along with students in 126, and 472 (250 /yr).

Class Rep Comments:

Proposal Title: Incubator

Submitted by: Bruce Stickney **Cost**: $4325 **Dept.**: Civil

Description of Proposal: Replacement Incubator for a 33 year old unit which needs a new refrigeration compressor. The unit is being used for high temp incubation only (greater than 25 degrees only) however, with the large class sizes (Civ E 376 and 472) over the past 2 years it is necessary that we replace this now with a unit which can provide stable temperatures at or below room temp. The proposed unit's range is from -20 to 55 deg C.

Benefits of the Proposal (including number of department(s) and students affected):
This unit is used every term to support Civ E 375 and 472 (275/yr). Labs would be more flexible as well, making the unit particularly useful for the changing needs of different courses and projects.

Class Rep Comments:

Proposal Title: UV/ VIS Spectophotometer

Submitted by: Bruce Stickney **Cost**: $2902 **Dept.**: Civil

Description of Proposal: The proposed replacement would have a multifunction digital display with an analog output compatible with existing data acquisition equipment for continuous monitoring. These instruments are widely used for Colourimetric Analyses and in our courses for visible tracer studies in reactor characterization.

Benefits of the Proposal (including number of department(s) and students affected):
Several of these units are used and this would be the same as two others in the lab, simplifying instruction in the operation and results retrieval. The units would be used in CivE 375 and 472 (240/yr). The continuous monitoring capability would be especially useful in Civ E 472 because of the length of the experiments (7 Days).

Class Rep Comments:

Proposal Title: Mini Baja Team

Submitted by: Chris Mitchell **Cost**: $1200 **Dept.**: Student Project

Description of Proposal: SAE holds competitions of off-road vehicles which are tested in a variety of competitions.

Benefits of the Proposal (including number of department(s) and students affected):
The Mini Baja team allows students to gain practical experience in engineering design and fabrication. Mini Baja members are typically 4th year mechanical eng students, but any are welcome. Usually 10 people are involved.

Class Rep Comments:

Proposal Title: SLED Zeppelin (Concrete Toboggan 1996)

Submitted by: Steve Adema **Cost:** $2,000 **Dept.:** Student Project

Description of Proposal: Concrete Toboggan is a yearly design competition among engineering schools worldwide. The 1996 toboggan events will be held in Winnipeg, Manitoba. As a team we are seeking funds to cover the cost of constructing the sled

Benefits of the Proposal (including number of department(s) and students affected): This project is a fourth year civil engineering design project that involves approx. 40 fourth year students.

Class Rep Comments:

Proposal Title: Working Model Engineering Software

Submitted by: John McPhee **Cost:** $4000 **Dept.:** Systems

Description of Proposal: Working model is an engineering program for the design of systems of rigid bodies such as robots, mechanical parts, vehicles and satellites. Its graphical user interface allows new designs to be quickly generated and analyzed for its motions response. WM was voted Product of the Year by Design News magazine.

Benefits of the Proposal (including number of department(s) and students affected):
Students in Mechanical and systems design engineering, taking courses related to mechanical design or dynamics:
(SD 181/182, ME 212, ME 321, SD 382, ME 524, SD 553, SD 652)

Class Rep Comments:

WEEF Proposal Form

Summer 1995

Proposal Title: 28th CONGRESS OF CANADIAN ENGINEERING STUDENTS 1996

Submitted by: Casey [illegible] Phone Number: 746-65[illegible]7

Position (Student, Professor, Organization, etc.): Co-Chair

Description of Proposal:

C.C.E.S. IS A STUDENT PROJECT WITH AN ORGANIZING COMMITTEE CONSISTING OF 14 STUDENTS (7 'A' soc., 7 'B' soc.). IT IS A WEEK LONG CONFERENCE FOR OVER 200 CANADIAN ENGINEERING STUDENTS CONSISTING OF SPEAKERS AND SESSIONS ON THE TOPIC "ENGINEERING EDUCATION". THE CONFERENCE IS HELD ANNUALLY AT A DIFFERENT ENGINEERING SCHOOL EACH YEAR. U of WATERLOO IS HOSTING IT IN 1996.

Benefits of the Proposal (including number of department(s) and students affected):

THE PEOPLE DIRECTLY INVOLVED FROM THE UNIVERSITY WILL BE THE ORGANIZING COMMITTEE AND APPROXIMATELY 30 VOLUNTEERS. THESE STUDENTS ARE FROM ALL THE DEPARTMENTS. AS WELL, AS A RESULT OF THE CONFERENCE, A COPY OF PROJECT MAGAZINE WILL BE PRODUCED FOR EVERY ENGINEERING STUDENT AT THE SCHOOL.

Cost Breakdown of Proposal (including partial funding options if desired):

WORKSHOPS - $4000
PROJECT MAGAZINE: $8000

Implementation Schedule for Project:

THE CONGRESS IS CURRENTLY BEING ORGANIZED AND WILL BE HELD FROM DECEMBER 31, 1995 to JANUARY 6, 1996.

Additional Information:

Please submit to WEEF mailbox in the Orifice by Thursday June 22.

WEEF Proposal Form

Summer 1995

Proposal Title: Developing Skills to Run Our Student Chapter

Submitted by: Linda Ezergailis Phone Number: 886-8791

Position (Student, Professor, Organization, etc.): Treasurer CSME/ASME/SAE Student Chapter
Undergraduate Student

Description of Proposal:

- 3 conferences will be attended by members of the executive
- this will develop leadership and organisational skills
- information about the latest developments in industry and other universities will be brought back

Benefits of the Proposal (including number of department(s) and students affected):

- ideas for future lectures, symposiums, and competitions
- feedback to the Mechanical Engineering Department about their curriculum review

Cost Breakdown of Proposal (including partial funding options if desired):

SAE conference	$600
ASME conference	$723
Aerotech '95	$1072

Cost to WEEF: $1716

Alternatives would be to pay for one or two conferences.

Implementation Schedule for Project:

Planning for Winter 1996 begins in the fall. Articles and presentations about the conferences will be made in the Winter of 1996 (January and February)

Additional Information:

PLEASE SEE COMPLETE ATTACHED PROPOSAL.

Please submit to WEEF mailbox in the Office by Wednesday June 28.

WEEF Proposal Form
Summer 1995

Proposal Title: Developing Skills to Run our Student Chapter

Submitted by: Linda Ezergailis **(Home) Phone Number:** 886-8791

Position: Treasurer CSME/ASME/SAE UW Student Chapter
Undergraduate Student

Description of Proposal:

The Canadian Society of Mechanical Engineers/American Society of Mechanical Engineers/Society of Automotive Engineering UW Student Chapter's mission is to bring students and industry together by organizing guest lecturers, industrial tours, and symposiums with special topics.

By belonging to larger national organisations, members can broaden their education by competing in design and communication competitions as well as by attending conferences. In the past year, we have attended the SAE and ASME Annual Student Leadership Conferences. We would like to continue this by attending again in the coming year.

Aerotech '95 is the premier event for aerospace and mechanical engineers in the aircraft field. With over 50 technical presentations and 40 displays, Aerotech '95 promises to offer insight into current and future developments in aerodynamics, propulsion, simulation, and human behavioral factors. One student from the CSME/ASME/ASME student chapter would travel to Aerotech '95 to report on new developments.

Our travel costs were paid for last year by the Mechanical Engineering Department, but due to the further distances this year, we are looking for partial funding from both WEEF and the department.

This proposal outlines our funding requirements to attend the SAE conference in Detroit, the ASME conference in San Francisco and Aerotech '95 in Los Angeles.

Benefits of the Proposal (including number of departments and students affected):

This proposal will benefit the Mechanical Engineering department by returning the latest information and developments that are occurring in several of this universities' research areas. In addition, various sessions may deal with developments in teaching, project management, and student placement programmes within industry. All of this is a benefit directly to the Mechanical Engineering department in their current curriculum review.

The conferences will help the future executive develop leadership and organisational skills, as well as being a liaison with other student groups and industry leaders. Another objective of attending these conferences is to find new ideas for future lectures, symposiums, and design competitions.

The students attending each conference will be elected members of the Winter of 1996 executive. They will submit articles to the Iron Warrior and the CSME/ASME/SAE monthly newsletter. Each student will be required to make a complete technical presentation to the CSME/ASME/SAE student chapter, and other interested parties.

The more events that our student chapter can run, the more we can accommodate the different interests of our members. Our student chapter has 32 active members.

All events run by this student chapter are open to all students staff and faculty. The topics of interest focus on mechanical, automotive and aerospace engineering, but are not limited to these fields. For example, our "Re-Engineering for Recycling" lecture was attended by people in departments other than mechanical and faculties other than engineering.

Last fall, the newly revived student chapter held its first event, Engineering in the Year 2000. Prominent leaders from industry had the chance to inform faculty members what expectations they had for the future graduates of engineering.

The Natural Gas Vehicle Symposium held on June 21 was attended by over 55 students, faculty and members of industry. The organiser, Ross Nairn, generated many ideas when he attended the SAE conference this past February.

Cost Breakdown of Proposal:

Please see the attached page for the cost breakdown. The total cost is $3700, but the cost for WEEF would be $1716. The Mechanical Engineering Department will pay for the other half.

Implementation Schedule for Project:

Planning for the Winter term of 1996 will begin in the fall.

Aerotech '95 occurs from Sept 18-21, and the ASME Annual Conference if from November 9-14, 1995. The delegates will be required to take time off from their work term. The SAE students will attend the conference from February 26-29, and will miss some school.

The Iron Warrior will receive an article about the Aerotech and ASME Conference in the first issue. A presentation will be made by the executives who attended the conferences in January. Following the SAE conference, the same procedure will be repeated.

WEEF Proposal for the Summer of 1995-- CSME/ASME/SAE UW Student Chapter

SAE Conference	Admission	free
Feb. 26-29, 1996	Transportation	100.00
(2 students)	Accomodations	300.00
	Food	200.00
	Total	600.00

ASME Conference	Admission	free
Nov. 9-14, 1995	Transportation	1128.00
(2 students)	Accomodations	600.00
	Food	300.00
	Total	2028.00

Aerotech '95	Admission	free
Sept. 18-21, 1995	Transportation	422.00
(1 student)	Accomodations	400.00
	Food	150.00
	Ancilliary	100.00
	Total	1072.00

All Conferences	3700.00
Weef Contribution	1716.00
Student Contribution	268.00
Mechanical Engineering Contribution	1716.00

Alternatives	**Total**	**WEEF Contribution**	**Mech Eng. Contribution**
Just SAE	600	300	300
Just ASME	2028	1014	1014
Both SAE and ASME	2628	1314	1314

WEEF Proposal Form

Summer 1995

Proposal Title: EL-108 NATSTAR UPGRADE

Submitted by: MARTIN MACLEOD Phone Number: x2965

Position (Student, Professor, Organization, etc.): NATSTAR STAFF

Description of Proposal:

UPGRADE THE 28 33MHz/386 PCs IN EL-108 TO 100 MHZ PENTIUMS. THESE MACHINES HAVE BEEN IN USE FOR 4.5 YEARS.

Benefits of the Proposal (including number of department(s) and students affected):

ALL ENGINEERING STUDENTS

Cost Breakdown of Proposal (including partial funding options if desired):

UNIT COST PER MACHINE + TAX = $1,750

QUANTITY	COST (INCLUDING TAX)
10	$ 17,500
10	$ 17,500
8	$ 14,000
28	$ 49,000

Implementation Schedule for Project:

FALL 1995

Additional Information:

IT WOULD BE TO OUR ADVANTAGE TIME + PRICE WISE IF WE COULD PURCHASE THESE MACHINES ALL AT ONCE

Please submit to WEEF mailbox in the Orifice by Thursday June 22.

Hi Mark

Here is further pricing including the 75MHz pentiums to add to the proposal:

100 MHz Pentiums

Small quantites	Bulk purchase of 28
$1,591/machine	$1,495
x28 machines	x28
x1.11 TAX	x1.11 TAX
---	---
$49,448	**$46,465**

75 MHz Pentiums

Small quantites	Bulk purchase of 28
$1,294/machine	$1,200
x28 machines	x28
x1.11 TAX	x1.11 TAX
---	---
$40,218	**$37,296**

Prices do not include a video card. We will purchase these from our own budget.

As you can see Approx. $90/per machine can be saved by buying all 28 boxes at once. I would like to revise the partial funding to a possible 14 machines now and 14 in the fall instead of the 10-10-8 I had written on the original application. Thanks

Martin

WEEF FUNDING PROPOSAL FORM

Submitter Information

Name: Jonny Wu
Phone Number: 746-9278
E-mail Address: jewu@Novice
Position (ie. student, professor): Student

Proposal Information

Title: Workstation For Geological Engineering Study Room
Date: June 22/95
Type (AE&R or non-AE&R): _____

Description (use the back of this page or additional paper if more space is required):

Pentium 90 CPU Intel
256 K Cache
16 MB RAM
1.44 MB 3.5" Floppy
550 MB hard drive
1 MB PCI ATI Mach 32 Video Card
101 Key Enhanced Keyboard
Mouse
≥ 15" Monitor
Multimedia Package:
- 9x CD ROM
- Speakers, Soundblaster 16 Sound card
Proxion Network Card

Estimated Cost of Proposal (please itemize where possible):

Proxion Network card $380
Pentium 4 ... $2800
Multimedia ... $270
3370
+ GST = 3605.90

Would partial funding to the cost estimate provided above be acceptable? (**Y** or **N**) Y

If absolutely needed we could by the multimedia package at a later date.

Please list the potential beneficiaries of this proposal (cite courses if applicable, access and availability of the proposed purchase, etc.):

- Hydrology and Hydraulic models – "Nick Kouwen course"
- Ground and Surface water – HEC-2, HEC-1, CAMSE [illegible], SWMM, STORM, OTTHYMO, MODFLOW, etc.
  - 486 will not run these models efficiently
- Multimedia presentations – 4th year undergrad thesis work [illegible]
- available to GEO ENG students and faculty – will be overloaded when 4th year students return [illegible]
- on-line access for course registration [illegible]
- digitization of data from 4th-year earth projects
- integration of MS applications – Powerpoint, Word, Excel, Access, etc.

Thank you for your proposal. Please submit the **original** copy to the Endowment Director.

Submitter Signature: [signature]

Date: June 22/95

Department Approval

Every proposal must be reviewed by the appropriate Department Head. This is done to insure that the departments are well informed, and have the opportunity to voice their opinion about proposals being presented to the WEEF Funding Council. If you are unsure who the appropriate Department Head is for your proposal, please contact the Endowment Director, Christopher Nekkers.

The following section is to be completed by the appropriate Department Head.

Name: Maurice B. Dusseault

Position: Chairman, Geo Eng Prog

Phone Extension: 4590

I DO / **DO NOT** (circle one) approve of the above proposal. ("I DO" circled)

If this proposal has not been approved, please indicate the reasons below:

Department Head Signature: [signature]

Date: June 22/95

WEEF Proposal Form

Summer 1995

Proposal Title: WATSTAR TERMINALS for the 4TH YEAR ELECTRICAL ROOM

Submitted by: Ralph Hoflich Phone Number: 725-3645

Position (Student, Professor, Organization, etc.): Student

Description of Proposal:

5 Complete Computer systems. Each system includes:
486DX2-66MHz & MEG RAM 256K Cache, mouse, ATI Mach 32 VESA bus video
VESA bus EIDE card. Datatrain Monitor, Watstar card, 545 Meg HD
@$2159 each

= $10 795.00 ⇒ any combination of systems will suffice

Benefits of the Proposal (including number of department(s) and students affected):

Electrical and Computer engineering faculty. Both streams of upper-year classes.

Cost Breakdown of Proposal (including partial funding options if desired):

5 Systems @ $2159 each. = $10 795.00

Any number of combinations of systems will suffice (partial funding)

Implementation Schedule for Project:

ASAP

Additional Information:

Please submit to WEEF mailbox in the Orifice by Wednesday June 28.

WEEF Proposal Form

Summer 1995

Proposal Title: CLASSROOM VISUAL PROJECTION/PRESENTATION SYSTEM

Submitted by: M. Kaptein Phone Number: 3026

Position (Student, Professor, Organization, etc.): Director of Laboratories

Description of Proposal:

The Department of Mechanical Engineering would like to install a state of the art, visual presentation system in classroom 2536, E1. It will consist of a computer projection system, a CCD camera (to eleviate the need for the instructor to continuously climb up and down from the lecturing platform and remove the overhead projector out of the line of sight of the class), a VCR and an audio system for the lecture theatre. The estimated cost for this project is $ 27,000. We are requesting part funding of $ 9,000.

Benefits of the Proposal (including number of department(s) and students affected):

ME students in 2A/2B.

Cost Breakdown of Proposal (including partial funding options if desired):

The total cost is $ 27,000. We will ask WEEF this term to provide $ 9,000. The Department will provide $ 9,000. This will start the process. In the Fall, we will ask for a further grant from WEEF.

Implementation Schedule for Project:

In progress.

Additional Information:

If this works well, we will be interested in placing a similar system in E4-3374 for our 3A/3B classes. It could be a prototype for other departments with dedicated classrooms.

Please submit to WEEF mailbox in the Office by Wednesday June 28.

WEEF Proposal Form

Summer 1995

Proposal Title: MONITORS FOR ACAD STATIONS

Submitted by: M. Kaptein Phone Number: 3026

Position (Student, Professor, Organization, etc.): Director of Laboratories

Description of Proposal:

The Department of Mechanical Engineering is providing a training tutorial facility on WATSTAR for teaching ACAD. The department provides resource people for this and guides the students throughout this process.

The present set of 10 monitors have reliability problems and should be replaced by 17" CAD monitors. Estimated cost is $ 9,400. and we are requesting half funding of $ 4,700.00.

Benefits of the Proposal (including number of department(s) and students affected):

All of ME students using WATSTAR system. Especially directed at 1A, 1B, 2A, 2B.

Cost Breakdown of Proposal (including partial funding options if desired):

Colour monitors (17") - 50% Department
- 50% WEEF

Implementation Schedule for Project:

September 1995

Additional Information:

Please submit to WEEF mailbox in the Office by Wednesday June 28.

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W E E F Proposal Form

Summer 1995

Proposal Title. Improvements of the Dept. of Systems Design teaching Laboratories.

Submitted by: G. Metzker (representant of Systems Design). Phone Number: 5760

Position (Student, Professor, Organization, etc.): Staff, Date of Submission: June19,1995

Description of Proposal: (Three Items)

1.) The Dept. of Systems Design is updating and enhancing the Signals and Systems Laboratory constituent and will be purchasing Signal conditioning modules and components. (eight system needed for all lab-stations).

2.) We also request one Watstar Workstations, to add to our DASL network, located in Room No. E2 - 1303C. This would bring the number of workstations up to seven.

3.) Our proposal is to replace some of our Pulse Generators in the teaching laboratory with new models by the spring of 1996. The currently used Pulse Generators had been purchased in 1974 and are becoming ever more unreliable.

The above requests are in order of priority.

Benefits of the Proposal (including number and department [s] of students affected) :

The requested equipment will be used in the Systems Design undergraduate Laboratory for all SYDE lab courses and workshops. (SYDE 192, SYDE 292, SYDE 161, SYDE 361, SYDE 461, 462,)

Cost Breakdown of Proposal (including partial funding options if desired):

1.) 2-Signal conditioning system (Epac development tool) and Op-Amp components. Can. $ 2850.00

2.) 1-Vault 466I ISA workstation with 17" high resolution display, 8Meg ram, Watstar network connection, CD Rom drive. Can. $ 2250.00

3.) 1-Pulse Generators Philips Moel No: PM 5712 or Hewlett-Packard Model No:2741. Can. $ 1695.00

Partial funding for all requested equipment is acceptable.

Implementation Schedule for Project:

If funds are approved, some or all of these components should be in place by the Fall term.

WEEF Proposal Form

Summer 1995

Proposal Title: Midnight Sun Solar Race Project

Submitted by: Dr. G. Savage, David Walsh (c/o David Swan) **Phone Number:** x2978 / 2234

Position (Student, Professor, Organization, etc.): Student Project

Description of Proposal:

The Midnight Sun Project is an ongoing project dedicated to education the public on the environment, alternative energy sources, mathematics, science and engineering. It is through this education and through SUNRAYCE that the University of Waterloo will ultimately succeed in solar car design.

The purpose of the Midnight Sun Project is to enable undergraduates, graduates, staff and faculty to work on a large scale project. From the criteria and constraints established, the term must then develop designs that could satisfy these limitations. Ultimately, the proposed designs must be critiqued and a final optimal design chosen. SUNRAYCE allows for all these stages to be explored. The final design will then be compared to other universities in the SUNRAYCE competition to determine the best overall design and team.

Benefits of the Proposal (including number of department(s) and students affected):

In order to promote both SUNRAYCE and the Midnight Sun, the project team has performed lectures, talks and demonstrations to the community and local educational system. As well, Midnight Sun has been in the media; local, national and international. Promoting education, engineering and the environment is a strong concern for the Midnight Sun Project.

Within the project team, members can receive academic credit for conducting research, design and construction of the vehicle. These project courses are Mech 482, Elec 499, SyDe 362, 461 & 462, as well as independent projects through GenEng. To this date, there have been over 50 project courses spanning Engineering and Physics as well as over 120 students involved at different levels of the project.

The benefit to engineering of a project this size is the fact that it is multi-disciplinary. Engineers from all areas have been involved in the project. In fat, the project should be called a University of Waterloo Project based in Engineering due to the number of non-engineering students involved. With this scope, engineering begins to integrate into society.

Cost Breakdown of Proposal (including partial funding options if desired):

The Midnight Sun team is requesting $5000 from WEEF. With this cash, the project can purchase the much needed equipment to continue. The following is a detailed break down of the **possible** uses of a $5000 donation.

Motor for Project	$6285
Hand-held Radios (4)	$2600
Power Point Trackers (2)	$2581
Wheels (6)	$2300

The Midnight Sun Project would accept partial funding.

Implementation Schedule of Project:

The Midnight Sun Project is an ongoing project that has recently completed its third vehicle in six years. Designs are currently underway for the SUNRAYCE in 1997 as well as plans for the WORLD SOLAR CHALLENGE in Australia in 1996. The workshops are a continuing aspect to the project, enabling students to work in the field of their interest.

A Portable PC for Presentations

Submitted by: Stephen Kingsley-Jones
725.3052

Description:

The purchase of a portable PC for use with video projectors or data monitor tablets in presentations. This PC would be available for scheduled signout by any Engineering student on an hourly basis and only for use on campus. The PC would be fairly powerful & well featured to enable use with some of the more complex graphical presentation media. Portability is also a necessity in order to allow it to be used in any room across campus.

Estimated Cost of Proposal:

Portable 486/66 PC
VGA colour
345 MB HD
8 MB memory
Total: $3700.

Potential Beneficiaries:

1. All Engineering students in courses requiring presentations. Specifically those enrolled in fourth year, some courses in Systems design and some elective courses would benefit.

2. Engineering students who are required to perform work report presentations.

3. SFF Technical Speaker competition entries.

4. Student groups such as Midnight Sun, CASI, or conference organizers who make presentations for fundraising purposes.

Implementation:
Purchase PC, set up sign out, publicize availability.

WEEF Proposal Form
SPRING 1995

Proposal Title: Additional Disk Space for Civil Engineering Undergraduate WATSTAR Lab

Submitted by: Michael Herz **Phone Number:** 3411

Position: Computer Systems Manager, Civil Engineering

Date of Submission: June 19, 1995

Description of Proposal: Add additional hard disk space for Civil Engineering WATSTAR Lab.

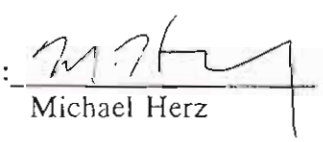
Benefits of the Proposal: The current default of 2MB of disk space is inadequate for the Civil Engineering Undergraduate requirements. Increased disk space would enhance user capabilities and response time. All Civil undergraduates (250 per term) would benefit from this increased disk space on the WATSTAR system.

Cost Breakdown of Proposal:

Hard Drive	$2500
SCSI card	$ 300
Total:	$2,800 plus applicable taxes..

Implementation Schedule: Immediately.

Would partial funding to the cost estimate provided above be acceptable? YES

Submitter Signature:  Date: 6.22.95

Michael Herz

Note: The Department is prepared to provide 50% funding from ALUMNI funds.

WEEF Proposal Form
SPRING 1995

Proposal Title: Additional WATSTAR Server for Civil Engineering Undergraduate WATSTAR Lab.

Submitted by: Michael Herz **Phone Number:** 3411

Position: Computer Systems Manager, Civil Engineering

Date of Submission: June 19, 1995

Description of Proposal: Add an additional WATSTAR server for Civil Engineering Undergraduate WATSTAR Lab.

Benefits of the Proposal: The WATSTAR server for Civil undergraduate students is currently running at capacity. An additional server would enhance user response time and increase computing capabilities. All Civil undergraduate (250 approx. per term) would benefit from this additional server.

Cost Breakdown of Proposal:

Server	$3000
Hard Drives	$2500
Networking	$1000
Total:	$6,500 plus applicable taxes..

Implementation Schedule: Immediately.

Would partial funding to the cost estimate provided above be acceptable? YES

Submitter Signature: M. Herz Date: 6.22.95.
Michael Herz

Note: The Department is prepared to provide 50% funding from ALUMNI Funds.

WEEF Proposal Form

Summer 1995

Proposal Title: Computer-Controlled Data Acquisition System for Structural Laboratory

Submitted by: M.A. Polak Phone Number: (519) 888-4567 Ext. 5325

Position (Student, Professor, Organization, etc.): Assistant Professor

Description of Proposal:

The proposal is related to assembling a fully operational computerized data acquisition system for the Structural Laboratory. Currently, the Laboratory has a 16 Channel Data Logger (Sciemetric Instruments System 200), which can be used for reading the measurements during laboratory testing. However, the Data Logger cannot be used without a computer interface which would allow data storage and real-time displays of the measured properties. The required component is a PC computer plus interface software. This computer would become a part of the Data Acquisition system and should be used exclusively for the purpose of testing.

Benefits of the Proposal (including number of department(s) and students affected):

See attached page

Cost Breakdown of Proposal (including partial funding options if desired):

IBM PC Computer 486/66	$2,500
Interface Software	500
	$3,000

Implementation Schedule for Project:

See attached page

Additional Information:

The described type of data acquisition system is a part of any modern laboratory and therefore it is very important for the benefit of undergraduate students that the system in the structural lab be updated as soon as possible.

It is essential for our undergraduate students to be exposed to the modern technology in the field of experimental investigations.

Please submit to WEEF mailbox in the Office by Wednesday June 28.

WEEF PROPOSAL FORM ATTACHMENTS

Implementation Schedule for Project

Step 1 - purchase of the computer - July 1995
Step 2 - purchase of the interface software - July 1995
Step 3 - implementation and adjustment of the software for the Scientific Data Logger (existing) and the PC Computer (part of this proposal) - Fall 1995. This can be done by undergraduate Civil students as a part of Civ. E. 400 project course.
Step 4 - system ready for use in testing for the winter semester 1996. (Courses Civ. E. 313, Civ. E. 300 and Civ. E. 400)

Benefits of the Proposal

The data acquisition system will be used for the structural testing program in the Civil 313, (Structural Concrete Course). This course is offered in the Fall and Winter terms - approximately 80-100 students each term. The very important benefit from the system will be for the project courses - Civ. E. 300 and Civ. E. 400 (approximately 100 students per term). As a part of these project courses, the students will be able to undertake projects involving structural testing. They will have a benefit of learning about modern data acquisition techniques - something they cannot do at the moment in the structural laboratory. With the new system, much more advanced and interesting testing projects would become feasible for undergraduate students.

The proposed data acquisition system could also be used in all other undergraduate courses requiring testing and collecting of test data.

Submitter Signature: M.A. Polak Dated: June 22/95

M.A. Polak

WEEF Proposal Form
SPRING 1995

Proposal Title: Fluid Mechanics Experiment Upgrade - Portable Beam Scales.

Submitted by: T. Ridgway **Phone Number:** 3042

Position: Technologist **Date of Submission:** 95.06.21

Description of Proposal: Upgrade existing beam balances from imperial to metric in the Fluids Lab for consistency with other lab equipment.

Benefits of the Proposal: Used in Civ.E. 280 (Fluid Mechanics and Thermal Sciences) and CH E 025 (Transport Processes 2 - Fluid Mechanics) (175 students p.a.).

Cost Breakdown of Proposal: Model 4182 (Mettler-Toledo, Inc.) 4 units required @ $758/unit - total: $3032.

Implementation Schedule for Project: Immediately.

Would partial funding to the cost estimate provided above be acceptable? YES

Submitter Signature: T. Ridgway Date: June 22/95

T. Ridgway

Department Approval

Every proposal must be reviewed by the appropriate Department Head. This is done to insure that the departments are well informed, and have the opportunity to voice their opinion about proposals being presented to the WEEF Funding Council.

The following section is to be completed by the appropriate Department Head.

Name: Dr. J. Roorda
Position: Chair, Civil Engineering
Phone: Ext. 2672

Proposal approved: J. Roorda Dated: June 22/95

J. Roorda

If this proposal has not been approved, please indicate the reasons below:

WEEF Proposal Form
Spring 95

Proposal Title : **(2)** Portable D.O. Meters

Submitted by : Mark Sobon

Phone Number : 5263

Position : Water Resourses Group
Civil Engineering

Date of Submission : 95.06.20

Description of Proposal : This is a portable unit necessary for D.O. (dissolved oxygen) measurements in the field. The B.O.D adapter enables it to be used for B.O.D (biochemical oxygen demand) measurments in the lab. It is also capable of datalogging 50 pts at time intervals. There are currently two of these units in our lab, and we find them easy to use and rugged.

Benefits of the Proposal : Students in Civ.E. 375 would use this in a Water Quality Bacteriological lab (approx 150 p.a.). Also students in Civ.E. 126,472 (approx. 110 students p.a.) do use the meters for project use. The use of similar units will reduce the confusion of learning the operation of several different units.

Cost Breakdown of Proposal : $ 1200

Implementation Schedule For Project : Immediate

Additional Information :

Submitter's Signature: M. Sobon Dated: Thurs 22/6/95

WEEF Proposal Form

Spring 1995

Proposal Title: FILTER DOMES (3)

Submitted by: Bruce Stickney **Phone Number:** 2908

Position: Water Resources Group
Civil Engineering **Date of Submission:** 95.06.19

Description of Proposal: Pyrex glass Filter Domes are used for Solids Determination when Filtrate needs to be recovered. The units provide for collection of Filtrate into sample containers without the need for additional transfers which speeds up work and reduces the chances for Sample contamination or carry-over.

Benefits of the Proposal: These units would replace four old units which are constructed of Acrylic. The Acrylic units age from UV light and Solvent Vapours and have been replaced about every five years. New glass units eliminate this problem while maintaining visibilty of sample collection, so necessary for this type of work. The units would be used in Civ.E. 472, in Civ.E./Env.E. 126, 300, and 400 Projects and Environmental Engineering Courses benefitting 220 students p.a.

Cost Breakdown of Proposal: Fisher Sci. Quote #425259, $ 773./ea. TOTAL $ 2319.00.

Implementation Schedule for Project: Immediate for Civ.E. courses involving 150 students p.a.

Additional Information:

Submitter's Signature: B. Stickney Dated: June 22, 1995.

WEEF Proposal Form

Spring 1995

Proposal Title: Field Spectrophotometer

Submitted by: Bruce Stickney **Phone Number:** 2908

Position: Water Resources Group
Civil Engineering **Date of Submission:** 95.06.19

Description of Proposal: This is a portable unit widely used for Project work because of its' capability of use in field measurements. It operates on batteries or on line current and can then be used on a bench in the lab. There is currently one of these units in our lab. and this would give us a second much needed unit.

Benefits of the Proposal: Students in Env.E. 126, Civ.E. 472 and other Project work use these almost exclusively for their Colourimetric Analyses (approx. 140 students p.a.) This unit is compatible with another unit, which is very often in use, and would not require using different instruments for field and lab. use, this being tedious because of additional calibration, and learning operation of several different units.

Cost Breakdown of Proposal: $ 2965.00

Implementation Schedule for Project: Immediate.

Additional Information:

Submitter's Signature: Bruce Stickney Dated: June 22, 1995.
Bruce Stickney

WEEF Proposal Form
Spring 95

Proposal Title : Portable pH/Ion Meter

Submitted by : Mark Sobon

Phone Number : 5263

Position : Water Resourses Group
Civil Engineering

Date of Submission : 95.06.20

Description of Proposal : This is a portable unit which makes it ideal for Ph measurements in the field. The unit also allows for the use of an Ion Selective Electrode making it a dual function meter (tracer studies). The meter is also capable of datalogging 50 pts at time intervals.

Benefits of the Proposal : Students in Civ.E. 375 would use this in several Water Quality labs (approx 150 p.a.). Also students in Civ.E. 126,472 (approx.110 students p.a.) do use the meters for lab and project use.

Cost Breakdown of Proposal : $ 850

Implementation Schedule For Project : Immediate

Additional Information :

Submitter's Signature: _____ Dated: June 22/95
M. Sobon

WEEF Proposal Form

Spring 1995

Proposal Title: INCUBATOR

Submitted by: Bruce Stickney **Phone Number:** 2908

Position: Water Resources Group
Civil Engineering **Date of Submission:** 95.06.19

Description of Proposal: Replacement Incubator for a 33 year-old unit which needs a new refrigeration compressor. The unit is being used for high temperature incubation only (eg.- greater than 25 deg. C.) however with the large class sizes (Civ. E. 375 and 472) over the past 2 years it is necessary that we replace this now with a unit which can provide stable temperatures at or below room temperature. The proposed unit has a temperature range from -20 to 55 deg. C.

Benefits of the Proposal: This unit is used every term to support Civ.E. 375 and 472 (approx. 275 students p.a.) Laboratories and would have the capability of operating over a wide range of temperatures making it particularly useful for the changing needs of different courses and projects.

Cost Breakdown of Proposal: The propsed unit is an SP Model BOD-50 available from our Systems Contractor @ $ 4325.00

Implementation Schedule for Project: The unit would be installed immediately.

Additional Information:

Submitter's Signature: L. Bruce Stickney Dated: June 22, 1995.

Bruce Stickney

WEEF Proposal Form
Spring 1995

Proposal Title: UV/VIS SPECTROPHOTOMETER

Submitted by: Bruce Stickney **Phone Number:** 2908

Position: Environmental Group
Civil Engineering **Date of Submission:** 95.06.19

Description of Proposal:

The proposed replacement would have a multifunction digital display with an analog output compatible with existing data aquisition equipment for continuous monitoring. These instruments are widely used for Colourimetric Analyses and in our courses for visible tracer studies in reactor characterization.

Benefits of the Proposal:

Several of these units are used and this would be the same as two others in the laboratory, simplifying instruction in the operation and results retrieval. The unit would be used in Civ.E. 375 and 472 (approx. 240 students p.a.). The continuous monitoring capability would be especially useful in Civ.E. 472 because of the great length of experiments (ie. 7 days). This aquisition would bring all our Spectrophotometers up to current standards.

Cost Breakdown of Proposal:

Milton-Roy Spectronic 20D	$ 2902.
Complete with Flow-thru Cell HACH # 45215	

Implementation Schedule for Project:

This unit would be placed in service immediately upon receipt, presumably for the Spring term 1995.

Additional Information:

Submitter's Signature: L. Bruce Stickney Dated: June 22, 1995
Bruce Stickney

WEEF Proposal Form

Winter 1995

Proposal Title: 1996 Mini Baja Team

Submitted by: Steven Peplinski Phone Number: 885-2639
Chris Mitchell

Position (Student, Professor, Organization, etc.): student - Mini Baja Co-chair

Description of Proposal:

The Mini Baja competition is held by the Society of Automotive Engineers every year. Teams are required to construct off-road vehicles which are tested in a variety of competitions. Teams from the US and Canada enter and MU has had some very high placings (2nd, 3rd) in the past. This proposal would partly fund the 1996 Mini Baja entry.

Benefits of the Proposal (including number of department(s) and students affected):

The Mini Baja team allows students to gain practical experience in engineering design & fabrication. Mini Baja members are typically 4th year mechanical engineering students but any engineering student is welcome. Usually 12 students are involved

Cost Breakdown of Proposal (including partial funding options if desired):

To compete in the 1996 Mini Baja competition several changes are required to improve the reliability of the existing car. WEEF funds will be used to construct a new transmission for the car as well as purchase spare & replacement parts for the brakes and suspension. WEEF funding of $1200.00 would help purchase transmission components and spare parts. Partial funding of any amount is an option.

Implementation Schedule for Project:

Funds allocated by WEEF will be used in the summer of 95 and winter of 96 to prepare for the June 1996 competition.

Additional Information:

The last Waterloo Mini-Baja entry was in 1994. The car performed very well, though reliability problems caused Waterloo to finish in mid-pack. The 1996 entry plans to build on much of the 1994 car while increasing overall reliability.

Please submit to WEEF mailbox in the Office by Friday February 3.

WEEF Proposal Form

Summer 1995

Proposal Title: SLED ZEPPELIN (CONCRETE TOBOGGAN '96)

Submitted by: STEVEN ADEMA Phone Number: 834 · 4656

Position (Student, Professor, Organization, etc.): STUDENT

Description of Proposal:

CONCRETE TOBOGGAN IS A YEARLY DESIGN COMPETITION AMONG ENGINEERING SCHOOLS WORLD WIDE. IN 1996, THE TOBOGGAN FINALS WILL BE HELD IN WINNIPEG, MANITOBA. AS A TEAM, WE ARE SEEKING FUNDING TO HELP COVER THE COST OF CONSTRUCTING THE SLED.

Benefits of the Proposal (including number of department(s) and students affected):

THIS PROJECT IS A FOURTH YEAR CIVIL ENGINEERING DESIGN PROJECT THAT INVOLVES APPROX. 40 4th YEAR STUDENTS. THE BENEFIT OF THE PROJECT IS TO [illegible] HOW DESIGNS AND [illegible] OF THE TOBOGGAN FARE AGAINST OTHER SCHOOLS.

Cost Breakdown of Proposal (including partial funding options if desired):

DESCRIPTION	COST	[illegible]
DESIGN + CONSTRUCTION OF SLED	$ 2,000	$ 2,000 —
TRANSPORTATION	$ 10,000 —	$ 0 —
LODGING (HOTEL) IN WINNIPEG	$ 5,000 —	$ 0 —

Implementation Schedule for Project:

DESIGN IS ALREADY UNDERWAY. CONSTRUCTION TO BEGIN AROUND THE FIRST OF NOVEMBER.

Additional Information:

AS A GROUP WE WILL BE GLAD TO ANSWER ANY QUESTIONS YOU MAY HAVE AND LOOK FORWARD TO PRESENTING OUR [illegible].

SINCERELY,

[illegible signature]

Please submit to WEEF mailbox in the Orifice by Wednesday June 28.

WEEF Proposal Form

Summer 1995

Proposal Title: WORKING MODEL Engineering Software

Submitted by: JOHN McPHEE Phone Number: 5341

Position (Student, Professor, Organization, etc.): ASS'T PROF, SYSTEMS DESIGN

Description of Proposal:

WORKING MODEL (WM) is an engineering program for the design of systems of rigid bodies such as robots, mechanisms, vehicles, and satellites. It's graphical user interface allows new designs to be quickly generated and analyzed for its motion response. WM was voted Product of the Year by Design News magazine (see attached).

Benefits of the Proposal (including number of department(s) and students affected):

Students in both mechanical and systems design engineering, taking courses related to mechanical design & dynamics (e.g. SD 181/182, ME 212, ME 321, SD 382, ME 524, SD 553, SD 652).

Cost Breakdown of Proposal (including partial funding options if desired):

WATSTAR

$2970 U.S. (approx $4000 CDN) includes license for 20 users of software, plus 5 manuals and technical support.

(see attached for complete list of prices and maintenance options)

Implementation Schedule for Project:

If available, WM would immediately be incorporated into SD 652 (Fall 1995) and SD 382 (Winter 1996).

Additional Information:

Past experience with the DADS software in the SD 382 course has shown it to be very powerful for analysis, but tedious and slow to create new design ideas. A combined use of the two packages would prove ideal for the students.

Please submit to WEEF mailbox in the Office by Wednesday June 28.

Knowledge Revolution

66 Bovet Rd, Suite 200 • San Mateo CA 94402
Tel: 1-800-766-6615 • Fax: 1-415-574-7541

Working Model®

Academic Multi-Unit and Site License Information

December 1, 1994

Working Model® Overview

Working Model is a revolutionary piece of software that allows engineers to create and analyze real-life mechanical systems. It is used by professional engineers and designers around the world to design engines, develop robots, validate rocket launch calculations, simulate destructive tests, reconstruct automobile accidents, and model complicated feedback systems. Knowledge Revolution offers Working Model to educational institutions at substantially reduced prices.

Single and Multi-Unit Option

Knowledge Revolution offers single units of Working Model to educators at over 50% off the retail price. Single unit packages are identical to those sold to professional engineers.

Educators may also purchase 5, 10, 20, and 30 multi-unit packs for use in University labs or within workgroups. Lab packs include several sets of documentation and unlimited technical support. A yearly maintenance option, however, is not available with a lab pack.

Working Model Academic Price List - December, 1994

Regular List Price	~~$1,495~~
Education Single User Price	$345
Upgrade (version 1.0 to version 2.0) Price*	$50

Educational Multi-Unit Pricing

	Price	Manuals	Upgrade Price†	Single-Unit Conversion Price*
5-Pack	$1,485	2	$149	$1,140
10-Pack	$2,475	3	$249	$2,130
20-Pack	$2,970	5	$299	$2,625
30-Pack	$3,465	7	$345	$3,120

Academic Site Licenses

Number of Concurrent Users	Price	Manuals	Yearly Maint.
31-50	$4,455	9	$891
51-75	$5,445	9	$1,089
76-100	$6,435	9	$1,287
101-150	$7,425	9	$1,485
151-200	$8,415	9	$1,683
201-250	$9,405	9	$1,881
251-300	$10,395	9	$2,079
Unlimited	$11,385	9	$2,277

† For single and multi-unit registered customers only.
* Conversion from single-unit and multi-unit lab packs. For registered single-unit customers only.

Academic Site Licenses

An academic site license ensures that all faculty, staff, and students will have unlimited access to Working Model on university owned computers. Under an academic site license, a university pays one fee and signs one contract for a pre-determined maximum number of compatible hardware systems.

- Certain restrictions apply to qualify for an academic site license.
- The first year's fee provides a license to use a given release of Working Model™ in perpetuity.
- The first year's fee also covers one year of technical support and upgrades.
- A yearly maintenance fee, if desired, covers technical support and upgrades for the second and consecutive years.
- Software is delivered on diskettes for both PC Windows and Macintosh hardware platforms. A university assigned administrator produces and distributes copies from this source.
- One copy of the documentation is delivered per base price multiplier (see price chart). Additional copies can be purchased from Knowledge Revolution as they are required at a cost of $25 each.
- Additional smaller sites, such as affiliated campuses, research stations, etc., may be licensed at 50% of the listed fee.
- For an additional 5% handling and finance fee, yearly billing may be broken up into four quarterly installments. A full year's license must still be signed.
- Site licenses may be upgraded to allow for more computers at any time after the initial contract is signed by paying 1.3 time the difference between categories.

PRODUCT NEWS

WE WIN!

WORKING MODEL VOTED PRODUCT OF THE YEAR BY *DESIGN NEWS* MAGAZINE READERS

NEWTON, MA - Working Model has been chosen 1994's Product of the Year in an annual reader poll by Design News magazine. The selection process, which began during the summer months of 1994, rated Working Model as the best new product from a field of more than 1000 entries.

Working Model was selected for several reasons, including its wide range of features and its incredible ease-of-use. The overall quality of the software was also a significant factor in the decision process. Contest judge Richard Morley, CEO of Flowers Technology, says, "This is clearly the first place winner for good design work, quality of design, and an overall superior product."

Design News' Product of the Year selection process consists of two steps. In the first stage, judging is done by a selection panel made up of engineers and leaders in both industry and research. According to Design News, this panel selects award winning products based upon true excellence in engineering work and design. Seven product categories were created to help the panel single out the best of each class. Working Model received top honors in the only software category, beating out over 200 CAD/CAE software products that included ANSYS, Rasna Mechanica 5, VisLab and Inertia, to name just a few.

Design News magazine's readers selected Working Model 1994's Product of the Year.

Design News readers make the final selection for Product of the Year. From the top winners of each of the seven categories, readers fax in votes on what product they feel made the most positive impact in their field in the past year. Readers overwhelmingly voted for Working Model.

TECH TIPS

This column covers frequently asked technical support questions and provides general Working Model tips. If you have a good tip, e-mail it to peterg@krev.com

Q: Can Working Model simulate flexible bodies?

A: Working Model is a rigid body simulator. However, simple flexible beams can accurately be modeled by breaking down a beam into smaller rigid body sections and connecting these with rotational springs. The accuracy of this method is dependent on several factors, including the number of small sections used and the spring constant chosen. Knowledge Revolution publishes a paper on this handy technique. Call 1-800-766-6615 and ask for a sales representative to get a free copy.

Q: How can I use Working Model to calculate the force needed to accomplish a certain task?

A: One easy way to do this is to take advantage of the simple control systems built into Working Model's motors and actuators. For example, to measure the force needed to lift a body at a certain rate, use a "velocity" type actuator, set the velocity to the desired rate, and create a meter that measures the tension in the actuator. This type of analysis is frequently called "inverse dynamics", and is commonly used by Working Model users to accurately size a design's components. Knowledge Revolution publishes a technical paper on this topic entitled "Quasi Static Analysis" that can be faxed to you by calling a sales representative at 1-800-766-6615.

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