Program Review Report
2008-2009

Department BIOLOGY

Recorder Heather Brient-Johnson;

Participants Heather Brient-Johnson, Laurine Ford, Stacey Jennings, Bob Iwan, Nat Hemstad, Megan Lifto, Heidi Wetherall (sabbatical), James Schneider, Tanya Smutka, and Deb Olander

Please answer the questions and prompts on the Program Review Form in the following categories onto this form. Please remember that your audience will not see the questions, so be clear in your statements.

ALIGNMENT

Changes in the mission statement, vision, and goals have been forwarded to IT for change on the website.

Biology Department Mission Statement: To improve student skills and understanding of the role that biology plays in their personal lives, in their roles as citizens, and in their professional pursuits.

Vision

- Aligning courses with other academic departments and programs, both at Inver Hills Community College and at other institutions
- Develop a two-year transferable program culminating in an Associate of Science in Biology degree to meet the needs of the increasing number of biology-related majors
- Continue community outreach by providing a variety of course offerings that meet the needs of traditional and non-traditional students
- Continue our commitment to faculty development by pursuing pedagogical and professional activities

Goals

- Provide courses for biology majors that allow them to pursue a career in the biological sciences
- Provide courses for students pursuing health-related careers
- Provide special topics courses for lifelong learning
- Prepare students with a perspective and appreciation of how biology is integrated into a liberal arts education
- Help students become responsible citizens in a diverse and global society
- Implement continuous evaluation and improvement strategies
- Enhance course accessibility to students by providing day, evening, weekend, and off-campus opportunities in biology

The goals of the Biology department are in direct alignment with those of Inver Hills including goals that allow students to pursue different careers, lifelong learning and responsible citizenship. They are also in line with the implementation of continued evaluation and improvement strategies. Our mission is similar to MnSCU vision of providing "higher education that meets the personal and career goals of a wide range of individual learners". This is evident in our vision of alignment with other institutions, two-

year transferrable programs for biology majors, and community outreach to provide for the needs of traditional and non-traditional students.

CURRICULUM

We did the Course Correspondences spreadsheet in 2004 in order to identify gaps and opportunities in the Biology Curriculum. That excel document is attached.

Consistency with other institutions:

> Two year schools: Our core courses are very consistent with other two-year schools. About the only deviation is that we seem to be missing some of the lower-level specialty courses that a few of the two-year colleges offer. Examples of these specialty courses include Forensic science, Minnesota natural history, and Field biology.
>
> Four year schools: Our lower level biology courses routinely transfer in as low-level biology or natural science credits at four-year institutions. Our major courses usually transfer in as an equivalent except at the U of MN where they just transfer in as level one or level two courses.

Curriculum Map is attached.

COURSE OUTLINES

All of the Biology courses were reviewed for the most recent catalog, and several were revised to make sure all were accurate. (During this revision, the "majors/non-majors" language was dropped.) The only course that did not get revised was BIOL 2201, because of disagreement over the prerequisite language.

We need to revise course tally numbers on BIOL 2205, 2201, 1115, and 1117. These have old tallies of 78 on them. These, and 1130 and 2300 should all be standardized to 52. We have been advised that this tally change will not be approved, so this is being put on hold.

As with the course descriptions, the learning outcomes were revised last year on all courses. Learning outcomes will need to be revised in the coming year to reflect concerns about hazardous waste disposal. The department is working with administration and campus safety to develop language appropriate for each course.

We would like Enrollment Services to block registration for students without the prerequisites. The only course over which there is substantial disagreement with other departments is BIOL 2201. The biology faculty agree that either BIOL 1120 or 1154 is a necessary prerequisite. AP and IP biology courses in high school are suitable equivalents. The department faculty agree that regular high school biology cannot be considered "equivalent" to a college-level course. Because this may affect the total number of credits in a program, we may need to wait for Nursing to resolve the 60-credit issue with MNSCU before moving forward on this issue.

In general, biology courses assume that Goals 2 (critical thinking) and 3 (natural science) are integral to the course. Both department and individual SAAPs have reviewed these competencies in most courses. See the document "SAAP Annual Reports" for details on which courses have been reviewed for specific competencies.

In courses with multiple sections, laboratory exercises are generally standardized across sections, and typically include data analysis, experimental procedures, and critical thinking problems.

Specific courses have diversity integrated into the course. BIOL 1114, 1115, and 1107 all incorporate specific units dealing with how culture and biology intersect. BIOL 1107 (Biology of Women) deals extensively with cultural practices affecting gender, from genital cutting to birthing choices. BIOL 1114/1115 (Critical Issues in Human Biology) deals with hot topic current issues including differing viewpoints on stem cell research, gender roles, sexual orientation, race, medical treatment, and other issues.

Other biology courses are less likely to address these goals head-on, but may touch on them in the context of the biology content. This may include cultural aspects that affect medical treatments, differing approaches to environmental issues, or public health issues in different countries.

COURSE SYLLABI

This review of course syllabi was started in September. Each faculty member looked over syllabi of other faculty, for courses that they teach. So far, all seem to match the common course outlines.

A few faculty need to add the MnTC competencies back into their syllabi. We also need to explicitly add college-wide outcomes (critical thinking, communication, civic engagement) to those course syllabi where these are not part of the MnTC.

All syllabi have statements regarding accommodation of disabilities.

There was discussion of exactly what religious accommodation statement needs to be included. We are all agreed that religious holidays are accommodated. Other religious accommodations (exempting course content, for example) are not viewed as reasonable.

ARTICULATION – Programs Only

Articulation agreements are currently being considered by faculty and administration at Minnesota State University Mankato for the following options:

Between AA Emphasis Biology and B.A. or B.S. Biology
Between Biology A.S. and Biology B.S.
Between Environmental Science A.S. and Environmental Science B.S.

We currently have an AA with emphasis option, for biology majors looking to transfer to a 4-year school. Three sophomore-level courses were added to the catalog specifically to allow this option, which began in Fall 2005.

MSU, Mankato Articulation Table

PROGRAM COMPONENT/COURSES	COURSE TITLE/NUMBER	NUMBER OF CREDITS
General Education/ Liberal Studies (total credits)	Biol 1154 and Chemistry 1161 will be used to fulfill the Natural Science requirements in Gen Ed/Liberal Arts.. The student should choose the appropriate Mathematics course for transfer to his or her desired program.	40
Prerequisites (total credits)	Biol 1154, Chemistry 1161	
Major – Core (list individual courses)	Biology 1155 General Biology: From Organism to Ecosphere	5
	Chemistry 1162 Principles of Chemistry II	5
	Chemistry 2061 Organic Chemistry I	5
	Any one of the following:	
	Biology 2303 Genetics	4
	Biology 2305 Principles of Microbiology	5
	Biology 2301 Zoology	4
Free Electives (non-major)	CHEM 2062 Organic Chemistry II (recommended)	5

Major - Emphasis or Option (list individual courses).
Identify each curriculum alternative separately. **(**Duplicate this section for each curriculum alternative.)

Each curriculum assumes that the General Education/Liberal Studies core will include:
BIOL 1154 Biology: From Cell To Organism (LA curric)
CHEM 1061 Principles of Chemistry I (LA curric)

Majors Option 1:
BIOL 1155 General Biology: From Organism to Ecosphere
CHEM 1162 Principles of Chemistry II
CHEM 2061 Organic Chemistry I
BIOL 2303 Genetics

Majors Option 2:
BIOL 1155 General Biology: From Organism to Ecosphere
CHEM 1162 Principles of Chemistry II
CHEM 2061 Organic Chemistry I
BIOL 2305 Principles of Microbiology

Majors Option 3:
BIOL 1155 General Biology: From Organism to Ecosphere
CHEM 1162 Principles of Chemistry II
CHEM 2061 Organic Chemistry I
BIOL 2301 Zoology

TOTAL NUMBER OF CREDITS IN AWARD*		60 - 64		

INTERNAL PARTNERSHIPS

Nursing – BIOL 2201, 2202, 2205 are part of the curriculum. BIOL 1120/1154 (or equivalent) is the prerequisite.

EMS/Paramedic – BIOL 1130 is specifically for the EHS program. The Paramedic core also includes BIOL 2201 and 2202.
Per conversation with EMS, they would like accelerated AP I and AP II courses to be taught in the spring semester, so their students could take the 1120 pre-req in the fall semester and still finish all their non-EMS core classes in one year. They also expressed willingness to increase the credits from 3 to 4 for biology 1130 so that more material could be covered. This increase credits equates to an additional lecture credit.

Human Services – BIOL 1107 is recommended. A human biology course is required at articulating program schools. (BIOL 1114 also meets this requirement.)

Physical Education – BIOL 2201 is required. BIOL 2202 is recommended. BIOL 2201 is a recommended prerequisite for PHED 2100 (Anatomical Kinesiology and Biomechanics).

A.A. degree with emphasis in Exercise Science requires BIOL 2201 and BIOL 2202 is a recommended elective.

ENROLLMENT

Year	FYE	Course Sections	Seats Available	Seats Filled	Percent Filled	Institution Percent Filled
2006	325	119	2787	2703	97%	64%
2007	328	124	3024	2715	90%	70%
2008	336	124	3262	2864	88%	54%

The demographic trend data relating to gender, racial-ethnic background, and disabilities are unavailable. Anecdotally, the trends in our department seem to reflect the general trends of the institution.

Enrollment has been growing steadily, largely due to demand for the nursing and other allied health programs. High fill rates and increasing FYE indicate that we are meeting the scheduling needs of our students. Online and hybrid courses have been filling quickly, and will probably need to have additional sections.

COMPLETERS – Programs Only

- NA

STUDENT LEARNING

The Biology Department continually strives to assure quality of instruction and learning. The Student Academic Achievement Program is one way that the department continually evaluates student learning and teaching strategies to increase the quality of our courses to meet student needs. Programs such as Learning Communities and Structured Learning Assistance are being implemented to improve student success by providing consistent learning strategies that students can use throughout their academic career. These strategies aid students in attaining their goals and carry into more successful lifelong careers. The department has also connected with the Service Learning Program to increase collaboration with professional and community organizations and meet emerging workforce needs. The Biology department is not unique, but has a strong cohesive nature and collaborative environment. Teaching strategies are freely shared to aid, not only UFT's, but also adjuncts, some of which are just beginning their teaching careers. We strongly value the development of strong adjuncts for the future needs of our department.

Report on SAAP is located at:
http://inverportfolio.project.mnscu.edu/index.asp?Type=B_BASIC&SEC={05334D40-3E48-41A0-AD9C-1F263E085BA4}.

Past SAAP reports on located on the J-drive/Forms/SAAP/Faculty Forms

See document "SAAP Annual Reports

In 2007-08, the department SAAP investigated reasons for DFW within the 2201/2202 series. This investigation is continuing this year, with more courses being looked at. In progress.

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See Department SAAP update January 2008 (attached)

STUDENT FEEDBACK ON TEACHING AND LEARNING

The department provides a variety of resources that increase success of student learning. The Biology Resource Center (HH 207) offers students access to lab materials outside of the regular classroom, including models, specimens and diagrams used in their scheduled labs. There are also microscopes supplied so that students can review slides. Peer tutors are scheduled in the Resource Center so that students can more easily access help with class content as needed. Peer tutoring is also provided in the Peer Tutoring Center to allow students to schedule help sessions on a regular basis. Instructors may also be scheduled in the Resource Center to help tutor students.

The department also maintains smaller class sizes which foster a better student-instructor relationship and allows students increased access to their instructor. Instructors also benefit with more time to help students one-on-one, and it increases the instructor's ability to do more interactive learning in the classroom.

Heritage Hall is a newer building with up-to-date laboratories which better facilitate student learning. The lab spaces more appropriately maintain the standards for handling materials and equipment, including hazardous waste. Equipment is more up-to-date to meet the needs of the biology labs. Students are able to access better equipment to facilitate a better understanding of material. Well-planned and coordinated spaces and equipment build a more cohesive environment geared toward successful student learning. Administration support of appropriate funding for equipment and supplies allows us to stay up-to-date in the labs.
The Department autonomy allows for more effective planning and coordination of courses and activities. This is even more affective with the continuity of UFT and non-UFT faculty present.

RESOURCES

Biology Department (from IHCC website, Academic departments) is located at:

http://www.inverhills.edu/Departments/Academic_CourseDescription.aspx?Dept_Name=Biology%20---%20BIOL&Dept=BIOL

This site includes the catalog of courses, and is up to date.

Biology Department website: http://depts.inverhills.edu/Biology/

Contents:

a. Slide collection http://depts.inverhills.edu/Biology/slides/slideindex.html – sorted by general topic, but not identified or labeled. (This will be done on L. Ford's sabbatical.)
b. Courses offered: http://depts.inverhills.edu/Biology/couresOffered.htm
c. The course listing is out of date:

Not yet on site: BIOL 1101, 1102, 1116, 1114, 1110, 1130, 2205, 2301, 2303, 2305

No longer offered: BIOL 1100 Spring Flora of Minnesota

d. Volunteer info
e. Instructors http://depts.inverhills.edu/Biology/instructors.htm – **the instructor listing is out of date**
f. Prep room – the blog was last updated in 2003.
g. Room schedule http://depts.inverhills.edu/Biology/room_scedule.htm – out of date.

Jason Lachowsky was contacted 2/9/09 about updating the page.

Instructor Websites:

	Address	Contents
Heather Brient-Johnson	http://faculty.inverhills.edu/hbrient/	About me, courses taught (need updating), links to online resources
Laurine Ford	http://faculty.inverhills.edu/lford/	Contact info, office hours, courses taught, syllabi, course calendars (need updating)
Nat Hemstad	http://faculty.inverhills.edu/nhemsta/	Contact info, list of courses taught
Bob Iwan	http://faculty.inverhills.edu/biwan/	Contact info, courses taught, course PowerPoints
Stacey Jennings	None	
Heidi Wetherall	http://faculty.inverhills.edu/hwether/	About me, Contact info, office hours (need updating), courses taught, links to resources

Biology Study Center

H207 is set aside for biology study. It is equipped with microscopes, computers, and models from the labs (when not in actual use in the labs.)

Peer tutors are available on a walk-in basis.

Faculty are available at specified hours.

Biology Center hours: M-Th 8:30am – 8:30pm, F 8:30am – 12 noon.

Spring 09 faculty hours: Nat Hemstad, Th 2 – 4pm; Heather Brient Johnson, W 11 – 12noon.

Biology Center Brochure

New for spring 2009. Available at Y:\Biology Department docs\BIO CENTER BROCHURE 013109.docx

Biology lending library

New for spring 2009. Extra copies of textbooks for most biology classes are available for checkout by students. The book collection is in H209, which is accessed by faculty. (This is not a self-serve activity.) This was established to prevent students from falling behind while waiting for financial aid.

There are also several textbooks on reserve in the library that are available to all students. Currently, all classes being offered this semester (with the exception of Biol.1154) have the textbook currently in use available in the library. The texts on reserve may only be used inside the library for up to two hours. However, there are several older editions available in the general circulation which students may check out for up to four weeks at a time.

COST ANALYSIS

In FY 2006, the average direct cost per FYE was $2,587 in the Biology Department; this is lower than the Inver Hills average of $3,213. This is also lower than the biology departments at Saint Paul ($3,317), Anoka-Ramsey ($3,219), Normandale ($3,219), North Hennepin ($2,736), and MCTC ($2,670). However, it is higher than Century's biology department ($2,240).

In FY 2000-2004, the Biology Department was in the ninetieth percentile (90%) and at 72% of the MnSCU average in total expenditures per FYE.

FACULTY

Faculty	Academic	Educational Background	Areas of Expertise/Strengths

	position		
Heather Brient-Johnson	UFT	B.S. in Zoology M.S. in Biology with an emphasis on Physiological Ecology and Mammalogy	General Bio/Human Bio/Zoology
Laurine Ford	UFT	B.S. in Biology M.S. in Entomology (Evolutionary Biology and Systematics)	Anatomy & Phys/Human Bio/Zoology
Nat Hemstad	UFT	B.A. in Biology M.A. in Biology (natural resources and ecology focus) Ph.D. in Water Resources Science (fisheries and GIS focus)	General Bio/Env Sci/Ecology
Bob Iwan	UFT	Unknown	General Bio/Micro/Genetics
Stacey Jennings	UFT	B.S. in Human Biology Graduate: Doctor of Chiropractic	General Bio/Anatomy&Phys/HumanBio
Heidi Wetherall	UFT	B.A. Biology M.S. Biology Ed.D. Science Education	General Bio/Micro
Megan Lifto	TFT	A.A. in Liberal Arts B.S. in Zoology M.S. in Zoology	Anatomy and Phys
James Schneider	Adjunct	Undergraduate: B.S. Zoology, minor in Environmental Science	General Bio/Anatomy & Phys

		Graduate: M.A. in Education, Graduate work in Aquatic Ecology	
Tanya Smutka	Adjunct	B.S. in Biology and Chemistry M.S. in Ecology, Evolution and Behavior	General Bio/Environmental/Ecology
Deb Olander	Adjunct	B.S. in Biology and Chemistry M.S. in Ecology, Evolution and Behavior	General Bio/Human Bio/Microbiology
Lisa Ledwidge	Adjunct	Unknown	Environmental/Intro Bio
Kristin Diguilio	Adjunct	Unknown	Anatomy and Phys

Department UFT's have the ability to teach any of the courses that are part of the biology curriculum.

GOALS AND ACTION PLAN

Action Plan
2009-2011

Department___Biology_____

Participants Heather Brient-Johnson, Laurie Ford, Nat Hemstad, Stacey Jennings, Megan Lifto, Deb Olander, Tanya Smutka, James Schneider

Departments should use the SWOT Analysis and departmental goals to develop an Action Plan for the two to three years before the next Program Review. An Action Plan should state the goals to be achieved, steps needed to be completed to achieve the goal, a timeline, and persons responsible for each step. A template follows and a sample is attached.

Goal	Steps	Timeline	Responsible Party
Goal 1: Explore course offerings based on student-driven needs	1. Discuss with department curriculum among other colleges as potential course offerings at Inver. 2. Disseminate info to the counseling department to identify	9/10	Department faculty

	potential courses. 3. Reconvene to discuss potential future courses. 4. Meet with dean to discuss feasibility. 5. Develop a plan for increasing course offerings.	 5/10	
Goal 2: Determine the CLA and work study service needs for laboratories.	1. Discuss lab service needs with department. 2. Convey needs to dean – Cynthia and Tom Williamson. 3. Develop a hiring committee to hire a CLA1 position. 4. Hire a CLA1	3/09-4/09 5/09	Department faculty
Goal 3: Explore the bioscience curriculum for lab and department feasibility.	1. Research the bioscience curriculum 2. Discuss with department 3.Discuss with dean 4. Develop list of potential courses.	9/09-12/09 2/10	Department
Goal 4: Develop an adjunct mentoring program.	1. Meet with adjuncts to determine needs. 2. Discuss with department. 3. Meet with dean to convey needs. 4. Set-up plan for mentoring.	4/09	Department
Goal 5: Increase the maintenance and replacement of microscopes.	1. Determine the feasibility of increasing maintenance and replacement including cost (budget). 2.Develop a maintenance schedule. 3. Obtain services for increasing service.	4/09-5/09	Department with lab management (Sarah Buman) Sarah Buman
Goal 6: Connect more courses with Structured Learning Assistance.	1.Meet with Laurel Watt and Woubejig to determine feasibility of adding SLA's to courses.	3/09	Department – Heather Brient-Johnson

	2.Develop list of courses to connect with SLA. 3.Aid in hiring SLA's	8/09 Ongoing	
Goal 7: Develop a plan for equipment needs with consideration for potential bioscience and undergraduate lab research.	1. Determine potential bioscience courses from goal 3. 2. Determine long-term needs for equipment for bioscience curriculum and other research courses. 3. Develop a budget for equipment needs.	4/10	Department

SWOT Analysis
2008-2009

Department___Biology_____

Participants Heather Brient-Johnson, Laurie Ford, Nat Hemstad, Stacey Jennings, Megan Lifto, Deb Olander, Tanya Smutka, James Schneider

Every department should use the four levels; Strength, Weakness, Opportunity, and Threat. Each department must use the categories for Curriculum and Faculty. Some departments should also use Equipment/Supplies for a category. Some departments may need a category for Facilities. Your department may have a unique category that may be added. Create a form similar to the following to suit the needs of your department.

Category Level	**Curriculum**	**Faculty/Personnel**	**Equipment/supplies**
Strengths	• Large diverse curriculum incorporating first and second year level courses as well as a variety of liberal arts education courses. • Many courses have guaranteed enrollment due to prerequisites. • Many courses have high fill rates, especially those associated with popular programs such as Nursing or EHS.	• Faculty is diverse – they can teach across multiple disciplines. • There is a cohesiveness and sense of teamwork which includes the majority of adjuncts. This is enhanced by a common meeting time scheduled consistently each semester.	• There are 3 dedicated lab spaces to accommodate course needs. • There is a Biology Resource Room dedicated to student tutoring and access to lab materials and microscopes. • Newly acquired models and equipment support labs and increase student access.
Weaknesses	• There are some low enrollment courses that are often faculty –driven instead of student-driven.	• We are losing a CLA in the lab. • Many faculty and lab positions are difficult to fill due to competition across the State College System. • The summer	• In light of the new STEM project the department may not be prepared to support the laboratories for some of the Bioscience programs.

		program does not support CLA positions due to reduced pay. This, therefore, reduces the summer lab support. • There is a lack of support for newly hired adjuncts decreasing the consistency and integrity of the department.	• There is an increased need, especially in Microbiology, to increase the frequency of maintenance and replacement of microscopes. The once-a-year scheduled maintenance does not keep up with the demand for functioning microscopes. There are also not enough microscopes to accommodate temporary or permanent breakdowns.
Opportunities	• There is an opportunity to expand and tie into bioscience programs that support the STEM education project. • There is immediate opportunity to increase the success of students through Structured Learning Assistance. • There has also been an increased effort put forth by the National Science Foundation to encourage undergrad research and project-based learning at the community college level. This	• Enhancing bioscience programs increases the need for faculty or personnel in different areas of expertise. • Structured Learning Assistance will increase the opportunity to hire SLA's opening the door for a more diversity.	• Bioscience programs may require more sophisticated or special equipment. This may include equipment such as a laminar flow hood. The increased quality and access to new equipment can enhance many labs across the curriculum. • Undergrad research and project-based learning are most often lab-based and may require also new equipment to make hands-on learning successful.

	opportunity may require more independent or research related curriculum.		
Threats	• Changes in the internal department prerequisites may affect enrollment.	• Outside changes in accreditation rules may affect current faculty that do not have appropriate educational background. • Changes to regulatory rules regarding hazardous may change the way we teach our courses (especially lab portions).	• Economic budget shortfalls could affect the ability for the department to support labs with equipment, supplies and maintenance.

Summary of Biology Department Student Academic Achievement Program

Formatted: Centered

Reports from http://inverportfolio.project.mnscu.edu/index.asp?Type=B_BASIC&SEC={05334D40-3E48-41A0-AD9C-1F263E085BA4}&DE={21651DC5-A5A9-4570-A088-2DFCD382B3B6}

Cycle of courses reviewed in SAAPs

Course	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09
1001						NEW (summer only)
1002						NEW (summer only)
1107	Brient-Johnson MNTC 3a,b	Jennings	Dept. SAAP MNTC 3a,d Ford, Brient-Johnson, Jennings, Buttery		Olander MNTC 2	Olander, CT a
1110					NEW	
1114					NEW	Ford, CT-c
1115						
1116				NEW	Hemstad MNTC 10	
1117				Smutka MNTC 10 Hemstad MNTC 3		Hemstad, CT-c Smutka, CT-c
1120		Iwan, Korpik			Iwan, Smutka MNTC 3	Brient-Johnson, CT b

1130						
1154				Wetherall, Brient-Johnson MNTC 3	Wetherall, Brient-Johnson MNTC 2	
1155						?Brient-Johnson
2201		Dept. SAAP MNTC 2a,2b,3a	Wetherall MNTC 3a,d	Jennings MNTC 2	Dept. SAAP (Success/Failure)	Dept. SAAP (Success/Failure) Schneider, CT-c Ford, CT-c Jennings, CT-c
2202		Dept. SAAP MNTC 2a,2b,3a Ford, Wetherall		Ford MNTC 2a	Dept. SAAP (Success/Failure) Ford MNTC 2a	Dept. SAAP (Success/Failure)
2205					Dept. SAAP (Success/Failure)	Dept. SAAP (Success/Failure)
2301				NEW	Not offered	Not offered
2303				NEW	Not offered	Not offered
2305				NEW		Iwan, CT-d

Annual Report 2005-2006

Individual reports from: B. Iwan (f), H. Brient Johnson (f,j,s), L. Ford (f,j,s), N. Hemstad (f), H. Wetherall (f,j,s), V. Buttery (f), S. Jennings (f,j), T. Smutka (f,j,s). No summaries given.

Annual Report 2006-2007

Department	*Activity*	*Results*
Biology	Pre- and post-survey on attitudes relative to the Theory of Evolution after more thoroughly integrating evolution across the curriculum.	Student attitude toward Theory of Evolution decreased from 76% to 69%, even though they demonstrated a greater understanding of the theory.

MnTC Competencies

Goal 2a: After introduction of pre-lab prior to two structured physiology labs in which students gather data and analyze it according to strict criteria, 55% received acceptable scores on exams (compared to 50% in the prior semester without a pre-lab) and 81% constructed acceptable graphs (compared to 79% in prior semester without pre-lab) *(Ford, 2007).*

Goal 3a: After implementing a plan to more fully integrate the theory of evolution into the biology courses, students showed a great deal of improvement in acquisition of content in evolution. However, assessment of attitudes (belief systems) with a pre- and post- attitude survey revealed a decrease from 76% to 69% in students' attitudes toward evolution *(Wetherall, 2007).*

After implementing new presentation slides, the median score improved on a two-part question valued at 8 points from 5/8-7/8 *(Hemstad, 2007).*

College Learning Outcomes

Citizenship/Civic Engagement: A faculty member assessed student awareness of the human impact on the environment in an effort to help students become more informed, responsible, and scientifically literate citizens. 96% of the students responded with a 4 or 5 to the question "How much do you feel that you learned about your research topic?" 85% reported a 4 or 5 for the question "How would you rank your ability to find and use scientific information?" *(Smutka, 2007).*

Annual Report 2007-2008

Department	*Activity*	*Results*
Biology	Improve retention through validation of prerequisites for A&P I and Microbiology; pretest to assess retention of biology content in the first week of class compared with final	There was no correlation between scores on the pretest and final course grades. Using successful completion of prereqs resulted in a clearer evaluation of 90 students (A&P). For Microbiology, about half of the 21% failure rate can be directly

	grade.	linked to lack of successful completion of introductory college biology. The conclusion that seems clearest is that a pattern of DFW, in either prerequisite courses or the same course previously, predisposes students to fail.

***MnTC* Competencies**

Goal 3a: After creating permanent learning teams in a biology course, individual scores, compared to team scores, on the same assessments showed higher scores, on average, for all individuals *(Olander, 2008).*

After having students put name cards in front of them, attendance improved and students appreciated the instructor knowing their names. Most students had doubts about whether the use of the cards improved their grades by making them be more prepared for class *(Wetherall, 2008).*

After progressive assignments that ask students to evaluate and interpret increasingly complex data, 87% of students were able to construct a complex graph ; pretests indicated that 48% correctly chose a graph that displayed the described data *(Ford, L. 2008).*

College Learning Outcomes

Critical Thinking: After implementing online surveys as a way to critically analyze the value of assignments, etc., it was found that most students did not care to share feedback or to critique assignments. After spring semester, the overall quality of the project improved, with the average around 73%. Although this appears to be less successful than previous semesters (76%), it was determined that the grading was more critical, raising the bar for scientific reports *(Brient-Johnson, 2008).*

Classroom Assessment

Several techniques were implemented that resulted in improved learning for students:

- After including optional study questions in the coursepack, a survey of students (N=35) indicated that 26 completed some of the questions some of the time, and that 15 of these students completed the study questions right before the exam. There did not appear to be a correlation between the percentage of completion of the study questions and grades. D2L discussion boards did seem to improve grades: the average grade in spring semester (with discussion boards) was 74.73%; the average grade in fall semester (without discussion boards) was 66.68% (*Smutka, 2008).*

Annual Report 2008-2009 (interim results)

Strategy	**Assessment Method**	**Results** (January)
This is followup to the 2007-08 department SAAP	Students who receive a D, F, or W will be considered to	7 courses were evaluated; 4 at the freshman (1000) level, and

Instructors will gather as much information as possible on students who are not succeeding in their biology courses. Some factors were identified last year as contributing to student failure. We will expand on these this year to look at • Textbook readability • Student reading placement level (if available) • More courses (last year we looked only at BIOL 2201/2202)	have "failed". The department will request access to placement scores and previous coursework to determine if these contribute to student failure.	3 at the sophomore (2000) level. Of 925 students, 258 (27.9%) received a D, F, or W. Instructors attempted to identify possible contributing factors to the DFW students. Detailed results are below. For all groups, lack of college-level reading and writing was a major risk factor (38% of all DFWs.) For 1000 level courses, lack of regular class attendance was a major factor (26% of DFWs). For the 2000 level courses, lack of a prerequisite course, or poor performance in the prerequisite course was a major factor (59% of DFWs). Previous failure in the course (repeating it) also was identified as a risk factor. Personal crises (health or family) were fairly steady across courses, being responsible for about 13% of DFWs.

Departmental Curriculum Map

Outcomes Courses	Communication	Critical Thinking	Civic Engagement	Goal 1 Pursue degree in biology	Goal 2 Courses for health related field	Goal 3 Enhance accessibility evening weekend, etc.
1001	x	x	x	x		
1002	x	x	x	x		
1107		x		x		x
1110	x	x		x		x
1114		x	If service learning	x		x
1115	x	x	If service learning	x		x
1116	x	x		x		x
1117	x	x	If service learning	x		x
1120	x	x		x	x	x
1130					x	x
1154	x	x		x	x	x
1155	x	x		x	x	x
2201		x		x	x	x
2202		x		x	x	x
2205	x	x		x	x	x
2301	x	x		x	x	
2303	x	x		x	x	
2305	x	x		x	x	

Create a chart which indicates which college-wide and departmental outcomes are taught and assessed in the courses in your department. Your departmental goals should reflect your departmental mission. You should list at least three goals, but can do more.

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