Reusing Regalia:

A More Economical and Ecological Choice
ABSTRACT

Wasteful consumption lies at the heart of the world’s environmental predicament. Each May at Smith College more than 600 seniors contribute their regalia to methane producing landfills and aquatic ecosystems. Students have three options to acquire graduation attire: Grécourt Bookstore, the SGA Donation Program or hand-me-downs from upperclassman. All current modes of attainment imply a set of tradeoffs. From an economic perspective, regalia cost $71 for students who purchase full garb from Grécourt Bookstore. While they supposedly sell a green product, to biodegrade regalia require specific conditions impractical to realize. The SGA Donation Program and senior hand-me-downs while free and reduce waste, entail disproportionate student access; everything depends on whether one receives financial aid and can then obtain regalia from the small finite collection, or has upperclassman contacts. By formalizing loaning practices to expand SGA’s program, and fostering a relationship with University Cap & Gown to provide students with 100% recycled polyester regalia for only $27.94, Smithies can reduce, reuse and recycle while saving money.

A survey of 56 students depicts an overwhelming 85% stating they would prefer to reuse regalia at no cost and return it, if given the option. Through snowball sampling interviews, an understanding of Smith’s regalia system was obtained. Supplemental lifecycle analysis research and potential alternative models was then presented to administrators in the hopes to implement a reusing regalia donation program. Collaborative efforts between College Relations, SGA, Office of Student Engagement, ResLife and Grécourt Bookstore are underway to further coordinate efforts in late May/early June 2011.
INTRODUCTION

(Regalia, a Historical Tradition)

During the United State’s Colonial period the European regalia tradition was practiced in the nine pre-American Revolution Colleges, where students were required to wear the attire on a daily basis. With time, most higher education institutions mimicked this custom until approximately the American Civil War period. By 1893, the United States standardized a particular style, material and assigned colors depending to one’s academic field (University C&G 2011). The practice soon spread to high school ceremonies in the 20th century. Poplin, a mix of silk, rayon, wool and cotton, was first used as the default fabric for caps and gowns, but material standards evolved over time and nowadays tend to be polyesters and acetates. Wearing regalia for commencement ceremonies has become a popular rite of passage, but at what costs?

(An Addiction to Plastic)

The global economy has a secret addiction, plastic. While contact with these materials happens on a daily basis, from parts of cars to graduation attire, their use and effects often do not get questioned. Markets traditionally demand durability and as a result tin, lead and cadmium heavy metals are components in plastic products. In view of global environmental concerns, plastic’s characteristic resistance presents disposal issues. In 1996 the manufacturing of plastic worldwide hit a level of 108 million tons consequently creating landfill overloads and aquatic pollution (Bailey and Clark 2002). Moreover, since plastics derive from petrochemicals, their use adds to green house gas emissions. Since the invention of the first synthetic plastic in 1907, manufacturers have had over a hundred years to increase cost effective production techniques (Chemical Heritage Foundation 2010). In combination with the historically low price of oil, a commodification of plastic products has shaped today’s consumer culture behaviors. Although
oil prices fluctuate thereby affecting the cost of polyethylene (PET), the most typical plastic that composes water bottles, average figures are $0.50 a lb as of 2009 (Haans 2009). Within the context of climate change, people see an increasing necessity for individuals to adopt sustainable practices and for businesses to provide them with green alternatives. As a result, a revival of bioplastics like tree pulp based cellulose, pose promising industrial substitution for synthetic plastics.

Given that biopolymers are made up of repeating groups of living systems, microorganisms can also biodegrade them. With the material properties of toughness, gloss and natural feel cellulose acetate textiles have become a particularly popular choice in bioplastics due to their clothing application. A multiplicity of usages has manufacturers generating 1.5 billion pounds of bioplastics annually worldwide (Biswas, Shogren and Willett 2005). In an attempt to go ‘green’, Jostens, a Canadian-based corporation, sells cellulose acetate regalia to provide environmentally conscious students at Colleges like Smith, a local solution to global problems. (Regalia Monopolies and Classist Consequences)

Fifty five percent of Smithies surveyed admit that they would “likely pay more for ‘green’ environmentally friendly products” showing an obvious economic rational that motivates companies to utilize ‘green’ marketing tactics. Jostens’ green regalia cost $71 for full garb thus posing affordability problems for many college students. New graduation attire can only be purchased at Smith College’s Grécourt Bookstore at the latter high cost. Two other methods to obtain regalia exist for some students. A program run by SGA offers a limited supply of donated caps and gowns for those students on financial aid. By going to the yearly distribution and presenting a Bannerweb copy of their aid report those students can opt out of having to pay for this one-time-use garment. The catch, however, is that the year to year supply reflects donations
from the previous graduating class and cannot fulfill high student demands. One last option, for
those who have senior friends, is to reuse their regalia.

When gauging the environmental impact of a product, in this case regalia, an inherent
worry with regard to the inaccuracy of scientific data leave many feeling doubtful as to whether
they truly are making an effective environmental decision. Only one universal rule does exist:
*reduce, reuse and recycle*. The particular ordering of this well known environmental slogan,
attempts to communicate to consumers that reducing waste should come *before* reusing and
recycling. When the majority of Smithies lack any option but to buy expensive regalia at the
college’s bookstore in order to walk at commencement, and when Smithies on financial aid
cannot be guaranteed any assistance if the regalia donations that year don’t reach the end of the
distribution line, you know *that’s* a problem. On the whole, however, Smith College policies
show an investment in students regardless of their varying economic backgrounds. Other
campuses already incorporate alternative regalia rental systems at lower costs for their students
thus reducing waste. Smith prides itself in being a progressive leader and by expanding on the
existing SGA donation program we can pioneer a campus-wide donation program. Since 1875
there have been 132 graduating classes which have been increasing in size; class of 2014 has 645
students. Here lies an opportunity for Smith to be environmental leaders while encouraging other
campuses to emulate our newest green method, reusing graduation attire

**METHODOLOGY**

*(Online Research)*

In order to look for potential alternatives, while also placing Smith’s graduation customs
on a comparative green continuum, the first step was to investigate other campus regalia systems.
Concentrating on other North Eastern colleges, those not contracting Jostens as a supplier were
compared on the following parameters: price, fabric, location and types of green initiatives.

Simultaneously, extensive lifecycle analysis of Smith’s current cellulose acetate regalia from a biologic and chemistry outlook, attempted to assess the level of greenness of an assumedly biodegradable product.

*(Smith Student Survey)*

To assure that student attitudes and behaviors would be open to the unconventional donation regalia system, an 8 question survey was devised to be brief enough so as to encourage time constrained college students to share their views (See Appendix A for survey questions). In an effort to assure complete question comprehension, a focus group of friends from varying academic fields took the pilot survey prior to campus circulation. A revision based on their confusions to word phrasings and the like made the final survey comprehensible so that responses would more closely reflect student opinions. Utilizing Facebook to reach a greater number of students during a likely time they would not be doing work, I posted a Google link with the survey asking Smithies to take it. After exceeding the minimum viable statistical sampling size of 32 with a total of 56 student responses, the link to the survey was closed.

*(Semi-Structured Interviewing)*

To learn more about Smith’s current regalia donation program, snowball sampling methods began with Sharon Fagan who coordinates these efforts. Acknowledging the reality of hectic work schedules, emailing was always a first attempt at contact. Part of the email described who I was as a student, an attached copy of my project proposal, and suggested, but flexible, times to meet along with my contact information. These email interactions were repeated throughout all email interactions. While bringing to the interview specific questions, letting the conversation flow was vital since interviewees typically know important points to cover that
sometimes do not present themselves as obvious to the interviewer. Taking notes during interviews was important to keep track of all information, but at the same time keeping eye contact made people feel more comfortable when talking to an unfamiliar student. After interviewing, short-hand notes were catalogued in Word documents while the conversation was still fresh in mind. Although learning the role each person plays in Smith’s graduation system was key, of comparable importance were the names of other administrators also involved in the graduation organization. However, interview leads at times provided faulty information. The email first-contact practice aided to quickly discontinue those dead ends. In this manner the following contacts were established. Those providing information solely via email or as secondhand information are underlined.

- **Katie Depault**: Registrars Office, Enrollment and Graduation Assistant.
  - Responsible for senior ‘outstanding requirements’ management
  - Sends out emails to all Smith College classes (Could send out an email to seniors regarding gown donations etc.)
  - Aware of the graduation activities/ceremony logistics.
  - (Suggest where donation regalia donations can be practically collected)
- **Mairan Brady**: Financial Services Advisor.
  - Statistical information regarding need-based aid distributed by class.
- **Kathy Zieja**: Dining Services.
  - Cap and gown collection box, lunch area location approval.
- **Tamra Bates**: Director, Office of Student Engagement.
  - Helps in SGA donation distribution.
  - Co-coordinates graduation activities.
- **Aaroon Fox**: University Cap & Gown, Representative.
  - Provides 100% recycled regalia with rental option.
- **Hannah Durrant**: Residence Life, Assistant Director.
  - Involve students in regalia distribution process.
- **Judi Strzempko**: Director of College Relations.
  - Leads all graduating class activities.
- **Peg Pitzer**: College Relations, Director Events Management.
  - Involved in planning all graduation events.
Dixie Holland: Grécourt Bookstore Manager (Nebraska Books).
- Oversees the selling of Jostens regalia to Smith students.

Laura Smiarowski: Controllers Office, Controller.
- Oversees Smith College contracts.

Katie: Nebraska Books, Regional Buyer.

(Group Meetings)

Once an overall picture of the environmental implications and bureaucratic responsibilities relating to Smith College’s regalia procedures were fairly identified, an organized meeting took place between key players for potential project implementation. A 10 minute Power Point gave a condensed overview depicting the economical and environmental problems associated with the current regalia model, along with recommendations. Once again, by employing technology, a Doodle link aided to efficiently coordinate people’s busy work schedules while also minimizing the emails administrators had to read and respond to (See Appendix B). Throughout this entire process project transparency and open communication have played decisive roles to build inter-administrative collaboration and develop stronger solutions.

RESULTS

(SGA Donation Program)

Since 2005 through an SGA effort now headed by Sharon Fagan, graduation attire donations are made available for financial aid students. According to the Registrar’s Office and Financial Services, class size fluctuates from 680-715 students where anywhere from 61-64% receive some form of need-based aid. With emails and a senior class meeting announcement, students are made aware of the yearly donation distribution at the Campus Center (CC) where they can obtain all regalia for free, but need to buy the $7 tassel from the Grécourt Bookstore since most students keep these as mementos. The program continues to evolve to meet the challenges it faces so while donation collection in 2006 was a mere 30-60 garments that were
stored in Fagan’s SGA office, by 2010 with 130 gown donations the Office of Student Engagement (OSE) needed to provide on-loan storage space in the CC. To collect regalia after commencement, boxes get placed around graduation activities. Yearly placement varies, but in the past they have been in the CC and at the Quadrangle where commencement occurs. From that point on Fagan, with help Tamra Bates, collects, sorts and hangs all donations for the following year. In past years housekeeping has also brought bags of regalia to Fagan left by seniors. Previous attempts to have students facilitate collection and store regalia in basements have failed since Smith basement environments are damp and organizing students was difficult. Distribution typically occurs at 7:30 am where students anxiously wait outside the CC since gowns are given on a first come first serve basis. Fagan sees the following categories as areas for this program’s improvement.

- Increasing donations and complete regalia attire to better meet high student demands that vary by class size.
- Secure permanent storage where items can be hung since they wrinkle and cannot be washed or ironed.
- Increase collection, storage and redistribution labor efficiency.

Figures 1 and 2 shows that if given the option 80% of students would opt to rent regalia at a subsidized price given various factors ranging from price, environmental consciousness and dislike for secondhand items. While figure 3 depicts that 75% of students express mid-high probability of donating their gowns if boxes were provided around graduation events, Fagan’s concerns highlight a need to persuade Smithies to carry out this action.
Dislike

Used

Money Not a Factor

Money is a Factor

Want to Keep

Moving Away

Green Reasoning

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**Fig. 1**

<table>
<thead>
<tr>
<th># of Students per Factor</th>
<th>(3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Money Not a Factor</td>
<td></td>
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<tr>
<td>Money is a Factor</td>
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<tr>
<td>Want to Keep</td>
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<tr>
<td>Moving Away</td>
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<tr>
<td>Green Reasoning</td>
<td></td>
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</tbody>
</table>

**Fig. 2**

<table>
<thead>
<tr>
<th># of Students per Factor</th>
<th>(45)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subsidized Price</td>
<td></td>
</tr>
<tr>
<td>Prefer to Buy</td>
<td></td>
</tr>
<tr>
<td>Depends how much money I have</td>
<td>(3)</td>
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</tbody>
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**Fig. 3**

<table>
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<tr>
<th># of Students</th>
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<td>Scale 1-5, 5 Being Highly Probable</td>
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</table>
In July of last year Nebraska Books won the Smith College bid for Grécourt Bookstore, following the expiration of Follett’s 6 year contract, and is now managed by Dixie Holland. Every year 600 regalia outfits get bought from Jostens who also provides Smith with graduation invitations, the Madeline Yearbook and until last year class rings. The Nebraska Books pricing reflects a 25-40% mark up on all non-book items. While a Nebraska Books regional buyer interacts with Jostens, Jostens actual contract gets handled by Smith. As the manager, Holland has the authority when deciding to make specific purchases. Currently unaware of Jostens contract with Smith she does not feel comfortable switching providers. Her Smith contact is Laura Smurnoski, the College’s controller, who has informed her that the College Relations Director, Judi Strzempko, oversees Jostens contract. Overall, the Grécourt Bookstore exhibits an admirable high level of social and environmental consciousness; by fall 2011 the conversion of a portion of the store will supply students with fair trade/green products. As the daughter of an organic farmer, Holland shares that while a small initiative, these actions connect to the preservation of the planet and recalls her father words, “The most responsible and the best is usually the cheapest”.

Institutions like Oberlin no longer wear regalia at commencement, but this would not work at Smith since students are fond of tradition and survey results state that 64% want no alterations to traditional regalia while the rest want slight changes regarding color and fitting. Other colleges, like Colby’s undergraduate program and the doctoral programs at UMass Amherst and Harvard University, use green rental companies that use 100% recycled polyester (PET) as opposed to the cellulose acetate gowns sold at Smith.
While some sources say that cellulose acetate can take 18 months to 10 years to biodegrade, others state that depending on landfill and other degradation conditions it can be up to several decades (Clean Virginia Waterways 2011). Polyester (PET), a synthetic plastic plastic, hypothetically breaks down within 450 years (Bailey and Clark 2002). According to the data collected for the “Life Cycle Inventory Report” conducted in 2010, 100% recycled PET flakes, which is used in recycled regalia, uses 11.89 MJ/kg (NAPCOR 2010). In contrast, Ingeo’s biopolymer uses 42.2 MJ/kg (Nature Works 2010). A comparison of this data can be seen in Figure 4. For 100% recycled PET flakes, GHG emissions are 0.81 kg of CO2 e/kg PET (NAPCOR 2010). Ingeo’s bioplastic contrasts with 1.8 kg of CO2 e/kg polymer (Momani 2005).

Disregarding which life cycle processing procedures minimize environmental harm when comparing PET and cellulose acetate has been debated since measurements are subjective. It is only by reducing, reusing and recycling can real change happen. Given the extremely low rate of synthetic polymer degradation coupled with the fact that so much of the material already exists, the research results offer the following conclusion. From the non-renewable energy and CO2 emission figures outlined above, using recycling PET for regalia as opposed to producing new bioplastic regalia decreases energy consumption and thus pollution. From an economic, longevity, maintenance and storage perspective, PET gowns offer more practicality due to its chemical durability and reduced production costs (Fox 2011).

- Half the cost
- A reuse lifespan of 30 plus
- Can be machine washed
- Do not wrinkle or absorb water
Each of the previous quantitative figures, in supplement with information collected from Smith College administrators, can guide Smith College to reevaluate and create greener regalia traditions.

DISCUSSION AND RECOMMENDATIONS

Like many procedures, Smith’s regalia model has become a routine. As long as every senior continues to walk in traditional cap and gown attire, no one questions the distributional structure of the system. In general Smith administrators seem paradoxically hesitant to change something that “works”, but simultaneously inclined to promote greener regalia customs that are more affordable to students. With a consumerist culture ideology implying that new is always better, placing seemingly minor individual decisions within the macro-level context of environmental degradation is crucial given that North American advertising in 2007 legitimized a consumption of 115,793 million pounds of plastic of which only 6.9% was recycled (Momani 2009). These pressures to constantly consume concretize themselves in the polluted air we breathe, the aquatic life we poison with our plastic use, and our ever-growing landfills that will be the proof to our children that our wants surpass their needs. With a small change through new collaborations, Smith College can provide its students a more economical regalia system encompassing all aspects of a well known motto: reduce, reuse, recycle.
University Cap & Gown, a locally based company in Lawrence, MA provides 100% recycled PET regalia tinted black with vegetable dyes. This company is capable of providing management of all regalia responsibilities. Furthermore, since Smith is part of the Massachusetts Higher Education Consortium Smith is guaranteed the lowest price of $27.94. Students/their parents can either order graduation attire online, or the company can come and outfit the students on campus. In the past the company has accommodated the needs of students with varying economic backgrounds, by offering to place a cross subsidy tax on all gowns bought from them so as to set aside free regalia. Raising the price to $35 dollars was one suggested figure. Although the company provides gown collection boxes so that they can pick up, wash and store the regalia for future use, I suggest the following.

To increase the quantity of free gowns for the SGA Donation Program, apart from those cross subsidized regalia provided by University Cap & Gown, continued gown collection as currently enacted should occur. Since some Smithies surveyed stated a dislike for secondhand gowns, a constant flow of new gowns at lower costs will maintain the collection for those students not able or wanting to buy. The issue of lack of student commitment to donating, however, must be acknowledged by increase publicity. Throughout pre-commencement senior events, College Relations administrators can add regalia donation announcements to welcome/introduction speeches. Additionally, University Cap & Gown is willing to print and place a small flyer in regalia packages to persuade those who buy regalia to donate.

Large increases in regalia donations, regalia collection, storage and redistribution challenges will need to be addressed in the following manner. With an approval from the Director of College Relations, currently Judi Strzempko, work-study student reunion workers
can aid in the collection and sorting of regalia that will be stored in well-maintained dormitory basements. A further investigation of appropriate storage bins is necessary, but money from the Smith Sustainability Fund can be applied for this investment. On Hannah Durrant’s recommendation, a new green leadership role can be created for House Presidents (HP) on ResLife duty to help redistribution efforts. Each HP can email house seniors to coordinate a time prior to Rally day for redistribution. HPs in houses that do not have the necessary basement conditions for regalia storage can coordinate with other HPs to obtain regalia for their seniors. The latter email coordination could also be used if houses have a gown-size discrepancy.

After meeting with Judi Strzempko, Peg Pitzer, Sharon Fangan, Tamra Bates and Hannah Durrant the following loose ends were presented and plan to be resolved by meeting together this summer.

- Is University Cap & Gown’s regalia attire physically feel and appearance satisfactory?
- While ideally the quantity of regalia would match student demand, how do we favor those students on financial aid and prioritize those with greater need?
- How can a student’s, confidential financial situation not be inferred by other students, such as the HPs who would hand out regalia according to financial necessity?
- What are the details outlining Smith’s contract with Jostens with regard to regalia?
- What licensing issues exist, if any, regarding Smith’s tassel with the College’s image?

Depending on Jostens contract, Grécourt Bookstore could also provide University Cap & Gown regalia. Dixie Holland, the manager, seems open to either replacing Jostens regalia, or adding University Cap & Gown’s regalia to create more affordable options. With the upcoming fall opening of the bookstore’s fair trade/green section, this seems like an ideal opportunity to incorporate 100% recycled polyester regalia products.

Like a puzzle, Smith administration can collaborate to implement a progressive vision for the college that generates economic and environmental returns in the best interests of its students. Implementing this campus-wide donation program based on a new recycled locally
produced product that reduces and reuses waste thereby minimizing Smith’s carbon footprint. Consequently, through new green leadership roles and campus marketing initiatives promoting regalia donations, Smith will instill its commitment to sustainability to future generations of Smithies. In return, students will economically benefit, Smith College will gain vital PR and in future commencements seniors can take steps towards the future without leaving a footprint behind.
ACKNOWLEDGEMENTS

Thank you all for your time, patience and progressive vision of what we can accomplish together for a more environmentally and socially just community.

Sharon Fagan, Student Government Association
Judi Strzempko, College Relations
Tamra Bates, Office of Student Engagement
Hannah Durrant, Residence Life
Dixie Holland, Grécourt Bookstore Staff
Peg Pitzer, College Relations
Katie Depault & Karen Sise, Registrar’s Office
Mairin Brady, Student Financial Services
Aaroon Fox, University Cap & Gown
Smith Student Survey Participants
My Environmental Science and Policy Seminar Class & Professor Smith
APPENDIX A.

(Attention all SMITHIES! Please take this FIVE MINUTE SURVEY and HAVE YOUR VOICE HEARD before graduation while also HELPING ME...THANKS!)

https://spreadsheets.google.com/a/afscwm.org/viewform?hl=en&formkey=dHFGLWV5b2M4TUlfYmFyVZCRTVoOUE6MQ#gid=0

Smith Student Survey: Green Graduation Gown System

1) On a scale 1-5, 5 being highly probable, how likely would you be to donate your graduation gown if boxes were provided around commencement and graduation quad events?
   1…..2…..3…..4…..5

2) If given the option would you consider renting all graduation attire (excluding the tassel), which usually costs $64, for $15?
   a) I would prefer to buy from Gregourt Bookstore at full price.
   b) I would prefer to rent for this subsidized price.
   c) It depends how much money I have at the time.

3) In reference to your answer in question 2: Did you choose your answer based on any of the following factors? (Please circle all that apply)
   a) I don’t like used clothing
   b) Price is not a factor in my decision
   c) Price is a factor in my decision
   d) I want to keep all of my graduation attire for sentimental value
   e) I want to get rid of items since I will be graduating and moving in May
   f) Environmental/social considerations

4) If given the option would you consider renting all graduation attire (excluding the tassel), which usually costs $64, at no cost and then returning it to one of several locations?
   No…..Maybe…..Yes

5) Would you prefer a fabric that is not currently being used in graduation gowns (cellulose acetate, a bioplastic)?
   a) No
   b) Cotton
   c) Other ______________(Please specify)

6) Is your answer in question 5 related to any of the following reasons? (Please circle all that apply)
   a) I like the traditional graduation gown as is
   b) Uncomfortable due to texture, heat or style?
   c) The debate around whether this material is actually a green product
   d) Other ______________(Please specify)
7) Would you prefer a different style graduation gown? If so, what would you change of the current graduation gown attire? (Please circle all that apply)
   a) Color (Specify what color) ____________
   b) Length: Shorter or Longer
   c) Other ________________

8) If you could not donate your graduation gown after the ceremony, where would it most likely end up?
   a) In my closet
   b) In the trash
   c) In my closet, but eventually in the trash
   d) As a clothing donation to a place like Salvation Army

APPENDIX B.

Reusing Regalia Summer Meeting
http://doodle.com/a2snbxdm44gvi9iudnag27t5/admin#admin
Where: Rife's Cafe, Smith College Museum Building

Hello Everyone,

Seeing as schedules during this time of the semester are quite hectic it was suggested that we meet this summer to further discuss a revision of the regalia system. If you would be able to make a meeting either at the end of May or beginning of June, please click on the available times through this Doodle link so as to more easily coordinate. Thank you for your collaboration and efforts and good luck with the rest of the semester.

Best,

Tess
American Chemistry Council.  
2010 History of Polymer and Plastics for Students.  

Bailey, Ronald and Clark, Herbert et al.  

Biswa, Atanu, Showgren, R.L & Willett, J.L.  

Chemical Heritage Foundation.  
2010 Leo Hendrik Baekeland.  

Clean Virginia Waterways  
2011 Are Cigarette Butts Biodegradable?  

Haans.  
2009 The Cost to Produce a Plastic Bag.  

Momami, Brian.  
http://www.wpi.edu/Pubs/E-project/Available/E-project-031609-205515/unrestricted/bioplastics.pdf

NAPCOR.  
2010 Life Cycle Inventory Report.  

University Cap & Gown  
2011 A Brief History: An Academic Tradition Americanized.  

van Dam, Jan and Bos, Harriëtte.  
2004 The Environmental Impact of Fibre Crops in Industrial Applications.  