Chemistry Assessment Report 2013 – 2014

I. Methods of Program Assessment:

The major program assessment is always the ETS Major Field Test. This is given to all senior majors in April. This year we had 5 chemistry majors take the test. The median score was 162 which is in the 79th percentile. The chemistry department is very happy and proud for the median to be this high. We hope to continue to turn out high achieving chemistry majors.

In addition to the Major Field test, alumni send feedback via email or visit. This "survey" is an informal assessment but is helpful in knowing how prepared alumni were upon entering their job or graduate study. We have compiled data from all alumni since 1996 in the results section.

II. Results of Assessment:

The Major Field Test results follow: We are still looking for the data from 2006.

Year/Student	Physical	Organic	Inorganic	Analytical	Total	Median	%
’14 6	74	63	62	66	167	162	79
’14 5	54	66	66	60	162		
’14 4	48	78	66	45	161		
’14 3	39	52	49	36	145		
’14 2	67	78	59	69	170		
’13 8	61	71	59	47	164	149	55
’13 7	33	55	56	54	151		
’13 6	36	57	56	47	149		
’13 5	30	52	46	57	145		
’13 4	51	63	62	66	162		
’13 3	30	44	49	39	140		
’13 2	39	60	52	33	149		
’12 6	74	76	72	72	176	162	79
’12 3	45	49	56	45	149		
’12 4	67	86	69	69	177		
’12 5	61	68	56	54	162		
’12 2	27	44	37	31	133		
’11 1	49	68	45	53	158	155.5	
’11 2	56	86	73	59	174		
’11 3	30	46	34	28	133		
’11 4	49	58	57	44	152		
’11 5	30	40	38	28	132		
’11 6	46	77	69	50	164		
’11 7	60	80	65	65	171		
’11 8	49	65	61	41	153		
’10 1	70	83	69	59	174	148	55
’10 2	46	46	34	41	140		
’10 3	46	58	38	50	148		
’09 1	42	42	61	44	146	150.5	60
’09 2	46	68	61	33	155		
’08 1	36	49	45	41	142	159	85
’08 2	49	74	53	50	159		
’08 3	49	58	73	44	159		
’07 1	33	61	38	31	140	149	55

’07 2	49	65	61	47	159		
’07 3	33	61	61	39	149		
’07 4	49	65	42	53	151		
’07 5	33	55	49	23	140		
’05 1	39	53	41	41	144	152	65
’05 2	69	84	76	71	180		
’05 3	39	56	51	52	152		
’04 1	33	56	48	36	145	145	40
’04 2	53	56	51	39	153		
’04 3	33	63	38	33	143		
’04 4	53	66	58	49	159		
’04 5	26	38	27	30	128		
’04 6	66	84	65	84	176		
’04 7	23	28	24	39	125		
’03 1	33	50	44	39	140	149	55
’03 2	26	69	48	30	144		
’03 3	49	50	65	46	154		
’03 4	63	81	72	71	175		
’02 1	53	74	86	48	171	171	95
’01 1	53	74	58	61	164	164	90
’00 1	53	58	54	61	158	160	85
’00 2	49	74	54	55	162		
’99 1	67	65	36	71	160	149.5	60
’99 2	42	52	47	52	149		
’99 3	53	46	54	52	150		
’99 4	42	46	47	42	144		
’98 1	32	52	33	55	139	140.5	25
’98 2	39	36	43	29	135		
’98 3	42	46	47	48	144		
’98 4	53	39	50	52	150		
’98 5	35	49	47	39	142		
’98 6	49	52	29	39	139		
’97 1	28	33	33	39	131	142	30
’97 2	28	30	43	52	135		
’97 3	42	36	50	55	145		
’97 4	46	39	61	45	146		
’97 5	32	49	50	39	142		
’96 1					168	168	90

One interesting result of the "alumni survey of 2010" was that one alumnus noted the lack of a quantitative analysis course in our curriculum. Partly as a result of this, and also due to the coincidental addition of the Forensic Chemistry concentration, a Quantitative Analysis course has been added.

Since 1996, all Chemistry graduates have been placed in graduate school pre-professional school or the workforce. Listed in parentheses is the alumni's known place of employment or graduate school.

QU Chemistry Graduates Since 1996

1996 Kirstin Bopp (Anheuser Busch)
Troy Goehl (NW Indiana managing the metals, microbiology, and wet chemistry departments for Microbac Laboratories Chicagoland division)

1997 Jackie Knaust (University of Missouri, Ph. D.; Assistant Professor of Chemistry at Clarion University of Pennsylvania) Alma Hamidovic, Amanda Kluever

1998 David Roman (Purdue, Ph.D, Assistant Professor at University of Iowa),
Susie Tomlinson (Masters in chemistry Northern Illinois University),
Callie Anderson Binosi (Blessing Hospital Nurse),
Dwayne Sharpe (Lonza Inc Sales and Business Development Manager, NJ)
Becky Beals,

1999 Claire Hoelscher (Baylor medical school, MD for US Air Force),
Noi Sonethonkham (self-employed, insurance),
Elizabeth Stumf (nursing school; works for Quincy Medical Group),
Travis Holmes (Green America Recycling, Hannibal, MO),
Corey Maul, Susan Philo, Curt Sparling,

2000 Jim Brown (University of Missouri grad school),
Holly Russell (Northwestern grad school, Seton Hall grad school Counseling)

2001 Stacey Sakowski (Wayne State, Ph.D, University of Michigan research)

2002 Jason Keller (Prince Manufacturing),
Tony Vaughn (University of Missouri PhD Inorganic Chemistry, Monsanto, St. Louis)

2003 Matt Spector (Loyola medical school MD, Michigan),
Marie DeWolf (PhD IUPUI Physical Therapy)

2004 Jason Ulrich (Ph. D. University of Iowa, postdoctoral research associate Washington University)

Carlee Rees McKenzie (Prairie Analytical Systems, Springfield IL)
Natalie Sauer Stewart (Henckel Corporation/Chemist, Naperville IL),
Katie Geppert (Severn Trent Labs, St. Louis)
Kelly Walker Koeters

2005 Natalie (Kragel) Ulrich (Ph. D. University of Iowa, Teaches at Maryville University in St. Louis),
Rochelle Luaders (Master's Degree from QU, 2014),
Daniel Spector (Carnegie Mellon grad school),
Jessica Stuckman (Midwestern University grad school),
Katie Weiss Harris (Chemia Corp, Troy MO)

2006 Adam King (Carbondale medical school),
Nick Fredrickson (St. Louis University medical school),
Jon Moreno (Indianapolis/industry)

2007 Rob Mendenhall (medical school),
Dinita Bockhold (UMSL optometry school),
Shannon Byrne (SIU Edwardsville pharmacy school),
Melissa Boyer (Charles River Laboratories, Massachusetts)

2008 Haley Klitzing (Ph. D. University of Illinois),
David Phillips (University of Missouri medical school),
Jamie Fluchel (SLU grad school)
Camvan Vicki Pho (Prince Manufacturing)
Betcy Benedict

2009 Dan Merckel (SIUC grad school)
Danielle Williams (IUPUI grad school)

2010 Joe Gianfiddo (UMSL optometry school, graduated May 2014),
Roberto Perera (applying to pharmacy schools),

2011 Emily Byczynski (CLS school in St. Louis)Tyler Grawe (OU pharmacy school), Amanda Manton, Allen Mason (St. Louis University chemistry grad school), Cory Reidl (Loyola chemistry graduate school), Nicholas Ruhs (chemistry graduate school Washington University), Erin Syzdek (SIUE dental school), ScottWhiston

2012 Marissa Chapman (Pharmacy School St. Louis College of Pharmacy), Nathan Fritts (Physician's Assistant school at Saint Louis University), Daryle Goldie (Logan Chiropractic School).

2013 Stephannie Aguilera, David Carter, Sarah Carter, Scott Hannum, Jessica Hendrickson (Roquette), Tara Hibbert (Roquette), Zachary Venvertloh (U of Iowa, Pharmaceutical Chemistry).

2014 Ariel Baldwin, Stephanie Foster (completing her BS in Mathematics at QU), Nicholas Malinowski (Tennessee Pharmacy School), Amanda Mathews (completing her BS in Biological Sciences at QU), Tyler Reidl (U of IL Chicago, Chemistry Grad School).

III. Analysis of Assessment Results

The results of the alumni survey are extremely encouraging. Students have been able to be placed in graduate school out of our program very easily. We have only heard from about 80% of past graduates, but all of these are employed in their field. Every person we have heard from is gainfully employed, either in graduate school or in a job related to their field. One is self employed in business and two are choosing to be stay-at-home Moms, but previously held jobs in their area. We are still trying to find current information for about 10 out of 62 graduates.

Also in the survey, we hear from many students who are not Chemistry majors (usually Chemistry minors) that many of our students scored very well in the chemistry portions of the MCAT, OAT, and P-CAT. Most recently one scored in the 88% of the General Chemistry portion of the Optometry test. The top accomplishment of a QU chemistry student was 2011 when Tyler Grawe scored in the 99^{th} percentile on the chemistry portion and 96^{th} percentile overall on the Pharmacy-CAT.

The ETS Exam

The results of this exam are always interesting but it is only one test. In general, Quincy University chemistry majors score slightly higher than the chemistry majors at other colleges and universities. The A students do the best and the C students do the worst, but within acceptable ranges. This actually shows that the grades in QU chemistry classes are pretty accurate to what the students have learned.

The median scores are more or less constant over the years. It is very difficult to do a numerical analysis and get any valuable insight out of it because the sample size is so small. It is interesting to see the raw scores vs. percentiles, which come from ETS, and it gives some meaning to the scores. The possible scores for the total are 120 – 200. However, each year the percentiles change. The highest scoring individuals (174, 174, 175, 176, 180) from the last several years have scored well into the 95% percentile.

IV. Planned Program Changes

The most recent change was the addition of Dr. Caitlin Deskins of the Quantitative Analysis/Forensic Chemistry course. This was implemented because of the new Forensic Science major, but the Quantitative part of the course fits in well and meets a need we had. Some of the alumni in graduate school had mentioned that we didn't have Quantitative Analysis in our curriculum and should have it.

The goal is to have at least 3 graduating senior chemistry majors each year. The ETS exam results are always relative (again, it is just one test), but a goal for this assessment is to score at least 140 for all test takers, and most QU chemistry majors should score 150 or better.

A goal is to continue encouraging more students to do summer undergraduate research. A student who has this on their transcript is almost guaranteed placement into graduate school. We succeeded in this goal. In the summer of 2010, four Quincy University chemistry majors were doing summer undergraduate research at other institutions. I was unable to get students to engage in summer undergraduate research for both the summer of 2013 and 2014. I will continue to encourage the student to do summer undergraduate research.

Finally, a continued goal for the program is to have 100% placement, whether it be in a job or professional school. Currently the professor's input into this is somewhat limited, but ongoing discussions with the chemistry majors will help to ensure that they are working on placement. The major influence that faculty have on placement is the letter of recommendation.