

Contemplation of Position Retrenchment

Program: **Chemistry**

January 2011

Program Summary

Completion of the B.S. degree (67-69 credits) in Chemistry prepares a student for employment as a practicing laboratory chemist in a wide variety of industrial, educational, and governmental enterprises. The B.S. degree in Chemistry with Chemistry Education requires 31-33 credits. Completion of the B.A. degree (31-33) in Chemistry prepares a student to seek a career in areas in which a knowledge of matter, energy, and their transformation is important including the chemical, food, health, environmental, and energy industries. Students frequently combine the B.A. degree with a second major such as biology, mathematics, physics or business administration and management. The B.A. degree in Chemistry with environmental emphasis requires 35-37 credits.

Faculty

The Chemistry Program currently has three tenured and one probationary faculty members. Each of the faculty members possesses a terminal degree in Chemistry.

This proposed program change includes the retrenchment of one faculty member; the program would be retained.

Statistical Profile / Synopsis

The attached documents include: Instructional Cost Study data, five-year enrollments, number of majors by department, degrees awarded, College Now data, Liberal Arts Curriculum (LAC) numbers, faculty salaries without summer session, and re-assigned time.

Chemistry has 39 declared majors (FY10); this is a decline from 42 in FY 06. Chemistry granted 4 B.A. degrees and 2 B.S. degrees in 2006. No B.S. degrees in Chemistry Education were awarded in that year. In 2010, Chemistry granted 8 B.A. degrees, 1 B.S., and 2 B.S. degrees in Chemistry Education. In 2010, Chemistry had 3 courses in the Liberal Arts Curriculum, 2 courses in College Now, and a student FYE of 127.2 for the fiscal year. Of that total, 47.4 FYE was derived from College Now. Total headcount in Chemistry courses in academic year 2006 was 1312; in 2011 the number was 911.

Per the Instructional Cost Study, the cost of lower-division instruction in the Program has risen from \$1,937 per FYE in FY 06 (the MnSCU System average was \$2,027) to \$3,110 in FY 09 (the System average was \$2,163; these figures do not include College Now). Over the same period, the total loss in the allocation model funding for the Program in lower-division courses rose from 0 to \$40,042.

Upper-division courses in Chemistry rose from a cost of \$4,844 per FYE in FY 06 (the MnSCU System average was \$3,207) to \$6,876 in FY 09 (the System average was \$3,429; again, these figures do not include College Now). Over the same period, the total loss in the allocation model funding for the Program in upper-division courses rose from \$21,416 to \$47,493. When factoring in College Now the total funding loss in the allocation model is still \$28,318 in FY09.

Relevant System Data

Bemidji State, Mankato State, Moorhead State, St. Cloud State, and Winona State all offer four-year degrees in Chemistry. Two-year institutions that offer programs with emphases on Biological and Natural

Sciences include: Anoka Ramsey Community College-Cambridge and Coon Rapids, Inver Hills Community College, Minneapolis Community and Technical College, North Hennepin Community College, Mesabi Range Community College-Virginia, Rochester Community and Technical College, and Ridgewater Community and Technical College-Willmar and Hutchinson.

Rationale

The five-year enrollment/fiscal data provided in the accompanying documents, staffing needs, current budget realities and the need to reallocate resources for maximum service to students and their continued success, have led to the proposal to retrench one Chemistry faculty member.

Chemistry - CIP 4005

Instructional Cost Detail

	Lower Division					Upper Division				
	FY 10	FY 09	FY 08	FY 07	FY 06	FY 10	FY 09	FY 08	FY 07	FY 06
STUDENT FYE	111.1	98.4	103.2	99.9	106.8	16.1	15.3	14.2	20.7	16.3
Credits	3,333	2,952	3,096	2,997	3,205	484	459	427	621	488
Tuition Revenue*	438,681	372,170	421,785	402,529	416,236	93,078	85,649	77,354	108,209	78,975
Total Instructional Costs	339,920	378,882	334,906	281,481	369,323	162,920	158,539	140,138	183,009	151,584
Instr Exp Per FYE	3,060	3,850	3,245	2,818	3,457	10,100	10,362	9,848	8,841	9,317
State Average Exp/FYE	3,608	3,511	3,933			6,011	6,531	6,584		

Non-Salary Operating Budget 32,675 26,058 25,095 19,688 17,158

Instructional Costs - Without College Now

	Lower Division					Upper Division				
	FY 10	FY 09	FY 08	FY 07	FY 06	FY 10	FY 09	FY 08	FY 07	FY 06
College Now FYE	47.4	43.6	34.1	30.9	29.2					
On Campus FYE	63.7	54.8	69.1	69.0	77.6	16.1	15.3	14.2	20.7	16.3
Credits	1,911	1,644	2,074	2,071	2,329	484	459	427	621	488
Tuition Revenue	367,581	306,770	375,791	335,072	376,816	93,078	85,649	77,354	108,209	78,975
Total Instructional Costs	313,379	317,938	290,677	237,234	275,533	162,920	197,358	145,990	194,101	154,987
Instr Exp Per FYE W/O CN	4,920	5,802	4,205	3,437	3,549	10,100	12,899	10,259	9,377	9,526
State Average Exp/FYE	3,608	3,511	3,933			6,011	6,531	6,584		

Non-Salary Operating Budget 30,597 23,320 23,952 17,407 14,915

Notes:

49K - Brown SS was Carberry ret Carberry sick
 sab -47K offered 10K 55K

Institutional Allocation Detail

Institution	Lower Division					Upper Division				
	FY 10	FY 09	FY 08	FY 07	FY 06	FY 10	FY 09	FY 08	FY 07	FY 06
Bemidji SU		1,919	1,844	2,572	1,878		5,403	5,592	2,849	4,992
Minnesota SU, Mankato		1,932	1,815	1,781	1,576		3,406	3,142	3,650	3,471
Minnesota SU Moorhead		3,672	3,231	3,369	3,298		4,216	5,198	4,249	4,501
Southwest Minnesota SU		2,190	1,877	1,774	1,842		5,623	5,284	4,963	4,772
SMSU W/O College Now		3,110	2,268	2,077	1,937		6,876	5,485	5,251	4,844
St Cloud		2,413	2,359	2,015	2,097		2,534	2,439	2,131	2,274
Winona		1,779	1,780	1,487	1,679		3,245	3,278	2,991	2,829
MnSCU System Average		2,163	2,150	1,996	2,027		3,429	3,440	3,181	3,207

Funding Data

	FY 10	FY 09	FY 08	FY 07	FY 06	FY 10	FY 09	FY 08	FY 07	FY 06
Total Gain/(Loss)	0	0	5,979	2,217	2,485		(28,318)	(21,347)	(30,302)	(19,188)
Gain/(Loss) per FYE			58	22	23		(1,851)	(1,500)	(1,464)	(1,179)
Total Gain/(Loss) W/O CN		(40,042)	0				(47,493)	(24,205)	(36,264)	(21,416)
LOSS Per FYE W/O CN		(731)	0	0	0		(3,104)	(1,701)	(1,752)	(1,316)

CHEMISTRY COURSE ENROLLMENTS (HEADCOUNT PER COURSE)

2005-2010

Crs Subj	Crs #	Title	Acad Year								Total		
			2005	2006	2007	2008	2009	2010	2011				
CHEM	110	Our Chemical World	90	140	102	89				171	101	693	
	110L	Our Chemical World Lab											
	111	Chemistry in Our Daily Lives	78	132	94	90				146	86	626	
	111L	Chemistry in Our Daily Lives Lab	151	163	145	121			127			707	
	121	Basic Chemistry	141	151	141	108			118			659	
	121L	Basic Chemistry Lab	64	70	67	52			56	66	67	442	
	122	Intro Organic/Biochemist	61	65	64	46			57	58	60	411	
	122L	Introductory Organic/Biochemistry	32	38	36	37			41	53		237	
			Intro Organic/Biochemistry Lab	31	36	33	34		35	45		36	36
			Introduction to Organic/Biochemistry Lab										214
	231		General Chemistry I	98	82	96	114		97	111		39	720
	231L		General Chemistry I Lab	92	76	92	102		116	93		107	678
	232		General Chemistry II	60	50	43	49		48	55		49	354
	232L		General Chemistry II Lab	57	44	53	47		51	53		46	351
	243		Quantitative Analytical Chemistry		13	16	22		34	4			89
	243L		Quantitative Analytical Chemistry Lab		13								13
	244		Instrumental Analysis	6		16	6		36			18	82
	244L		Instrumental Analysis Lab	6									6
	333		Intermediate Inorganic Chemistry	6		26			10			16	58
	333L		Intermediate Inorganic Chemistry Lab	6									6
	351		Organic Chemistry I	24	47	42	35		136	30		34	348
	351L		Organic Chemistry I Lab	21	75	33	29		68	30		34	290
	352		Organic Chemistry II	18	22	34	34		30	21		26	185
	352L		Organic Chemistry II Lab	15	20	31	26		26	21		24	163
	363		Basic Physical Chemistry	9		8	7			22			46
	363L		Basic Physical Chemistry Lab			10	7			22			39
	364		Chemical Thermodynamics and Kinetics	1	13		7			7			28
	365		Quantum Chemistry and Spectroscopy	2		11			15			3	31
	366		Physical/Instrumentation Laboratory	8	5	11	3		13	2		2	44
	420		Chemistry Seminar	5	6	14	7		9	13		4	58
	447		Advanced Analytical Chemistry		12					1			13
	467		Computational Chemistry	4									4
	470		Advanced Laboratory		4	18	4		7	4		1	38
	473		Biochemistry	11	19	21	10		12	23		19	115
	473L		Biochemistry Lab	7	16	11	6		7	18		14	79
	486		Advanced Topics: Advanced Environmental Soil Chemistry			10							10
	494		Independent Study										6
	CHEM Total			1104	1312	1278	1092	1149	1072	911			7918

DECLARED CHEMISTRY MAJORS FY06 - FY10

Major	20063	20065	20073	20075	20083	20085	20093	20095	20103	20105
Chemistry	42	37	45	44	39	38	41	42	39	38
Chemistry Education	1	1	1		4	4	4	4	4	3
Pre Chemistry Education	2	2	6	6			2		2	1
TOTAL	45	40	52	50	43	42	47	46	45	42

DECLARED CHEMISTRY MAJORS/MINORS AS OF JAN 2011

Major1	Major2	Maj2Concl	ST	Cl	Orig	Yr	Minor	Grad	App
CHEM			SR			20115			
CHEM			FR			20113			
BIOL	CHEM		SR			20093			
ART	CHEM		SR			20085			
BIOL	CHEM		SR			20083			
CHEM			JR			20093			
BIOL	CHEM		JR			20103			
CHEM			SO			20113			
BIOL	CHEM		SR			20103	BIOL		
CHEM			JR			20103			
CHEM	BIOL		FR			20115			
CHEM	BIOL		SR			20083			
CHEM	BIOL		SR			20073			20115
CULG	CHEM		SR			20103	SPAN		
CHEM			PD			20065			
PHIL	CHEM		SR			20093	BIOL		
BIOL	CHEM		SR			20073			20115
BIOL	CHEM		SR			20085			
BIOL	CHEM		SR			20083			
BIOL	CHEM		SR			20093			20123
CHEM			JR			20085			
CHEM			SR			20113			
BIOL	CHEM		JR			20103	FREN		
CHEM			FR			20113			
CHEM			SR			20093	PSYC		
BIOL	CHEM		SR			20083			20115
BIOL	CHEM		SR			20083			20115
BIOL	CHEM		SR			20083			
CHEM			SR			20083			20115
MMAD	CHEM		GR			20073	BIOL		20105
BIOL	CHEM		SR			20075			
BIOL	CHEM		SR			20073			
CHEM			SR			20103	PSYC		
CHEM	SCIP	PMED-Pre-Medicine	SR			20083			
CHEM			SO			20113			
CHEM	BIOL		SR			20053			20113

NOTES: 36 declared Chemistry majors. SR: 24
 JR: 5
 SO: 2
 FR: 3
 PD/GR: 2

CHEMISTRY DEGREES AWARDED 04-10

Degrees Awarded		Period July 01-June 30						Grand
MAJOR_NAME:	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	Total	
Chemistry	11	6	4	5	5	9	40	
Chemistry Education	1		1	1	1	2	5	
Chemistry, ACS			5	3	1	1	10	

SMSU LIBERAL ARTS CURRICULUM
(as approved Dec, 2010)

Number of sections offered												Grand Total	
Subject	Crs #	20063	20065	20073	20075	20083	20085	20093	20095	20103	20105		
ART	100	5	2	2	6	1	5	2	2	1	3	2	29
BIOL	100	2	2	2	2	2	2	2	2	2	1	1	18
	200	1	1	1	1	1	1	1	1	1	1	1	10
CHEM	110	2	1	1	1	1	1	1	1	1	1	1	7
	121	1	1	1	1	1	1	1	1	1	1	1	5
	231	1	1	1	1	1	1	1	1	1	1	1	8
ECON	201	3	3	3	3	3	3	4	4	4	4	4	34
	202	2	2	3	3	3	3	3	3	3	3	3	27
ENG	107	2	1	1	1	1	2	1	2	1	2	1	14
	151												0
ENVS	100					1	1	2	1	1	1	1	6
	180	1	2	1	1	1	1	1	1	1	1	1	11
FREN	101	1	1	1	1	1	1	1	1	1	1	1	10
	102	1	1	1	1	1	1	1	1	1	1	1	5
	201	1	1	1	1	1	1	1	1	1	1	1	5
	202	1	1	1	1	1	1	1	1	1	1	1	5
HIST	210	2	3	2	2	3	3	3	2	2	3	2	25
	221	2	2	2	2	1	2	2	2	2	2	2	11
	222	2	2	2	2	2	2	2	3	2	2	2	19
	242	2	2	2	2	1	1	2	2	1	1	1	9
	243	2	2	2	2	2	2	2	2	2	2	1	9
HUMT	203	1	1	1	1	1	1	1	1	1	1	2	11
IDST	100												0
	400												0
JUAD	144	3	3	4	4	3	4	3	4	3	3	3	33

SMSU LIBERAL ARTS CURRICULUM
(as approved Dec, 2010)

		Number of sections offered											Grand Total
Subject	Crs #	20063	20065	20073	20075	20083	20085	20093	20095	20103	20105		
LIT	100	1		2		2		1			1	6	
	120								1		1	2	
	150	1			2							4	
	170		1				1					3	
	200	5	5	5		4	4	6	4		5	46	
	261	1		1		1		1			1	5	
	262	1		1	1	1		1	1			9	
	263	1		1		1		1			1	5	
	264		1			1						4	
	265												
MATH	101	3	3	3	3	3	3	3	3		3	30	
	110	1	1	1	1	1	1	1	1		2	12	
	115	3	4	4	4	4	4	4	4		4	39	
	135	1	1	1	1	1	1	1	1		1	7	
	140	1	1	1	1	1	1	1	1		1	9	
	150	2	1	2	2	2	2	2	2		2	15	
	100	2	1	2	2	1	2	1		2	2	15	
	101		1		1		1		1			5	
	102	2	1	1	1	2	3	1		1		13	
	104					1						2	
PHIL	100	2	2	1	2	1	1	2	1	2	2	16	
	103	1	2	2	3	2	3	3	2	4	3	25	
	105								1		1	2	
	107		1				1		2			6	
	110											0	
	230					1		1				2	
240													
PHYS	121	1				1	1	1		1		5	
POL	120	3	3	3	3	2	2	2	2	2	2	23	
	227	1		1	1	1		1				4	
PSYC	101	8	5	7	5	6	4	7	4	6	3	55	

Faculty Salary

(Based on HR Assignments - Includes Release time and Reassign time and Extra Duty Days)
(Excludes Benefits and Summer Session Salary)

Faculty Name	Fiscal Year				
	2006	2007	2008	2009	2010
Chemistry					
Beyer		50,349	51,555	50,766	52,334
Brown	54,486	54,056	62,221	34,842	69,184
Carberry	68,379				
Desy		6,970			
Eliason	40,747	41,748	33,369	54,515	
Fier-Hansen	3,378			1,116	
Gehle				13,259	14,013
Hansen, J	73,554	83,307	79,203	90,493	97,398
Rueckert	1,105				
Sanow	46,896				
Schindler		51,555	58,296	66,873	64,185

Re-Assign Time - Salary Only

Comments	2006	2007	2008	2009	2010
Chemistry Sanders				1,427	
.50 credits reassigned time per semester for Chemical Lab safety training			2,496	1,399	
Beyer					
Two credits reassigned time Fall Semester to Coordinate the Chemistry program review process.			4,279		
Brown					5,662
1 credit/semester reassigned time for Chemistry equipment maintenance/safety					
2 credits reassigned time spring semester for Chemistry equipment maintenance/safety				5,665	
Eliason					
.50 credit reassigned time per semester for Lab safety training	2,052	2,052			
.50 credits reassigned time per semester for Lab safety training	2,052	2,052			

Extra Duty Days - Salary Only

Description	2006	2007	2008	2009	2010
Chemistry					
Brown				1,190	1,214
Three additional days to perform summer maintenance of NMR					
Schindler				359	
One day (June 15) to perform summer maintenance of NMR in Jay Brown's absence.			329		
One day to perform summer maintenance of NMR					