June 9, 2005

Universities Academic Pension Plan

Report on the Actuarial Valuation for Funding Purposes as at December 31, 2004

MERCER
Human Resource Consulting

MMC Marsh & McLennan Companies

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Summary of Results (000,000's)

Going-Concern Financial Position[1]	**31.12.2004**	**31.12.2002**
Actuarial value of assets	$1,816.9	$1,704.7
Actuarial liability	$2,460.9	$2,151.3
Funding excess (unfunded liability)	($644.0)	($446.6)
Funded Ratio	73.8%	79.2%
Solvency Financial Position[1]	**31.12.2004**	**31.12.2002**
Solvency assets	$1,910.8	$1,548.5
Solvency liability	$2,985.9	$2,460.2
Solvency excess (deficiency)	($1,075.1)	($911.7)
Solvency ratio	64.0%	62.9%
Funding Requirements[2]	**2005**	**2003**
Current Service Cost	$77.3	$63.6
Covered Pay	$491.6	$415.3
Current service cost as a percentage of covered pay (% of pay)	15.72%	15.31%
Unfunded liability payments as a % of pay (excluding government share)	4.92%	3.02%
Solvency special payments as a % of pay	0.00%	0.00%
Total contributions as a % of pay	20.64%	18.33%

1. Note that in respect of pre-1992 service, the Government of Alberta has an obligation to fund a portion of the unfunded liability. Their share is being funded by contributions of 1.25% of total payroll each year. The present value of these future contributions has not been included in this financial summary.
2. Excludes the Government of Alberta contribution towards pre-1992 service of 1.25% of total payroll.

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Introduction

Report on the Actuarial Valuation as at December 31, 2004

To the Universities Academic Pension Plan Board of Trustees

At your request, we have conducted an actuarial valuation of the Universities Academic Pension Plan (UAPP) as at December 31, 2004. We are pleased to present the results of the valuation.

The purpose of this valuation is to determine:

- the funded status of the plan as at December 31, 2004 on going-concern and solvency bases, and
- the range of permissible funding contributions pursuant to the *Employment Pension Plans Act* for years 2005 and on.

The previous valuation of the plan for similar purposes was prepared as of December 31, 2002.

The next actuarial valuation of the plan will be required as at a date not later than December 31, 2007 or as at the date of an earlier amendment to the plan.

This valuation reflects the provisions of the plan as at December 31, 2004. The plan has not been amended since the date of the previous valuation.

The 2005 federal budget provides for an increase to the maximum pension permitted under a registered pension plan. The maximum pension will increase to $2,111 per year of service in 2006, $2,222 per year of service in 2007, $2,333 per year of service in 2008, $2,444 per year of service in 2009, and indexed thereafter with average industrial wages. For UAPP, these increases are effected by increasing the salary cap. As of the date of this report, the Income Tax Act has not yet been amended to provide for these increases, however, we have reflected these increases in the valuation results. This change increased the plan's liabilities by $9.5 million.

A summary of the plan provisions is provided in Appendix D.

The Alberta government has passed an Employment Pension Plans Amendment Regulation (number 245/2003) by Order in Council (number 357/2003), exempting the Universities Academic Pension Plan from funding solvency deficiencies effective January 1, 2003. The funding requirements incorporated in this valuation report reflect these legislative changes.

We have used the same going-concern valuation assumptions and methods as were used for the valuation as at December 31, 2002 except for the following changes:

- Price inflation is assumed to increase at 2.75% per annum. The previous valuation assumed 3.0% per annum.

- The discount rate has been lowered to 6.75% from 7.0% in the last valuation.

- Pensionable earnings are assumed to grow at 3.75% per annum for 2 years following the valuation date, and 2.75% per annum thereafter, plus age-based merit and promotion. The previous valuation assumed 3.0% per annum plus age-based merit and promotion.

- The YMPE is assumed to grow at 3.0% per annum. The previous valuation assumed 3.5% per annum.

- We have assumed the average industrial wage increases related to the maximum pension limits will increase at 3.0% per annum starting in 2010. The previous valuation assumed the average industrial wage increases at 3.5% per annum starting in 2006.

- Total payroll (for pre-1992 service additional contributions) is assumed to grow at 6.0% for 2 years, and 5.0% per annum thereafter. The previous valuation assumed 5.25% per annum.

The net impact of the assumption changes is an increase in liability of $37.8 million. The assumptions are described in detail in Appendix B.

After checking with representatives of the Universities Academic Pension Plan, to the best of our knowledge there have been no other events subsequent to the valuation date which, in our opinion, would have a material impact on the results of the valuation.

This report will be filed with Alberta Finance and with the Canada Revenue Agency.

Respectfully submitted,

Brenda Prysko	Carole Richards
Brenda Prysko F.S.A., F.C.I.A.	Carole Richards F.S.A., F.C.I.A..
June 9, 2005 Date	June 9, 2005 Date

Universities Academic Pension Plan

File number with Alberta Finance: 45761

Registration number with the Canada Revenue Agency: 0339572

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Financial Position of the Plan

Valuation Results — Going-Concern Basis

When conducting a valuation on a going-concern basis, we determine the relationship between the respective values of assets and accumulated benefits, assuming the plan will be maintained indefinitely.

Financial Position

The results of the valuation as at December 31, 2004, in comparison with those of the previous valuation as at December 31, 2002, are summarized as follows:

Financial Position — Going-Concern Basis ($000,000's)

	31.12.2004	31.12.2002
Actuarial value of assets		
Market value	$1,904.0	$1,541.4
Smoothing adjustment	($96.0)	$154.2
Present value of prior service payments due	$8.0	$8.0
TIAA-CREF balances	$0.9	$1.1
Total actuarial value of assets	$1,816.9	$1,704.7
Actuarial liability		
Present value of accrued benefits for:		
▪ Active members	$1,110.7	$976.9
▪ Pensioners and survivors	$1,266.5	$1,098.9
▪ Deferred pensioners and hold-on-deposits	$83.7	$75.5
Total liability	$2,460.9	$2,151.3
Funding excess (unfunded liability)	($644.0)	($446.6)
Funded ratio	73.8%	79.2%

Due to the nature of the financing arrangement for pre-1992 unfunded liabilities, it is necessary to track the financial status of the plan for service pre and post January 1, 1992. The following table summarizes this split.

	As at December 31, 2004 ($000,000's)		
	Pre-1992	**Post-1991**	**Total**
Actuarial value of assets			
Market value	$1,082.7	$821.3	$1,904.0
Smoothing adjustment	($55.6)	($40.4)	($96.0)
Present value of prior service payments due	$0.0	$8.0	$8.0
TIAA-CREF balances	$0.9	$0.0	$0.9
Total actuarial value of assets	$1,028.0	$788.9	$1,816.9
Actuarial liability			
Present value of accrued benefits for:			
Active members	$445.0	$665.7	$1,110.7
Pensioners and survivors	$1,049.8	$216.7	$1,266.5
Deferred pensioners and hold-on-deposits	$51.1	$32.6	$83.7
Total liability	$1,545.9	$915.0	$2,460.9
Funding excess (unfunded liability)	($517.9)	($126.1)	($644.0)
Funded ratio	66.5%	86.2%	73.8%

Government share of unfunded liability	$183.4	$0.0	$183.4
Plan Sponsor share of unfunded liability	$334.5	$126.1	$460.6

Reconciliation of Financial Position

The plan's financial position, an unfunded liability of $644.0 million as at December 31, 2004, is reconciled with its previous position, an unfunded liability of $446.6 million as at December 31, 2002, as follows:

Reconciliation of Financial Position ($000,000's)

	Pre-1992	Post-1991	Total
Unfunded liability as at 12.31.2002	($395.4)	($51.2)	($446.6)
Expected interest on unfunded liability at 7.0%	($56.2)	($7.2)	($63.4)
Additional contributions	$20.8	$5.5	$26.3
Expected unfunded liability as at 12.31.2004	($430.8)	($52.9)	($483.7)
Net experience gains (losses) over 2003 – 2004[1]	($72.7)	($43.8)	($116.5)
Contributions less than cost of benefits	$0.0	($6.0)	($6.0)
Impact of new ITA limits	$0.0	($9.5)	($9.5)
Impact of assumption changes	($19.0)	($18.8)	($37.8)
Data changes and net impact of other elements of gains and losses	$4.6	$4.9	$9.5
Unfunded liability as at 12.31.2004	($517.9)	($126.1)	($644.0)

[1] Net experience gains (losses) are detailed on the following page.

Plan Experience

The net experience gains (losses) over 2003 - 2004 are detailed as follows:

Plan Experience ($000,000's)

	Assumption	Actual 2003 – 2004	Impact – Gain (Loss) Pre-1992	Post-1991	Total
Net Investment return (on actuarial value of assets)	7.00%/year	5.05%/year	($43.7)	($24.1)	($67.8)
Increases in pensionable earnings	3.00%/year + M&P	7.01%/year			
And			($11.8)	($13.0)	(24.8)
Increases in YMPE	3.50%/year	1.49%/year			
Indexation of pensions in payment	1.80%/year	2.09%/year	($6.6)	($1.2)	($7.8)
Retirements	334 rets	304 rets			
Terminations of employment	346 terms	429 terms	($10.6)	($5.5)	($16.1)
Mortality	162 deaths	77 deaths			
Net experience gains (losses)			($72.7)	($43.8)	($116.5)

Commentary

- Additional pre-1992 special payments were $20.8 million and post-1991 special payments were $5.5 million.
- The investment return net of expenses of 5.05% over 2003 and 2004 on the actuarial value of assets was less than the valuation assumption of 7.0% per annum. This lower investment return produced a loss of approximately $67.8 million. Note that the rate of return on the market value of assets was 13.14%. The smoothing methodology defers recognition of a portion of the 2003 gains to the 2005 calendar year, and a portion of 2004 gains to the 2005 and 2006 calendar years.
- Interest on member contributions in 2003 and 2004 were lower than assumed, which resulted in lower actuarial liabilities and therefore an actuarial gain. Increases in pensionable earnings were higher than assumed and increases in the YMPE were lower than assumed, both of which produce actuarial losses. The net overall impact was an actuarial loss of $24.8 million.

- The valuation at December 31, 2002 assumed a cost-of-living increase of 1.80%/year. The actual cost-of-living increase was an average of 2.09% over the inter-valuation period (3.42%/0.78%). The higher than expected cost-of-living increase produced a loss of approximately $7.8 million.

- Mortality, termination and retirement experience was less favourable than assumed, producing a net experience loss of approximately $16.1 million.

- Member and employer contribution rates in 2003 were less than the normal actuarial cost. The loss due to the shortfall in contributions was approximately $6.0 million.

- The valuation reflects the new maximum pension announced in the 2005 federal budget. The maximum will increase from $2,000 per year of service in 2005 to $2,111 per year of service in 2006, $2,222 per year of service in 2007, $2,333 per year of service in 2008, $2,444 per year of service in 2009 and thereafter at the average industrial wage base increase. This resulted in a loss to the plan of $9.5 million.

- The valuation reflects a number of assumption changes, detailed in Appendix B. The net impact of all assumption changes is a loss to the plan of $37.8 million.

- With a plan of this size, data changes between each valuation period are inevitable. At December 31, 2004, these data changes resulted in a decrease in the actuarial liabilities of approximately $10.5 million.

- The net impact of other elements of gains and losses is a loss of $1.0 million.

The above commentary outlines the major components of the gain and loss. All other experience items such as timing of events are combined into the "Net impact of other elements of gains and losses" item.

Valuation Results — Solvency Basis

The Universities Academic Pension Plan is not subject to the solvency funding requirements outlined in Alberta's *Employment Pension Plans Act*. The plan is required to disclose the solvency excess or deficiency, but no solvency special payments are required to fund any solvency deficiency that may arise.

When conducting a solvency valuation, we determine the relationship between the respective values of the plan's assets and its liabilities on a solvency basis, determined in accordance with the Alberta *Employment Pension Plans Act*. The values of the plan's assets and liabilities on a solvency basis are related to the corresponding values calculated as though the plan were wound up and settled on the valuation date.

As at December 31, 2004, the solvency ratio of the plan, being the ratio of solvency assets to solvency liabilities, is 64.0%. The plan's solvency position as at December 31, 2004, in comparison with that of the previous valuation as at December 31, 2002, is determined as follows:

Financial Position – Solvency Basis ($000,000's)

	December 31, 2004 Total	December 31, 2002 Total
Assets		
Market value of assets	$1,904.0	$1,541.4
Present value of prior service payments	$8.0	$8.0
TIAA-CREF balances	$0.9	$1.1
Wind-up expenses	($2.1)	($2.0)
Actuarial value of assets	$1,910.8	$1,548.5
Liabilities		
Actives	$1,425.7	$1,185.6
Deferreds and HODs	$100.1	$84.1
Pensioners and survivors	$1,460.1	$1,190.5
Total	$2,985.9	$2,460.2
Solvency surplus (deficiency)	($1,075.1)	($911.7)
Solvency ratio	64.0%	62.9%

The financial position as at December 31, 2004 on a solvency basis split for service pre and post January 1, 1992 is as follows:

Financial Position – Solvency Basis ($000,000's)

	December 31, 2004		
	Pre-1992	**Post-1991**	**Total**
Assets			
Market value of assets	$1,082.7	$821.3	$1,904.0
Present value of prior service payments	0.0	$8.0	$8.0
TIAA-CREF balances	$0.9	0.0	$0.9
Wind-up expenses	0.0	($2.1)	($2.1)
Actuarial value of assets	$1,083.6	$827.2	$1,910.8
Liabilities			
Actives	$592.1	$833.6	$1,425.7
Deferreds and HODs	$59.3	$40.8	$100.1
Pensioners and survivors	$1,070.9	$389.2	$1,460.1
Total	$1,722.3	$1,263.6	$2,985.9
Solvency surplus (deficiency)	($638.7)	($436.4)	($1,075.1)
Solvency ratio	62.9%	65.5%	64.0%

The solvency liabilities include the impact of the Canadian Institute of Actuaries Standard of Practice for Determining Pension Commuted Values, effective February 1, 2005.

Impact of Plan Wind Up

In our opinion, the value of the plan's assets would be less than its actuarial liabilities if the plan were to be wound up on the valuation date.

Specifically, actuarial liabilities would exceed the market value of plan assets by $1,075.1 million. This calculation includes a provision of $2.1 million for termination expenses that might be payable from the pension fund if the plan were wound up.

Part of this deficiency would be shared by the Government of Alberta in respect of pre-1992 service.

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Funding Requirements

Contribution Requirements

Contributions into the Universities Academic Pension Plan are governed by two different Acts. In Alberta, the Employment Pension Plans Act sets out the requirements for pension plans registered under the act with respect to funding current service benefits as well as past service unfunded liabilities. The federal Income Tax Act sets out the maximum tax deductible contributions to a registered pension plan.

- Current service contributions are in respect of pension benefits that will accrue in calendar years after the valuation (2005 and on). They are jointly funded by contributing members and employers.

- The *Employment Pension Plans Act* requires that any unfunded liabilities with respect to post-1991 service must be funded by special payments over a period of no more than 15 years. As this valuation has revealed an unfunded liability with respect to post-1991 service, both contributing members and employers must contribute special payments to eliminate the post-1991 unfunded liability.

- The *Employment Pension Plans Act* also sets out the funding provisions for unfunded liabilities related to pre-1992 service. The pre-1992 unfunded liability will be eliminated on or before December 31, 2043 through the payment of additional contributions by contributing members, employers, and the Government of Alberta.

Current Service Cost

The estimated value of the benefits that will accrue on behalf of the active members during 2005, in comparison with the corresponding value determined in the previous valuation as at December 31, 2002, is summarized below:

Current Service Cost ($000,000's)

	2005	2003
Current service cost	$77.3	$63.6
Covered earnings	$491.6	$415.3
Current service cost expressed as a percentage of covered earnings	15.72%	15.31%

Covered earnings includes pensionable earnings for members who have less than 35 years of service and who are younger than age 69.

An analysis of the changes in the current service cost follows:

Changes in Current Service Cost

Current service cost as at 31.12.2002	15.31%
Demographic changes	(0.09%)
Change in ITA Limits	0.20%
Changes in assumptions and methods	0.30%
Current service cost as at 31.12.2004	15.72%

Unfunded Liability Special Payments Related to Post-1991 Service

This valuation has revealed an unfunded liability of $126.1 million for service rendered after December 31, 1991. In accordance with the Employment Pensions Plans Act of Alberta, this unfunded liability must be eliminated over a period of no more than 15 years.

The following table outlines the minimum special payments that must be made to the plan to eliminate the post-1991 unfunded liability as at December 31, 2004:

Development of Post – 1991 Unfunded Liability Special Payments ($000,000's)

	Post - 1991
Unfunded liability at December 31, 2002	($51.2)
Unfunded liability payments in 2003	$0.0
Expected interest at 7.00%	($3.6)
Expected unfunded liability at December 31, 2003	($54.8)
Unfunded liability payments in 2004	$5.5
Expected interest at 7.00%	($3.6)
A) Expected unfunded liability at December 31, 2004	($52.9)
B) Actual unfunded liability at December 31, 2004	($126.1)
Additional post 1991 unfunded liability revealed at December 31, 2004 (B-A)	($73.2)

Minimum Annual Special Payments ($000,000's)

	Date Established	**Percentage of Covered Earnings**	**Annual Dollar Amount (2005)**	**Present Value of Future Special Payments**	**Last Payment**
Member special payments	Dec 31, 2002	0.63%	$3.10	$26.45	Dec 31, 2017
Employer special payments	Dec 31, 2002	0.63%	$3.10	$26.45	Dec 31, 2017
Member special payments	Dec 31, 2004	0.69%	$3.39	$36.60	Dec. 31, 2019
Employer special payments	Dec 31, 2004	0.69%	$3.39	$36.60	Dec. 31, 2019

The special payment schedule effective December 31, 2004, is calculated on the assumption that contributions commence on July 1, 2005 and are amortized over 14.5 years. The percentage of covered earnings is calculated as a level percentage of pay through to the last payment date, assuming covered earnings grow at 3.75% per year for 2 years after the valuation date and 2.75% thereafter (the assumed base salary increase before merit and promotion).

Additional Contributions Related to Pre-1992 Service

As detailed in the plan provisions and permitted by the *Employment Pension Plans Act*, the Plan's unfunded liability for service prior to January 1, 1992 will be eliminated on or before December 31, 2043 through the payment of additional contributions by members, employers, and the Government of Alberta. The additional contributions are split between the three parties, as follows:

	Percent of Total
Government	1.25% of total payroll
Members and Employers	each, 50% of remaining balance
Total	100%

As at December 31, 2004, the pre-1992 unfunded liability is $517.9 million. The following table outlines the minimum additional contributions that must be made to the plan to eliminate the pre-1992 unfunded liability as at December 31, 2004:

Minimum Annual Additional Contributions ($000,000's)

	Percentage of Covered Earnings	**Annual Dollar Amount (2005)**	**Present Value of Future Additional Contributions**	**Last Payment**
Government contributions	1.25%	$6.30	$183.40	Dec. 31, 2043
Member contributions	1.14%	$5.75	$167.25	Dec. 31, 2043
Employer contributions	1.14%	$5.75	$167.25	Dec. 31, 2043

Please note that pre-1992 additional contributions are payable as a percentage of total unannualized earnings ($485.8 million in 2004) whereas current service contributions and post-1991 unfunded liability special payments are payable as a percentage of annualized pensionable earnings.

Solvency Contributions

Under the Alberta *Employment Pension Plans Act*, the plan is exempt from solvency deficiency contributions in respect of all service.

Total Contributions

Under the *Income Tax Act*, the total contribution must be no more than (i) the current service cost, plus (ii) where an unfunded actuarial liability exists, the amount of the unfunded actuarial liability, less (iii) where there is a funding excess, the amount of the funding excess which exceeds a prescribed level.

The following table outlines the range of funding contributions that would be permitted under the *Income Tax Act,* and the *Employment Pension Plans Act* based on the valuation at December 31, 2004:

	Minimum permitted under the *Employment Pension Plans Act*	**Maximum permitted under the *Income Tax Act***
Pre-1992 unfunded liability		
▪ Government	1.25%	36.8%
▪ Members and employers	2.28%	67.1%
Post-1991 unfunded liability	2.64%	26.5%
Solvency deficiency	0.00%	0.0%
Post-1991 current service cost	15.72%	15.72%
Total		
▪ Government	1.25%	36.8%
▪ Members and employers	20.64%	109.32%

The Minimum permitted under the *Employment Pension Plans Act* column illustrates the minimum amount of funding that would be required for the period July 1, 2005 to July 1, 2006 to meet the Act's funding requirements, expressed as a percentage of pay. The Maximum permitted under the *Income Tax Act* column represents the maximum amount of funding that would be permitted under the *Income Tax Act* for the period July 1, 2005 to July 1, 2006, expressed as a percentage of pay. For this purpose, we have allocated the government and sponsor share on a pro-rata basis based on the minimum required contribution rate.

In accordance with the plan's funding policy, as outlined in the Sponsorship and Trust Agreement, the Board has approved the contribution rates outlined in the Minimum permitted under the *Employment Pension Plans Act* column.

New contribution rates in accordance with this valuation's results, in effect on July 1, 2005, equivalent to approximately 20.64% of covered pay, are shown in the following table.

Note that the employers pay matching contributions except at the Athabasca University and the Banff Centre where employers contribute 0.5% more (and members contribute 0.5% less).

	Equal Share		**Employer = Members + 1%**	
	Member	Employer	Member	Employer
Pre-1992 unfunded liability additional contributions	1.140%	1.140%	1.140%	1.140%
Post-1991 unfunded liability special payments	1.320%	1.320%	1.320%	1.320%
Current service contributions:				
% up to YMPE	6.715%	6.715%	6.215%	7.215%
% in excess of YMPE	9.115%	9.115%	8.615%	9.615%
Total contributions				
On earnings up to YMPE	9.175%	9.175%	8.675%	9.675%
On earnings in excess of YMPE up to pensionable salary cap	11.575%	11.575%	11.075%	12.075%
On earnings in excess of pensionable salary cap	1.140%	1.140%	1.140%	1.140%

Please note that pre-1992 additional contributions are payable as a percentage of total earnings whereas current service contributions and post-1991 unfunded liability special payments are payable as a percentage of pensionable earnings.

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Actuarial Cost Certificate for the Universities Academic Pension Plan

Funding Valuation As At December 31, 2004

The most recent valuation of the Universities Academic Pension Plan was conducted as at December 31, 2004 for the purpose of providing the Universities Academic Pension Board with information necessary for the funding of the pension obligations of the plan.

This actuarial valuation of the plan was conducted using membership data and financial information supplied by the Universities Academic Pension Plan and Mellon Human Resources & Investor Solutions. Various tests were performed on the data to ensure validity and reasonableness of results as well as to perform a reconciliation of results since the previous valuation as at December 31, 2002. In my opinion, the data are sufficient and reliable for the purposes of the actuarial valuation.

The actuarial cost method utilized in the valuation was the Projected Unit Credit Actuarial Cost Method. The asset valuation method is based on the market value of assets with a smoothing adjustment intended to smooth out market volatility at the valuation date. Under this method, the market values at the last two year-ends are accumulated forward with actual cash flow, and projected investment income using a benchmark rate of return of 7.0%. These projected asset values are averaged with the market value of assets at December 31, 2004, and then limited to 110% of the market value of assets. This amount is then further adjusted by the present value of outstanding prior service payments and TIAA-CREF balances, to arrive at the actuarial value of assets.

The market values and fund reconciliations were provided by the Universities Academic Pension Board and Alberta Pensions Administration. We have relied on this information in determining the actuarial value of assets at the valuation date.

In my opinion, the methods employed are appropriate for the purpose of the valuation.

The following table briefly summarizes the assumptions employed in the actuarial valuation for funding purposes:

Description	**As At December 31, 2004**
Discount rate	6.75%
Price inflation	2.75%
Salary escalation	3.75% for 2 years after the valuation date, 2.75% thereafter, plus merit and promotion scale
YMPE escalation	3.00%
Increase in *Income Tax Act* earnings limits	As per 2005 Federal Budget for 2006, 2007, 2008, 2009 and increasing 3.0% from 2009 level starting in 2010
Interest credited on member contributions	5.00%
Merit and promotion (sample rates)	
Age 20	3.25%
Age 30	3.25%
Age 40	3.00%
Age 50	1.75%
Age 60	1.00%
Retirement rates	
Age 55	10.0%
Ages 56 - 58	5.0%
Ages 59 - 64	10.0%
Ages 65 - 68	75.0%
Age 69	100.0%
Mortality	1994 Uninsured Pensioner (UP94) Projected 10 years

Description	As At December 31, 2004
Termination rates (sample rates)	Male & female
Age 20	9.0%
Age 30	9.0%
Age 40	6.0%
Age 50	3.0%
Age 55	0.0%
Percent electing deferred pension	100%
Disability incidence	None
Proportion married at retirement or death before retirement	80%
Spousal age difference	Male member: spouse 4 years younger Female member: spouse 4 years older
Cost of living increases	60% of price inflation
Actuarial cost method	Projected Unit Credit
Asset valuation method	Average Market Value Accumulation Method, capped at 110% of the market value of assets, plus the present value of prior service payments owing and TIAA-CREF balances.
Total payroll growth (for pre-1992 unfunded liability additional contributions)	6.0% for 2 years, 5.0% thereafter.

In my opinion, these assumptions are, in aggregate, appropriate for the purpose of the valuation. Nonetheless, emerging experience may differ from the assumptions, and the resulting gains or losses will be revealed in future valuations.

The results of the actuarial valuation are summarized below:

	Total ($000,000's)
Actuarial Value of Assets	$1,816.9
Actuarial Liabilities	$2,460.9
Funding excess (unfunded liability)	($644.0)

The normal cost of benefits expected to accrue in the year following the valuation date is $77.3 million or 15.72% of expected 2005 pensionable earnings.

In my opinion:

- the data upon which this valuation is based are sufficient and reliable;
- the assumptions are, in aggregate, appropriate for the purpose of establishing the financial position of the plan;
- the methods employed are appropriate for the purpose of establishing the financial position of the plan and the funding contribution requirements pursuant to the *Employment Pension Plans Act;*
- in respect of post-1991 service, the plan would be fully funded on a going-concern basis if its assets were augmented by $126.1 million. In order to comply with the provisions of the *Employment Pension Plans Act* of Alberta, the unfunded liability must be liquidated by special payments at least equal to the amounts indicated and for the periods set forth below:

Minimum Annual Special Payments ($000,000's)

	Date Established	Percentage of Covered Earnings	Annual Dollar Amount (2005)	Present Value of Future Special Payments	Last Payment
Member special payments	Dec 31, 2002	0.63%	$3.10	$26.45	Dec 31, 2017
Employer special payments	Dec 31, 2002	0.63%	$3.10	$26.45	Dec 31, 2017
Member special payments	Dec 31, 2004	0.69%	$3.39	$36.60	Dec. 31, 2019
Employer special payments	Dec 31, 2004	0.69%	$3.39	$36.60	Dec. 31, 2019

The special payment effective December 31, 2004 is calculated on the assumption that contributions commence on July 1, 2005 and are amortized over 14.5 years. The percentage of covered earnings is calculated as a level percentage of pay through to the last payment date, assuming covered earnings grow at 3.75% per year until

December 31, 2006 and 2.75% thereafter (the assumed base salary increase before merit and promotion).

- in respect of pre-1992 service, the plan would be fully funded on a going-concern basis if its assets were augmented by $517.9 million. In order to comply with the provisions of the *Employment Pension Plans Act*, the unfunded liability must be liquidated by additional contributions at least equal to the amounts indicated and for the periods set forth below:

Minimum Annual Additional Contributions ($000,000's)

	Percentage of Covered Earnings	Annual Dollar Amount (2005)	Present Value of Future Additional Contributions	Last Payment
Government	1.25%	$6.30	$183.40	Dec. 31, 2043
Member	1.14%	$5.75	$167.25	Dec. 31, 2043
Employer	1.14%	$5.75	$167.25	Dec. 31, 2043

Please note that pre-1992 additional contributions are payable as a percentage of total earnings whereas current service contributions and post-1991 unfunded liability special payments are payable as a percentage of pensionable earnings.

- the solvency ratio of the plan is 64.0%;

- the plan would be fully funded on a solvency basis if its assets were augmented by $1,075.1 million. Part of this deficiency is shared by the Government of Alberta in respect of pre-1992 service.

This report has been prepared and the opinions contained herein are given in accordance with accepted actuarial practice.

Respectfully submitted,

Brenda Prysko	Carole Richards
F.S.A., F.C.I.A.	F.S.A., F.C.I.A.
June 29, 2005	June 29, 2005
Date	Date

Appendix A

Plan Assets

Sources of Plan Asset Data

The pension fund is held in trust by the Universities Academic Pension Plan Board of Trustees and is invested in accordance with the Board's written statement of investment policies and goals.

We have relied upon the reconciliation of the change in market value as reported by the Universities Academic Pension Board for the period December 31, 2002 to December 31, 2004.

Reconciliation of Plan Assets

The pension fund transactions for the period from December 31, 2002 to December 31, 2004 are summarized as follows:

Reconciliation of Market Value of Assets ($000,000's)

	2003	2004
January 1	$1,541.4	$1,731.0
PLUS:		
Member contributions	$31.7	$41.9
Employer contributions	$31.5	$41.6
Government contributions	$5.6	$6.0
Interest, dividends and accrued income	$0.0	$0.0
Prior Service contributions	$0.9	$2.5
Net capital gains (losses)	$226.5	$200.0
	$296.2	$292.0
LESS:		
Pensions paid	$98.1	$107.6
Refund and transfer payments	$7.0	$9.8
Expenses	$1.5	$1.6
	$106.6	$119.0
December 31	$1,731.0	$1,904.0

We have tested the pensions paid, the lump-sum refunds and the contributions for consistency with the membership data for the plan members who have received benefits or made contributions. The results of these tests were satisfactory.

The plan's assets are invested primarily in pooled funds, as shown below:

	($000's)
Fixed Income Securities	
Deposit in the Consolidated Cash Investment Fund	$12,192
Canadian Dollar Long Bond Pool	$324,998
Real Rate of Return Bonds	$249,192
Total fixed income securities	$586,382
Canadian Equities	
Domestic Passive Equity Pooled Fund	$193,021
External Managers	
Canadian Large Cap Equity Pool	$152,789
Canadian Small Cap Equity Pool	$41,034
Private Equity Pool	$1,995
Canadian Pooled Equities Fund	$ -
	$388,839
United States Equities	
US Passive Equity Pooled Fund	$265,422
External Managers	
US Small/Mid Cap Equity Pool	$57,407
US Large Cap Equity Pool	$40,243
S&P 500 Pooled Index Fund	$3,167
	$366,239
Non-North American Equities	
External Managers	
EAFE Core Equity Pool	$219,023
EAFE Plus Equity Pool	$102,273
Emerging Markets Equity Pool	$62,129
EAFE Passive Equity Pool	$7,466
EAFE Structured Equity Pooled Fund	$101,779
Private Income Pool	$15,681
Private Real Estate Pool	$45,519
	$492,670
Total equities	$1,308,948
Accrued income, accounts receivable	$299
Contributions receivable	$8,392
Total investments	$1,904,021

Investment Policy

The Board has adopted a statement of investment policy and objectives. This policy is intended to provide guidelines for the manager(s) as to the level of risk which is commensurate with the plan's investment objectives. A significant component of this investment policy is the asset mix.

The Board has reviewed the funding requirements of the Plan and after taking into account the expected risk and return associated with the various asset classes, has established the following long-term benchmark portfolio and allowable range of weights for asset classes within the portfolio.

Asset Class	Benchmark Portfolio	Benchmark Weight	Allowed Range (Percent of Market Value)
Total Fixed Income		**35%**	**32-38**
Cash and Short term	Scotia Capital Markets 91 Day T-bill Index	2%	0-5
Long Duration Bonds	Scotia Capital Markets Long Bond Index	18%	15-21
Real Rate of Return Bonds	Scotia Capital Markets Real Return Index	15%	12-18
Total Equity		**65%**	**62-68**
Canadian Equity	S&P/TSX (Capped Index)	20%	17-23
Foreign Equities			
US	S&P 500 Index	20%	17-23
International	Morgan Stanley Europe and Far East Index	22%	19-25
Emerging Markets	Morgan Stanley Emerging Markets Index	3%	2-4

Appendix B

Actuarial Methods and Assumptions

Actuarial Valuations Methods — Going-Concern Basis

Valuation of Assets

The Board has adopted an asset valuation method, which we refer to in this report as the Average Market Value Accumulation Method. Under this method, the market values at the last two year-ends are accumulated forward with actual cash flow, and projected investment income using a benchmark rate of return of 7.0%. These projected asset values are averaged with the market value of assets at December 31, 2004, and then limited to 110% of the market value of assets. This amount is further adjusted by the present value of outstanding prior service payments and TIAA-CREF balances, to arrive at the actuarial value of assets. The smoothing adjustment is equal to the difference between the actuarial value of assets, and the market value of assets adjusted for outstanding prior service payments. Essentially, this method is smoothing gains or losses above or below 7.0% over a three-year period (adjusted for interest to the date of valuation).

At the end of 2004, the smoothing reserve resulted in an actuarial value of assets less than the market value of assets adjusted for outstanding items, by $96.0 million. Generally speaking, consecutive years of investment losses (returns below the benchmark) will result in an actuarial value of assets exceeding the market value, since losses are deferred. Similarly, consecutive years of investment gains (returns above the benchmark) will result in the market value of assets exceeding the actuarial value of assets, since gains are deferred.

The actuarial value of the assets, determined as at December 31, 2004 under the adjusted market value method, is $1,816.9 million.

This value was derived as follows:

Actuarial Value of Assets as at December 31, 2004

		December 31, 2004		
		Pre-1992	**Post-1991**	**Total**
	Market Value at December 31, 2002	$984.8	$556.6	$1,541.4
	2003 Contributions	$6.6	$63.1	$69.7
	2003 Benefit payments and expenses	($85.3)	($21.3)	($106.6)
	2003 Benchmark interest at 7.0%	$66.2	$40.4	$106.6
	Projected Market Value at December 31, 2003	$972.3	$638.8	$1,611.1
	2004 Contributions	$15.0	$77.0	$92.0
	2004 Benefit payments and expenses	($93.1)	($25.9)	($119.0)
	2004 Benchmark interest at 7.0%	$65.3	$46.5	$111.8
A	Projected Market Value at December 31, 2004	$959.5	$736.4	$1,695.9
	Market Value at December 31, 2003	$1,046.7	$684.3	$1,731.0
	2004 Contributions	$15.0	$77.0	$92.0
	2004 Benefit payments and expenses	($93.1)	($25.9)	($119.0)
	2004 Benchmark interest at 7.0%	$70.5	$49.7	$120.2
B	Projected Market Value at December 31, 2004	$1,039.1	$785.1	$1,824.2
C	Market Value at December 31, 2004	$1,082.7	$821.3	$1,904.0
	Actuarial Asset Value at December 31, 2004			
	Average market value (A, B, C) capped at 110% of market value	$1,027.1	$780.9	$1,808.0
	Present value of prior service payments	$0.0	$8.0	$8.0
	TIAA-CREF balances	$0.9	$0.0	$0.9
	Actuarial Value of Assets at December 31, 2004	$1,028.0	$788.9	$1,816.9

On an actuarial value basis, the net rate of return (net of all expenses) for the fund in 2003 and 2004 was 5.05% and on a market value basis, the net rate of return (net of all expenses) for the fund in 2003 and 2004 was 13.14%.

Valuation of Actuarial Liabilities

Over time, the real cost of a pension plan is the excess of benefits and expenses over member contributions and investment earnings. The actuarial cost method allocates this cost to annual time periods.

For purposes of the going-concern valuation, we have continued to use the *projected unit credit actuarial cost method*. Under this method, we determine the actuarial present value of benefits accrued in respect of service prior to the valuation date, including ancillary benefits, based on projected final average earnings. This is referred to as the *actuarial liability*. For each individual plan member, accumulated contributions with interest are established as a minimum actuarial liability.

The *funding excess* or *unfunded liability*, as the case may be, is the difference between the actuarial value of assets and the actuarial liability. For post-1991 service, an unfunded liability will be amortised over no more than 15 years through special payments as required under the *Employment Pension Plans Act*. A funding excess may, from an actuarial standpoint, be applied immediately to reduce required current service contributions unless precluded by the terms of the Plan or by legislation.

This actuarial funding method produces a reasonable matching of contributions with accruing benefits. Because benefits are recognised as they accrue, the actuarial funding method aims at keeping the plan fully funded at all times. This promotes benefit security, once any unfunded liabilities and solvency deficiencies have been funded.

Current Service Cost

The *current service cost* is the actuarial present value of projected benefits to be paid under the plan with respect to service during the year following the valuation date.

The current service cost has been expressed as a percentage of the members' covered pay to provide an automatic adjustment in the event of fluctuations in membership and/or pensionable earnings.

Under the projected unit credit actuarial cost method, the current service cost for an individual member will increase each year as the member approaches retirement. However, the current service cost of the entire group, expressed as a percentage of the members' covered pay, can be expected to remain stable as long as the average age of the group remains constant.

Contributions

Accordingly, the contributions for this purpose, with respect to post 1991 service, are determined as follows:

Contributions

With a funding excess	With an unfunded liability
Current service cost	Current service cost
MINUS	PLUS
Any funding excess applied to cover the current service cost	Payments to amortise any unfunded liability

As detailed in the *Employment Pension Plans Act*, the Plan's unfunded liability for service prior to January 1, 1992 will be eliminated on or before December 31, 2043 through the payment of additional contributions.

Actuarial Assumptions — Going-Concern Basis

The actuarial value of benefits is based on economic and demographic assumptions. At each valuation, we determine whether, in our opinion, the actuarial assumptions are still appropriate for the purposes of the valuation, and we revise them if necessary.

In this valuation, we have used the same assumptions as in the previous valuation except as noted. Emerging experience will result in gains or losses that will be revealed and considered in future actuarial valuations. For this valuation, we have used the following assumptions:

Actuarial Assumptions – Going-Concern Basis

Description	As at December 31, 2004
Price Inflation	2.75%
Ultimate real rate of return	4.00%
Nominal discount rate	6.75%
Real wage increase	0.25%

Description	As at December 31, 2004
Salary escalation	3.75% per annum for 2 years after the valuation date, 2.75% per annum thereafter, plus merit and promotion
Increase of *Income Tax Act* earnings limits	2005: $2,000 per year of service
	2006: $2,111 per year of service
	2007: $2,222 per year of service
	2008: $2,333 per year of service
	2009: $2,444 per year of service
	increasing at 3.0% per annum thereafter
YMPE escalation	3.00% per annum
Retirement rates	Based on plan experience from 1988-1993
Mortality	UP94 projected 10 years
Termination rates	Based on plan experience from 1988-1993
Disability rates	None
Merit and promotion	Based on plan experience from 1985-1993
Spouse age	Males = Females + 4 years
Proportion married at retirement or death	80%
Actuarial Cost Method	Projected Unit Credit
Asset Valuation Method	Smoothed method (capped at 110% of market)
Percent Electing Deferred Pension	100%

Economic Assumptions

Level of Price Inflation

The level of price inflation directly influences benefits provided by the plan by the application of the cost-of-living increases. It is also useful in developing a coherent set of economic assumptions by relating several of the individual assumptions to an assumed long term level of underlying price inflation.

For this valuation, we have used a rate of 2.75%. The previous valuation assumed 3.00%.

Consequently, pensions in payment and deferred pensions are assumed to increase annually at the rate of 1.65%.

Discount Rate

Since benefits promised by the plan will be paid out over a period of time in the future, it is necessary to make an assumption as to the rate of investment return the Fund will realize over the period of its existence. Having regard to the very long term nature of the plan's liabilities, while recognizing current rates available in the financial markets, we have assumed that the investment return on the actuarial value of the fund, net of investment expenses charged to the fund, will average 6.75% per year over the long term.

This is based on an assumed inflation rate of 2.75% per year plus a real rate of return of 4.00% per year. This assumed real rate of return is consistent with the plan's investment policy.

If the Fund achieves higher investment returns than assumed, gains will be revealed at subsequent valuations. If the Fund achieves lower investment returns, losses will emerge.

The previous valuation assumed the investment return on the actuarial value of the fund, net of investment expenses, will average 7.00% over the long term.

Real Wage Increases

The benefits provided by the plan are affected by individual wage increases and the YMPE under the Canada Pension Plan. For this valuation, salaries and the YMPE are assumed to increase with price inflation plus average real wage increases in Canada for overall productivity gains.

In this valuation, we have utilized a real wage increase assumption of 0.25% per annum. This assumption has changed from the previous valuation which assumed a real wage increase of 0.5% per annum.

Increases in Pensionable Earnings

The benefits ultimately paid will depend on each member's final average earnings. To calculate the pension benefits payable upon retirement, death or termination of employment, we have taken 2004 earnings and assumed that such pensionable earnings will increase at 3.75% for the first 2 years after the valuation date, and 2.75% thereafter, plus merit and promotion. Individual salary increases can generally be considered to result from general economic conditions, plus non-economic factors such as merit and promotion.

To the extent that salaries increase by greater than assumed rates, losses will accrue in the plan's funding. Gains will emerge if salaries increase at a lower rate than assumed.

The previous valuation assumed pensionable earnings would increase at 3.0% per year, plus merit and promotion.

Increases in the YMPE

Since the benefits provided by the plan depend on the final average Year's Maximum Pensionable Earnings (YMPE) under the Canada Pension Plan, it is necessary to make an assumption about increases in the YMPE for this valuation. We have assumed that the YMPE will increase at the rate of 3.0% per year from its 2005 level of $41,100.

This is based on:

- an assumed inflation rate of 2.75% per year and,
- an assumed productivity component of 0.25% per year.

The previous valuation assumed YMPE would increase at a rate of 3.5% per year.

Increases in the Maximum Pensionable Earnings

According to the plan's provisions in the previous valuation, pensionable salaries for 1992 and 1993 service are limited to $86,111 (indexed) and pensionable salaries for service after January 1, 1994 are limited to $86,111 (indexed) plus 30% of the YMPE. As per Bill C-28 which enacted changes to the maximum pension payable from a registered pension plan, the $86,111 was increased to $91,666.50 in 2004 and to $100,000 in 2005. Thereafter, we have assumed that the limits will increase as per the 2005 Federal Budget, with a projected 3.00% increase from 2010 forward ($2,444 per year of service in 2009, indexed at 3.0% thereafter).

The previous valuation assumed the maximum pension payable from a registered pension plan would increase in 2005 at 3.5% per annum.

Interest Credited on Member Required Contributions

For this valuation, we have made no changes to the assumed interest rate to be credited on member-required contributions. It will represent, on average, 5.00% per annum, over the long term.

Total Payroll Growth

For purposes of calculating the actuarial present value of pre-1992 unfunded liability additional contributions over the period to December 31, 2043, we have assumed total payroll will grow at 6.0% for 2 years after the valuation date, and 5.0% thereafter. The previous valuation assumed total payroll growth of 5.25% per year.

Demographic Assumptions

Merit and Promotion

The following rates varying by age and derived from the experience of the Universities Academic Pension Plan for years 1985 to 1993 were used for this valuation and the previous valuation.

Age	Merit & promotion Sample rates
20	3.25%
30	3.25%
40	3.00%
50	1.75%
60	1.00%

Retirement Age

Age at retirement is an important consideration for this plan because of the plan design that encourages early retirement. The younger the members are at retirement, the greater the cost to the plan of a given member's pension.

For this valuation and the previous valuation, the retirement rates are based on a study of the plan's experience for years 1988 to 1993 and are outlined below.

Age	Rate of retirement
55	10.0%
56	5.0%
57	5.0%
58	5.0%
59	10.0%
60	10.0%
61	10.0%
62	10.0%
63	10.0%
64	10.0%
65	75.0%
66	75.0%
67	75.0%
68	75.0%
69	100.0%

Termination of Employment

We have made an allowance for projected benefits payable on the termination of employment before retirement for reasons other than death.

We have used termination rates that were derived from the Universities Academic Pension Plan experience for years 1988 to 1993. These rates have not changed since the previous valuation.

Sample rates are shown in the following table:

Age	Sample termination rates Males & females
20	9.0%
25	9.0%
30	9.0%
35	7.5%
40	6.0%
45	3.0%
50	3.0%
55	0.0%

Mortality

The rates of mortality assumed in a valuation serve two purposes: firstly, to determine what portion of the current membership will survive to retirement age, and secondly, to forecast the remaining lifetime of members once they reach retirement.

For this valuation and the previous valuation, we have assumed mortality rates, both before and after retirement, in accordance with the Uninsured Pensioner Table for 1994 (UP94) projected for 10 years at Scale AA for both active and retired members. The resulting rates for sample ages are illustrated below.

Annual Rates per 1000 Members

	1994 Uninsured Pensioner Table Projected 10 Years	
Age	**Male**	**Female**
25	0.6	0.3
30	0.8	0.4
35	0.9	0.5
40	1.1	0.7
45	1.5	0.9
50	2.3	1.3
55	3.9	2.3
60	7.3	4.5
65	13.6	8.8
70	21.9	14.0
75	34.8	22.5
80	60.3	39.4
85	97.5	68.6
90	158.0	121.3
95	248.7	198.2
100	341.1	297.2

Disability

Based on the number of members in approved LTD plans and the small number of disability claims experienced by the plan, we believe it is appropriate to ignore the contingency of disability as being immaterial.

Percent Electing Deferred Pension

100% of vested terminated members are assumed to elect a deferred pension.

Proportion Married and Age of Spouse

Because the plan provides benefits to the spouse of a member in certain circumstances, it is necessary to make assumptions as to the likelihood of a member having a spouse.

For this valuation, we have assumed that 80% of members will have a spouse at retirement or death.

Male spouses have been assumed to be four years older than the female spouse.

Other Methodologies

We have prepared a list of additional assumptions and methods used in the valuation of the plan. This list is intended to assist users of this report in understanding the specific benefits valued. Small differences in methods and assumptions in a plan of this size can sometimes have effects in the millions of dollars.

- it is assumed that indexation of deferred and immediate pensions commences 1 year after termination or retirement;

- coordinated options for retired members have the entire pension indexed if retired prior to January 1, 1985 and the base indexed for all others;

- current service and post-1991 unfunded liability contributions are based on pensionable salary, and additional contributions are based on total salary;

- the present value of additional contributions is calculated assuming total payroll grows at the rates indicated in the report and that the total contribution remains at 3.53% of pay for the entire period ending December 31, 2043;

- the current service cost includes refunds of additional contributions for non-vested members;

- the pensionable salary for calculating the normal cost percentage is nil for members over age 69 and nil for members with more than 35 years of service;

- advance pensioners were valued as J&S 66.67% for married members and G10 for single members in regards to post-1991 service and G10 for pre-1992 service, and the administrative 90% adjustment has been removed;

- for deferred benefits on termination or death (post-1991 service), the pensions were deferred to age 55 with the early reduction in accordance with the plan.

Actuarial Valuation Methods and Assumptions — Solvency Basis

We have used the market value of the plan's assets in our valuation of the plan for solvency purposes.

To determine the solvency actuarial liability, we have valued those benefits that would have been paid had the plan been wound up on the valuation date, with all members fully vested in their accrued benefits.

We have considered that members under 55 years of age on that date would be entitled to a deferred pension payable from age 55, reduced in accordance with the plan's early retirement provisions. Members aged 55 and over are entitled to an immediate pension, reduced in accordance with the plan's early retirement provisions. For each individual plan member, accumulated contributions with interest plus 50% of the present value of the accrued pension are established as a minimum actuarial liability (or member and employer contributions if greater, for pre - 1992 service; and 175% of member contributions if greater, for post – 1991 service).

Benefits are assumed to be settled through a lump sum transfer for active and deferred members under the age of 55. The value of the benefits accrued on December 31, 2004 for such members is based on the assumptions described in the Standard of Practice for Determining Pension Commuted Values (effective February 1, 2005)[2] of the Canadian Institute of Actuaries applicable for December 31, 2004, for benefits expected to be settled through transfer in accordance with relevant portability requirements.

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[2] Since solvency liabilities are for disclosure purposes only, we have prepared solvency liabilities using the most current CIA Standards of Practice.

Benefits are assumed to be settled through the purchase of annuities for active and deferred members over the age of 55 and all pensioners and beneficiaries. The value of the benefits accrued on December 31, 2004, for such members, is based on an estimate of the cost of settlement through purchase of annuities. Assumptions are as follows:

Actuarial Assumptions

Mortality rates	UP94 projected to 2015
Interest rates for benefits to be settled through lump sum transfer	4.75% per year for the first 10 years following 31.12.2004, 6.0% per year thereafter
Interest rates for benefits to be settled through annuity purchase	5.25% per year
Cost of living increases	1.45% per year for the first 10 years following 31.12.2004, 1.68% per year thereafter
Family composition	Same as for going-concern valuation
Termination expenses	$2.1 million

In a solvency valuation, the accrued benefits are based on the member's final average earnings on the valuation date; therefore no salary projection is used. Also, the employment of each member is assumed to have terminated on the valuation date, therefore, no assumption is required for future rates of termination of employment.

In determining the estimated termination expenses, we have assumed that the plan sponsors are solvent.

Appendix C

Membership Data

Analysis of Membership Data

The actuarial valuation is based on membership data as at December 31, 2004, provided by the Universities Academic Pension Plan and Mellon Human Resources & Investor Solutions. This data included dates of birth, gender, full/part-time status, service ratio, pensionable current service, prior bought service, prior service being bought and reciprocal service. Service fields were split for pre-1992, mid (1992 and 1993) and post-1993 service. Pensionable salary (non-annualized) and in-year service were also provided. Contribution information was also provided, split by members/employer and pre, mid and post service.

We have applied tests for internal consistency, as well as for consistency with the data used for the previous valuation. These tests were applied to membership reconciliation, basic information (date of birth, date of hire, date of membership, gender, etc.), pensionable earnings, credited service, contributions accumulated with interest and pensions to retirees and other members entitled to a deferred pension. Contributions, lump sum payments and pensions to retirees were compared with corresponding amounts reported in financial statements. Any outstanding questions were sent to the Universities Academic Pension Board and adjustments were made according to the responses received.

Despite these numerous tests, where data was still unreliable or unavailable, assumptions were required to complete the data. These assumptions are summarized below:

Description	Assumption
Annualization of Pensionable Salary	Since the data provided did not include annualized salary, earnings were annualized using actual earnings and in-year service for each year.
Service Ratios for Part-Timers	If the service ratio was blank, we assumed a service ratio of 1.0.
Missing Earnings Information	Data was available for prior years and that data was utilitized.
Tracking of Individual Payments	Due to the nature of the financial information, it was not possible to trace the refunds individually for every terminating member. We have relied on the outstanding receivables provided to us by the staff of the Universities Academic Pension Plan.
Pension Data for Deferred Vested Members	Deferred pension amounts were provided by UAPP. This pension included the actual cost-of-living increases granted from the date of calculation to January 1, 2005.
Pension splits pre-1992 and post-1991 service	Pensioner data provided did not include a breakdown of pension earned in respect of pre-1992 service and post-1991 service. We used information from our December 31, 2002 valuation data file to allocate between pre and post service, where applicable. For new pensioners UAPP provided us with a pre/post split on the normal form pension. We pro-rated the optional pension elected in the same proportion as the normal form splits provided.

Plan membership data are summarized below. For comparison, we have also summarized corresponding data from the previous valuation.

Membership Data

	01.01.2005	01.01.2003
Active Members		
▪ Number	5,915	5,510
▪ Total expected annualized pensionable earnings	$501,588,969[3]	$426,917,309
▪ Total expected 2005 pensionable earnings for members with a current service cost	$491,633,976	N/A
▪ Total expected 2005 unannualized unlimited earnings	$485,800,000	N/A
▪ Average expected annualized pensionable earnings	$84,799	$77,480
▪ Average years of pensionable service	10.3 years	10.8 years
▪ Average age	47.5 years	47.3 years
Deferred Pensioners		
▪ Number	524	409
▪ Total annual pension	$6,355,072	$5,730,485
▪ Average annual pension	$12,128	$14,011
▪ Average age	48.5 years	49.8 years
Hold-on-Deposits		
▪ Number	284	259
▪ Average contributions with interest	$8,556	$9,479
▪ Average age	47.2 years	46.3 years
Pensioners, Survivors, and Disabled Members[4]		
▪ Number	2,902	2,578
▪ Total annual lifetime pension	$111,715,392	$95,600,556
▪ Average annual lifetime pension	$38,496	$37,083
▪ Average age	70.1 years	69.4 years

[3] Expected annualized 2005 pensionable earnings

[4] Pensions at January 1, 2005 include January 1, 2005 COLA

The membership movement for all categories of membership since the previous actuarial valuation is as follows:

Membership Reconciliation

	Actives	Pensioners, Survivors, and Disabled	Deferred and HODs	Total
Number at December 31, 2002	5,510	2,578	668	8,756
Adjustments	14	4	6	24
New entrants	1,249	-	-	1,249
Retirements	(305)	343	(38)	-
Terminations of employment and deaths of active/deferreds				
- Deferred pensions and HODS	(233)	-	233	-
- Refunds and lump sum payments	(290)	-	(63)	(353)
Deaths	(30)	(47)	2	(75)
Expiry of Guarantee	-	(2)	-	(2)
New survivor pensions	-	26	-	26
Number at December 31, 2004	5,915	2,902	808	9,625

The distribution of the active members by age and pensionable service (and including 2004 annualized earnings) as at December 31, 2004, is summarized as follows:

Distribution of Active Members as of December 31, 2004

Age Group	Service Group									
	0-4	**5-9**	**10-14**	**15-19**	**20-24**	**25-29**	**30-34**	**35-39**	**40+**	**Total**
										# Average Earnings
Under 20										
20 - 24	4									4
	$35,929									$35,929
25 - 29	90	2								92
	$56,126	$61,567								$56,244
30 - 34	374	50								424
	$65,596	$72,739								$66,439
35 - 39	550	234	14							798
	$69,822	$78,836	$83,160							$72,699
40 - 44	477	344	111	43	2					977
	$71,325	$83,051	$93,638	$92,909	$91,576					$78,980
45 - 49	367	272	170	167	42	4				1,022
	$75,069	$85,162	$91,199	$97,674	$96,804	$95,612				$85,105
50 - 54	296	188	125	227	180	80	12			1,109
	$77,721	$85,176	$90,282	$100,330	$101,186	$97,254	$99,538			$90,476
55 - 59	157	114	76	109	130	165	82	9		842
	$76,919	$87,146	$92,860	$96,898	$102,693	$106,078	$105,494	$103,793		$95,092
60 - 64	62	46	33	44	78	88	122	61	2	536
	$81,576	$86,509	$90,930	$101,200	$104,017	$106,159	$109,101	$107,986	$112,330	$100,873
65 - 69	9	6		5	10	11	22	42	4	110
	$75,968	$83,595		$98,077	$107,126	$107,307	$106,979	$108,809	$100,215	$103,271
Total	2,386	1,256	530	595	443	348	238	113	6	5,915
	$71,469	$83,097	$91,534	$98,465	$101,827	$103,989	$107,180	$107,629	$104,253	$84,799

Total 2005 pensionable earnings: $501,588,969
Average age: 47.51
Average pensionable service: 10.25
Average 2005 annualized pensionable earnings: $84,799

* Cells with fewer than 2 members have been suppressed in order to preserve confidentiality.

The distribution of the inactive members by age and average annual pension (including January 1, 2005 COLA) as at December 31, 2004, is summarized as follows:

Distribution of Inactive Members by Age Group as of December 31, 2004

	Deferred Pensioners		Pensioners and Survivors	
Age	**Number**	**Average Annual Pension**	**Number**	**Average Annual Pension**
25 – 29	7	$870	1	*
30 – 34	25	$2,148	3	*
35 – 39	60	$2,452	3	*
40 – 44	71	$4,371	5	$21,444
45 – 49	102	$7,010	11	$16,476
50 – 54	123	$13,486	9	$18,384
55 – 59	88	$21,910	232	$32,748
60 – 64	42	$30,920	545	$39,120
65 – 69	5	$46,276	745	$42,204
70 – 74	1	*	559	$39,792
75 – 79			419	$38,676
80 – 84			248	$36,804
85 – 89			91	$28,224
90 – 94			27	$18,984
95 – 99			4	$16,500
Total	**524**	**$12,128**	**2,902**	**$38,496**

* Cells with fewer than 3 members have been suppressed in order to preserve confidentiality.

Appendix D

Summary of Plan Provisions

Introduction

This valuation is based on the plan provisions in effect on December 31, 2004. The following is a summary of the plan's main provisions in effect on December 31, 2004. It is not intended as a complete description of the plan.

Prior to 1993, the Universities Academic Pension Plans Act provided for the payment of pension and related ancillary benefits to eligible participants. In 1993, *the Public Sector Pension Plans Act* covering six public sector pension plans (including the Universities Academic Pension Plan) was passed.

The Universities Academic Pension Plan ceased to be a statutory plan governed by the *Public Sector Pension Plans Act* on December 31, 2000 and was continued on January 1, 2001 as a pension plan registered under the *Employment Pension Plans Act*.

Eligibility for Membership

Eligible participants include full-time and part-time employees who meet criteria specified in the Plan.

Pensionable Service

Pensionable service, as defined under the provisions of the Plan, shall not exceed 35 years. Combined pensionable service (service in the Universities Academic Pension Plan plus pensionable service in the Public Service Pension Plan) is used to determine eligibility for benefits, vesting and determination of highest average salary.

Contributions

Members and employers are required to make contributions to the plan in order to meet the funding and solvency requirements of the *Employment Pension Plans Act*.

Credited Interest

Prior to January 1, 1994, members' contributions were accumulated at the rate of 4% per annum, compounded semi-annually. Effective January 1, 1994, the rate of interest credited to members' contributions will be the average yield of five year personal fixed term chartered bank deposits (CANSIM series B14045) over the most recent 12 month period, calculated as of the first day of the calendar year.

Vesting

In respect of members who will accrue service on or after January 1, 2001, benefits for all service are vested on the completion of two years of continuous plan membership. Benefits for members who terminated prior to January 1, 2001 are vested on the completion of five years of pensionable service.

Retirement Dates

Normal Retirement Date

The normal retirement age is age 65.

Early Retirement Date

Members are eligible to retire if they have attained age 55 and are vested.

Retirement Benefits

Normal Retirement

1) The annual pension payable at retirement for service prior to January 1, 1994 is determined as follows:

   - 2.0% of highest average pensionable salary, multiplied by pensionable service prior to January 1, 1994.

2) The annual pension payable at retirement for service after December 31, 1993 is determined as follows:

   - 1.4% of the lesser of the highest average pensionable salary and the average YMPE; plus

   - 2.0% of the excess of the highest average pensionable salary over the average YMPE, if any; plus

   - a bridge benefit of 0.6% of the lesser of the highest average pensionable salary and the average of YMPE, payable to age 65,

   all multiplied by pensionable service after December 31, 1993.

Highest average pensionable salary is the member's average pensionable salary in the five consecutive years of combined pensionable service in which such average is the highest.

Average YMPE is the average of the Year's Maximum Pensionable Earnings in the years used in calculating the member's highest average pensionable salary.

Pensionable salary for service in 1992 and 1993 will be limited to $100,000 in 2005. Pensionable salary for service after December 31, 1993 will be limited to $100,000 plus 30% of the YMPE for each year. The $100,000 limit will increase in accordance with the announced changes to the provisions of the *Income Tax Act*.

Early Retirement Pension

For service after December 31, 1993, if the member is 55 and over and has accrued 80 points (i.e., age plus combined pensionable service totals 80 or more) or the member has reached age 60 and is vested, no reduction is applied. Otherwise, the normal retirement pension is reduced by 3% for each year that the member's early retirement age precedes the earlier of age 60 and the age at which 80 points would be reached (based on combined pensionable service to the date of termination).

Benefits on Disability

If the member is not receiving benefits from an LTD plan, the member is permanently and totally disabled, and the member is vested, the member is entitled to an immediate unreduced pension based on pensionable service and salary to the date of the disability. If the member is partially disabled, the pension is reduced in accordance with the Plan.

If the Member is receiving benefits from an LTD plan, participation in this Plan continues, but no pension is payable concurrently with the LTD benefit. For the purpose of determining contributions and benefits, pensionable salary will be the pensionable salary immediately preceding disability, increased by subsequent general wage increases applicable for that member's class.

Survivor Benefits

Death After Retirement

Post-December 31, 1993

If the member does not have a spouse at retirement, the normal form pension is a pension guaranteed for ten years. If the member dies before 120 monthly payments are made, the balance of the 120 payments are payable to the member's spouse or beneficiary.

If the member has a spouse at retirement, the normal form pension is a single life 2/3 (single life with 2/3 continuing to the spouse). If the member dies and the spouse is still alive, the spouse receives a pension for life that is equal to 2/3 of the pension that would have been payable to the pensioner had he continued to live.

Optional forms of pension are available on an actuarially equivalent basis.

Pre-January 1, 1994

The normal form pension is a pension guaranteed for fifteen years. If the member dies before 180 monthly payments are made, the balance of the 180 payments are payable to the member's spouse or beneficiary.

Optional forms of pension are available on an actuarially equivalent basis.

Death Prior to Retirement

Pre-1994 Service	Benefit
No Spouse	
- Vested	- Transfer of 100% of commuted value plus excess contributions; or - Refund of Member and Employer contributions with interest.
- Not Vested	- Refund of Member contributions with interest.
Spouse	
- Vested	- A pension for life determined as though the member had retired on the day before death and elected a J&S 100% optional form pension; or, - Refund of Member and Employer contributions with interest.
- Not Vested	- Refund of Member contributions with interest.

Post-1993 Service	Benefit
No Spouse	
- Not Vested	- Refund of Member contributions with interest.
- Vested	- 100% of commuted value plus excess contributions; or - 175% of Member contributions with interest.
Spouse	
- Not Vested	- Refund of Member contributions with interest.
- Vested	- A pension for life determined as though the member had retired on the day before death and elected a J&S 100% optional form pension, plus excess contributions; or - Transfer of 100% of commuted value plus excess contributions; or - Transfer of 175% of Member contributions with interest.

Termination Benefits

If a member's employment terminates for reasons other than death or retirement, the benefits payable from the plan will depend on the member's length of plan membership, as follows:

Benefits in the Event of Termination of Employment

Pre- 1994 Service	Benefit
- Not Vested	- Transfer of Member and Employer contributions with interest or refund of Member contributions with interest
- Vested	- Deferred pension; or - Refund or transfer of 100% of commuted value plus excess contributions; or - Refund or transfer of Member and Employer contributions with interest.

Post-1993 Service	Benefit
- Not Vested	- Refund of Member contributions with interest
- Vested	- Deferred pension; or - Transfer of 100% commuted value plus excess contributions; or - Transfer of 175% of Member contributions with interest.

Cost-of-Living Increases

Cost-of-living increases based on 60% of the Alberta CPI apply to both deferred pensions and pensions in payment.

Appendix E

Universities Academic Pension Plan Certification

With respect to the report on the actuarial valuation of the *Universities Academic Pension Plan*, as at December 31, 2004, on behalf of the Board of Trustees, I hereby certify that, to the best of my knowledge and belief:

- a copy of the official plan documents and of all amendments made up to December 31, 2004 that I am aware of, were provided to the actuary;
- the membership data provided to the actuary include a complete and accurate description of every person who is entitled to benefits under the terms of the plan for service up to December 31, 2004, and
- all events that I am aware of subsequent to December 31, 2004, which I believe would have a material impact on the results of the valuation have been communicated to the actuary.

June 10, 2005.

Date

D. Taylor

Signed

DAVID TAYLOR.

Name

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