Technology and Graduate Education

Andrew Comrie, University of Arizona
Karen P. DePauw, Virginia Tech

Council of Graduate Schools Annual Meeting
December 2011
Scottsdale, Arizona

21st century graduate school

- Challenge to improve functionality
- Explore technology tools for enhancing operations
- Create innovative communication strategies; use of social media
- Manage information and data
- Understand technology and how it informs and enhances learning

This session is designed not only to provide an overview of tools and strategies utilized by current graduate deans and to share effective practices, but also to facilitate discussion about technology changes and learning paradigms important in graduate education.

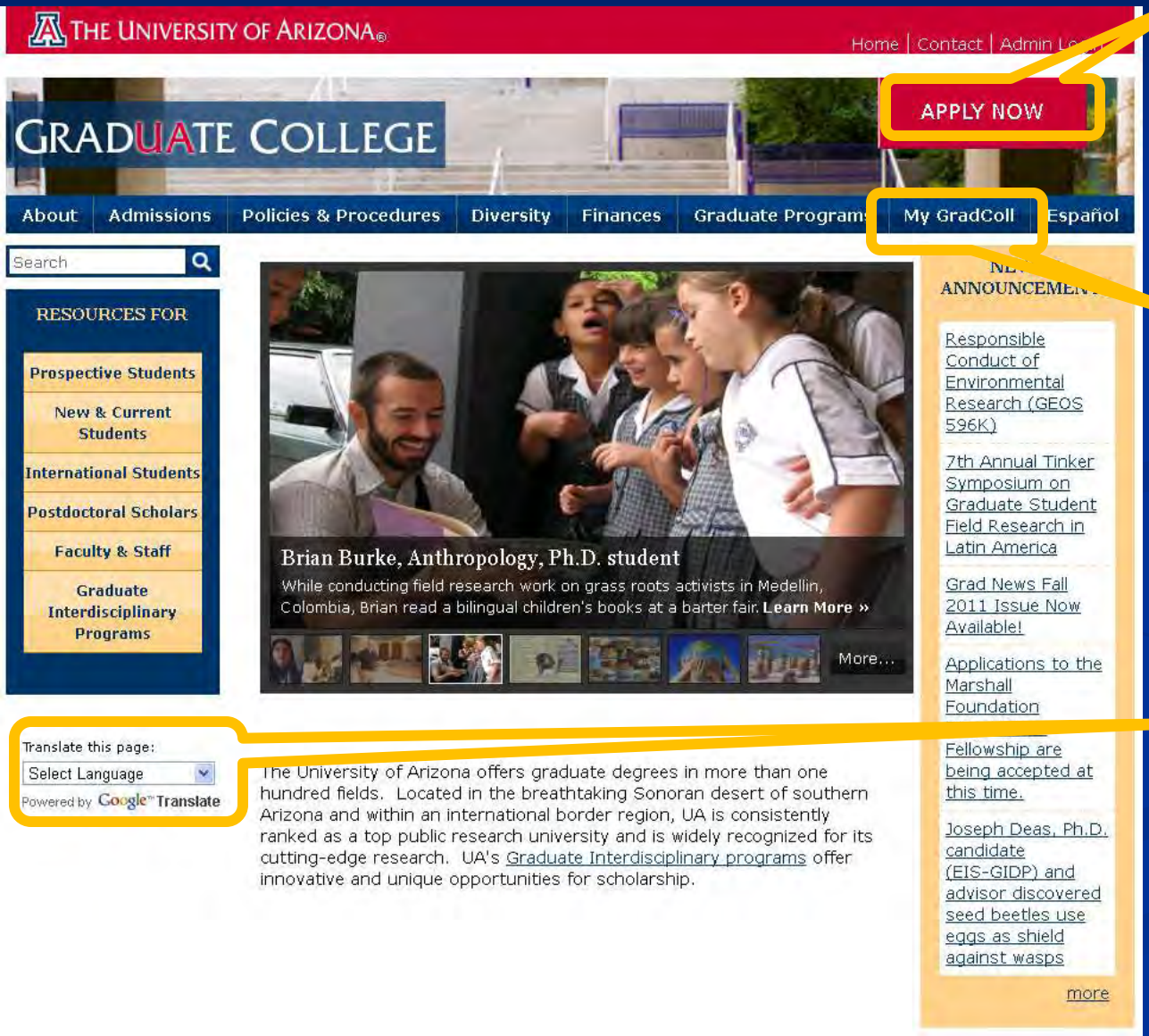
An Opportunity

- Universities and Graduate Schools
  - Confluence of generations
  - Technological advancements
  - Conceptual Age (Daniel Pink)
- Graduate students - evolving needs and perspectives, social networking
- Graduate Schools – responsive, interactive, integrative, inclusive & innovative
- Graduate dean - architect of communities

Univ of Arizona Context

- Sustained investment in IT ($=mostly people, especially web developers/programmers)
  - Have grown IT, even with layoffs of other staff
- Enterprise system replacement → Peoplesoft
  - BUT, no system has all the features; need to augment with unique graduate school elements
- Today:
  1. Applications/Admissions/Evaluation
  2. Analytics

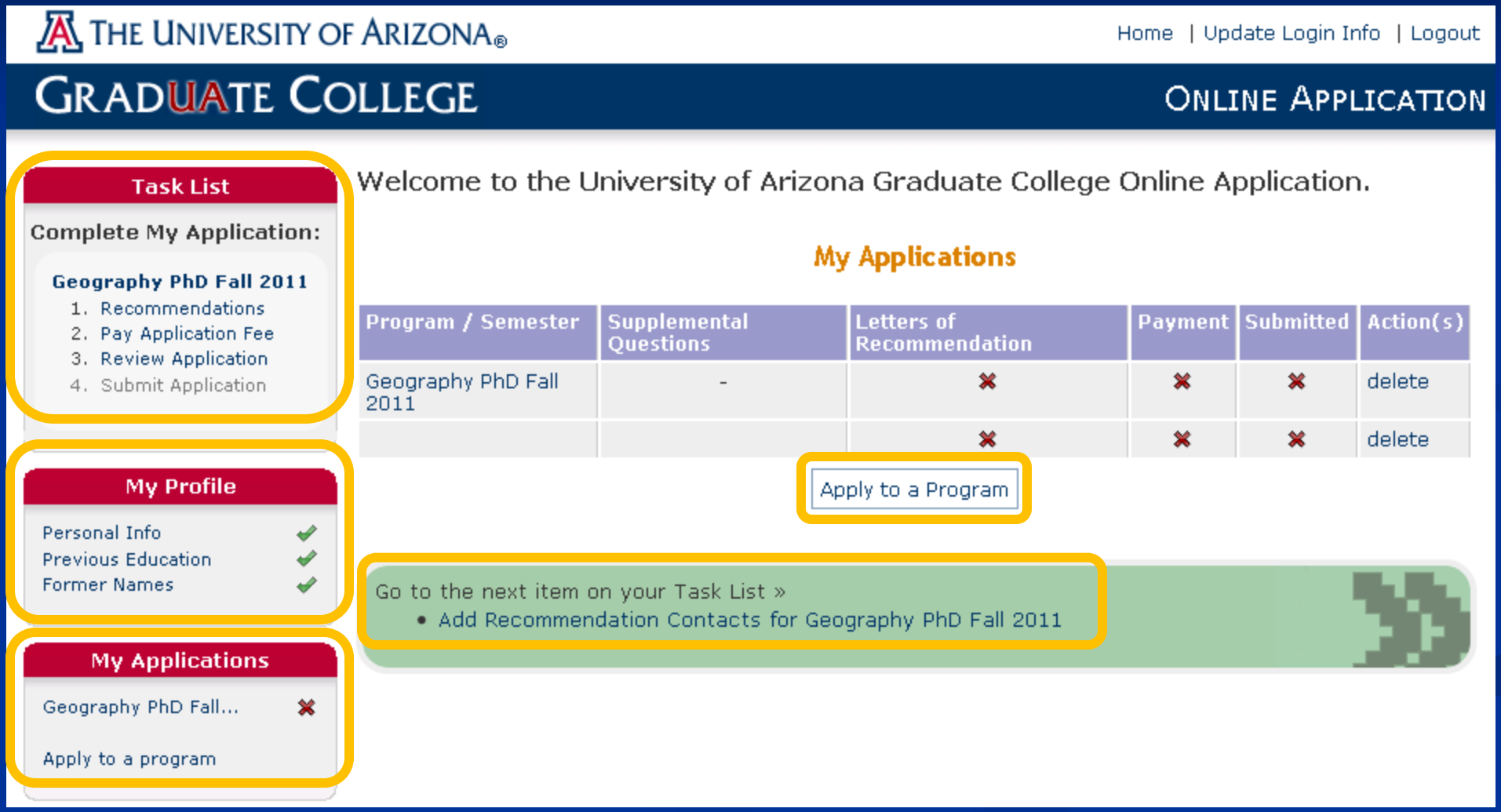
Applications



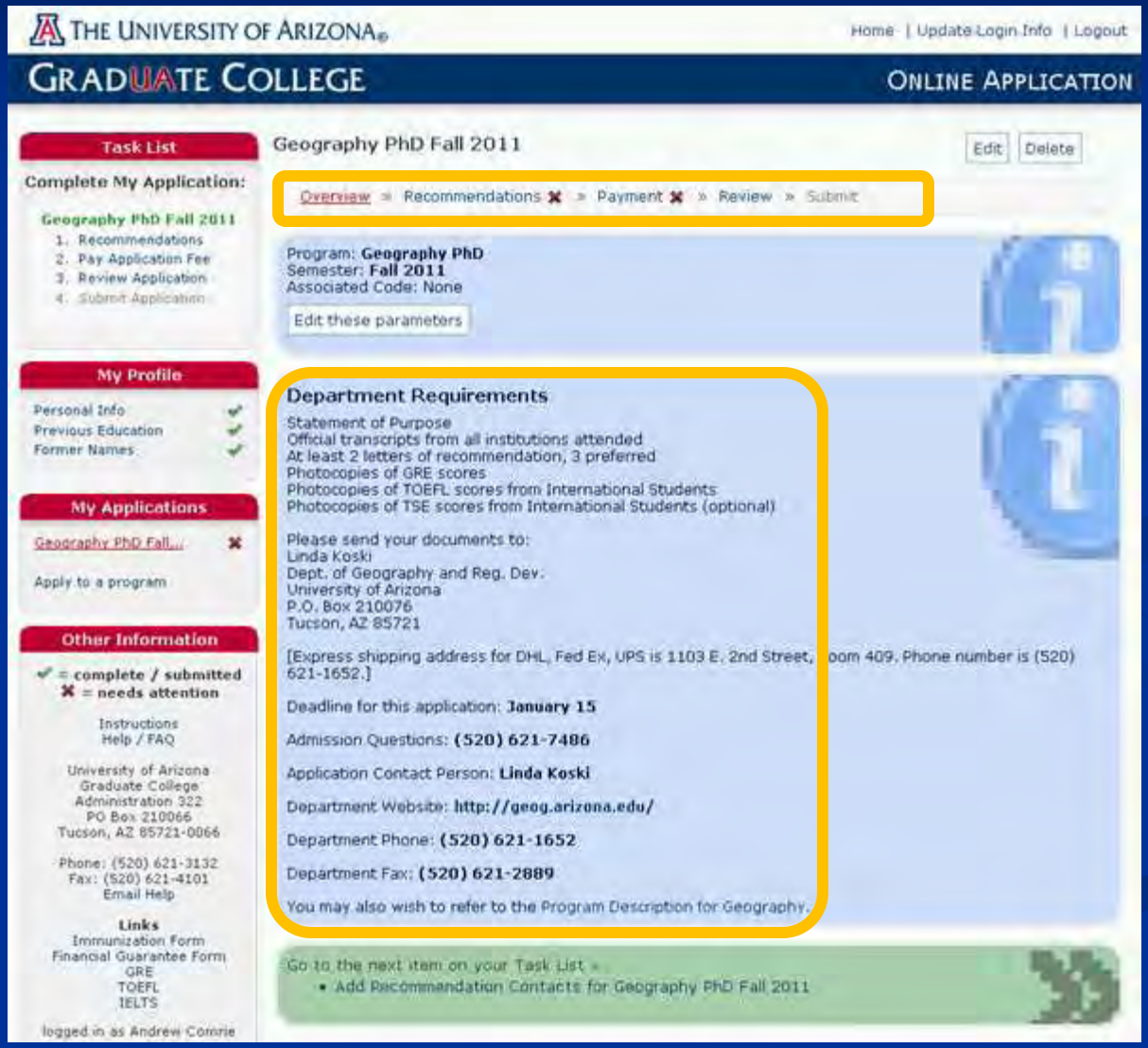
- Start online application
- MyGradColl
  - Students
  - Programs
  - GC Staff
- **Cute Google trick – translate any page for international students**

Student/Applicant View

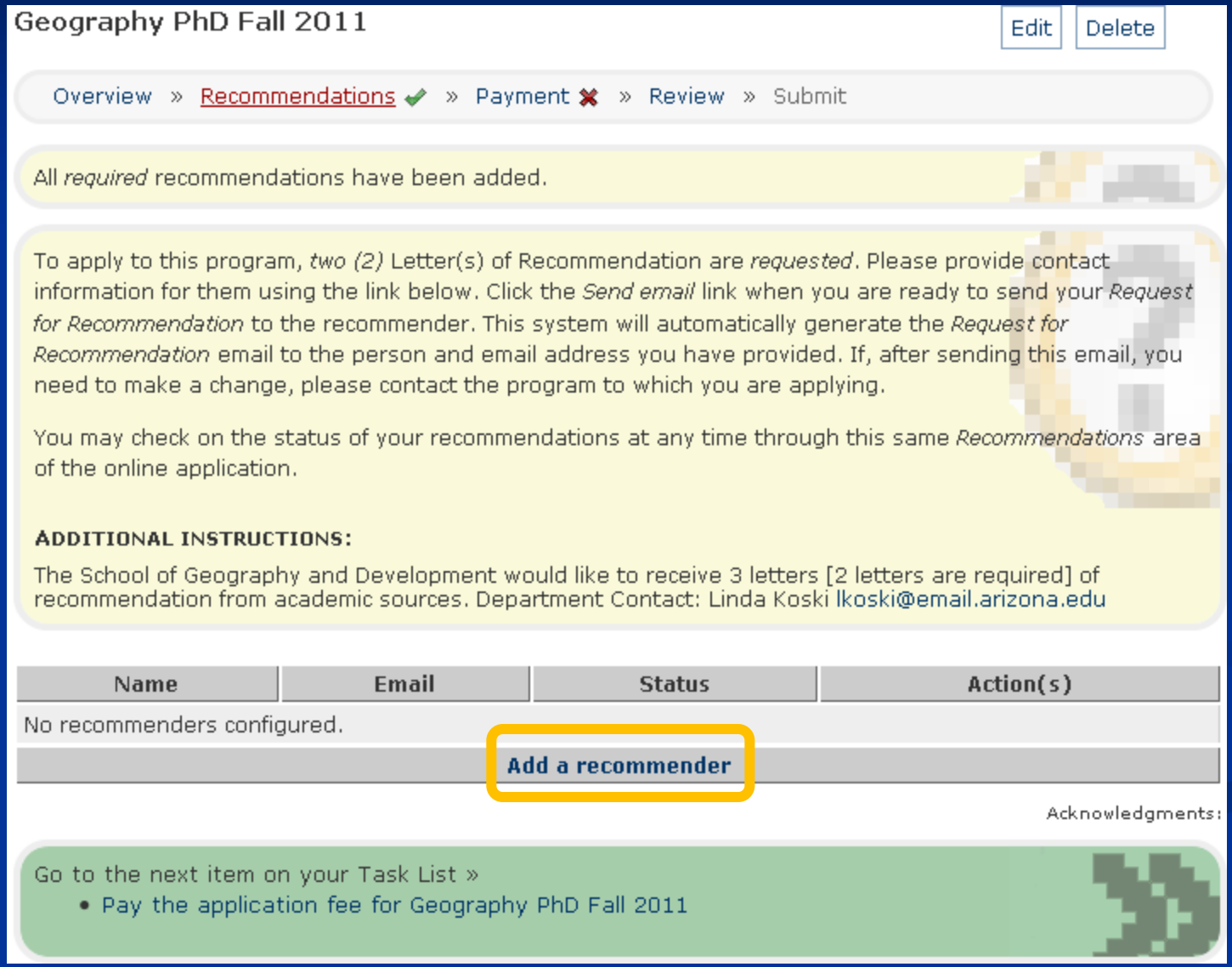
Applicant Workflow



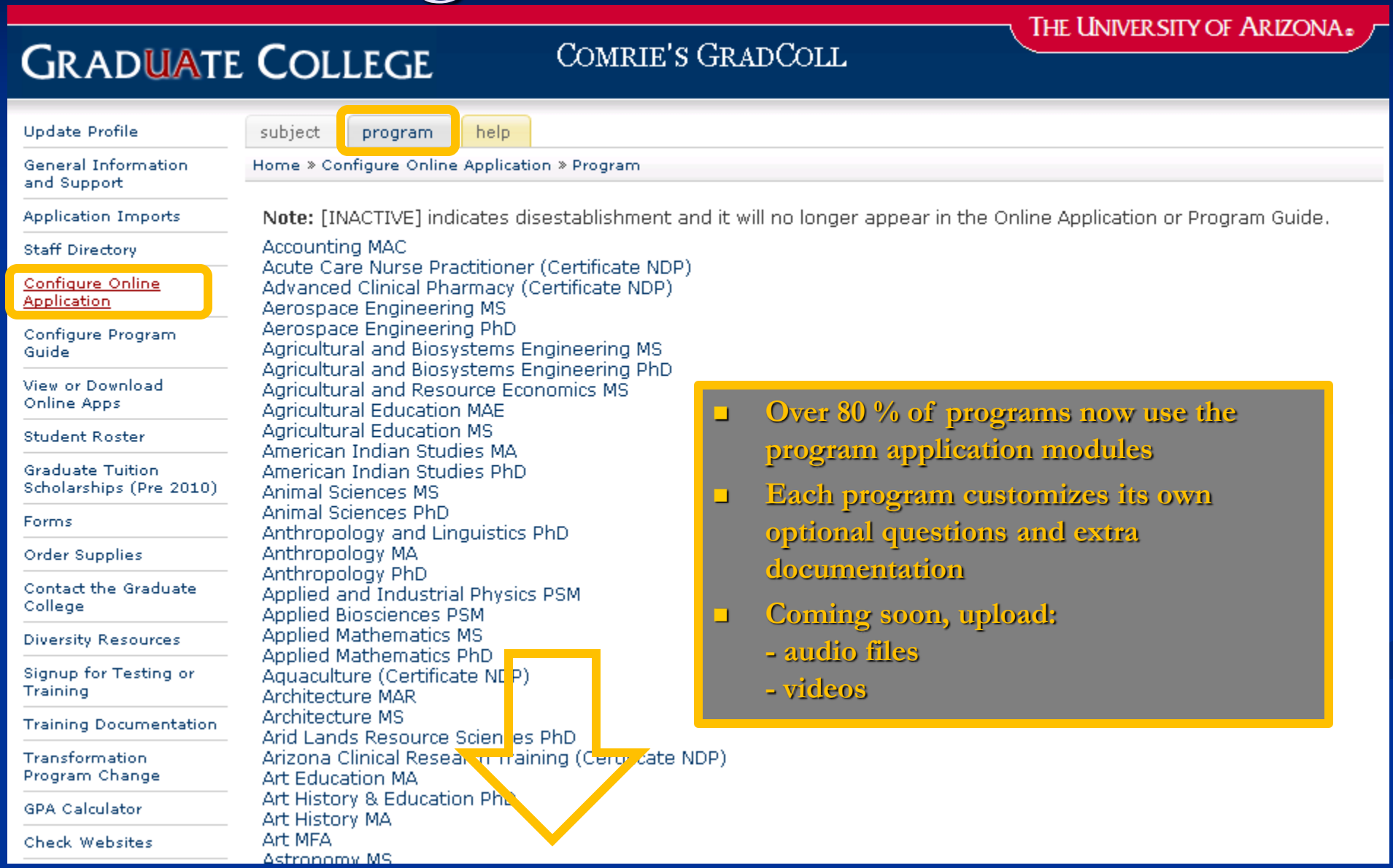
Dept/Program Detail



Add Letter-Writers



Program/Admin View



- Over 80 % of programs now use the program application modules
- Each program customizes its own optional questions and extra documentation
- Coming soon, upload:
  - audio files
  - videos

Edit Elements & Text

On this page you can edit information that affects your program's Online Application:

1. Applicant Instructions
2. Semester Restrictions
3. Letters of Recommendation
4. Program-level Questions

Applicant instructions for the Computer Science PhD program

These are the instructions that applicants will see when they choose to apply to this program using the Graduate College Online Application. Please do NOT use HTML in this area as this text will be emailed to applicants upon submitting their application as plain text. Note that any URLs entered with the format "*http://...*" will show up as links on the online application.

Thank you for your interest in The University of Arizona Department of Computer Science. Your application will be considered once you have submitted all required documentation. Incomplete applications will not be reviewed and will be automatically denied. Paper applications will no longer be accepted, please submit all materials via this online application.

DO NOT send hard copies of the application materials unless specifically requested by the department in a separate email.

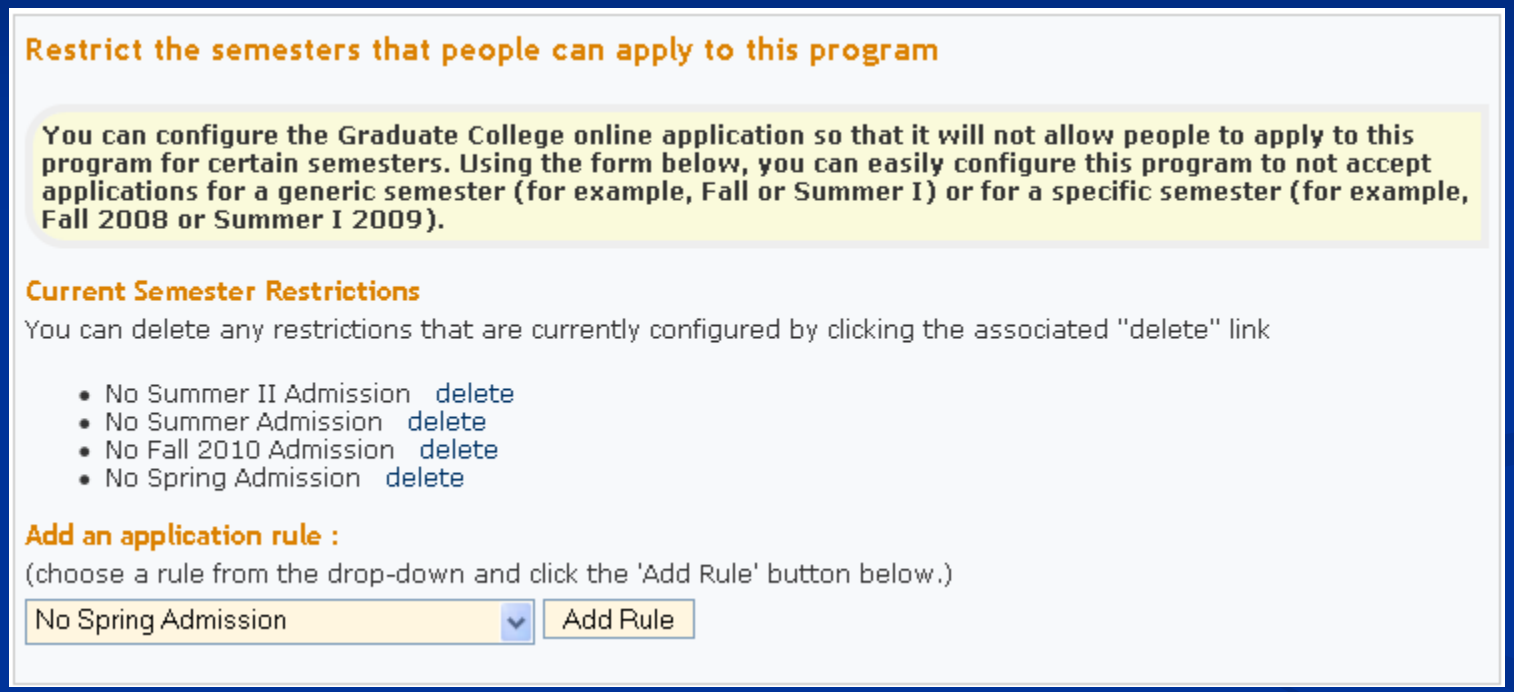
Please contact Computer Science Graduate Admissions if you have specific questions, gradadmissions@cs.arizona.edu .

Admission decision notification will be sent via email in March for a fall semester applicants. Please do not call the department regarding the status of your application, we will notify you via email as soon as a decision has been reached.

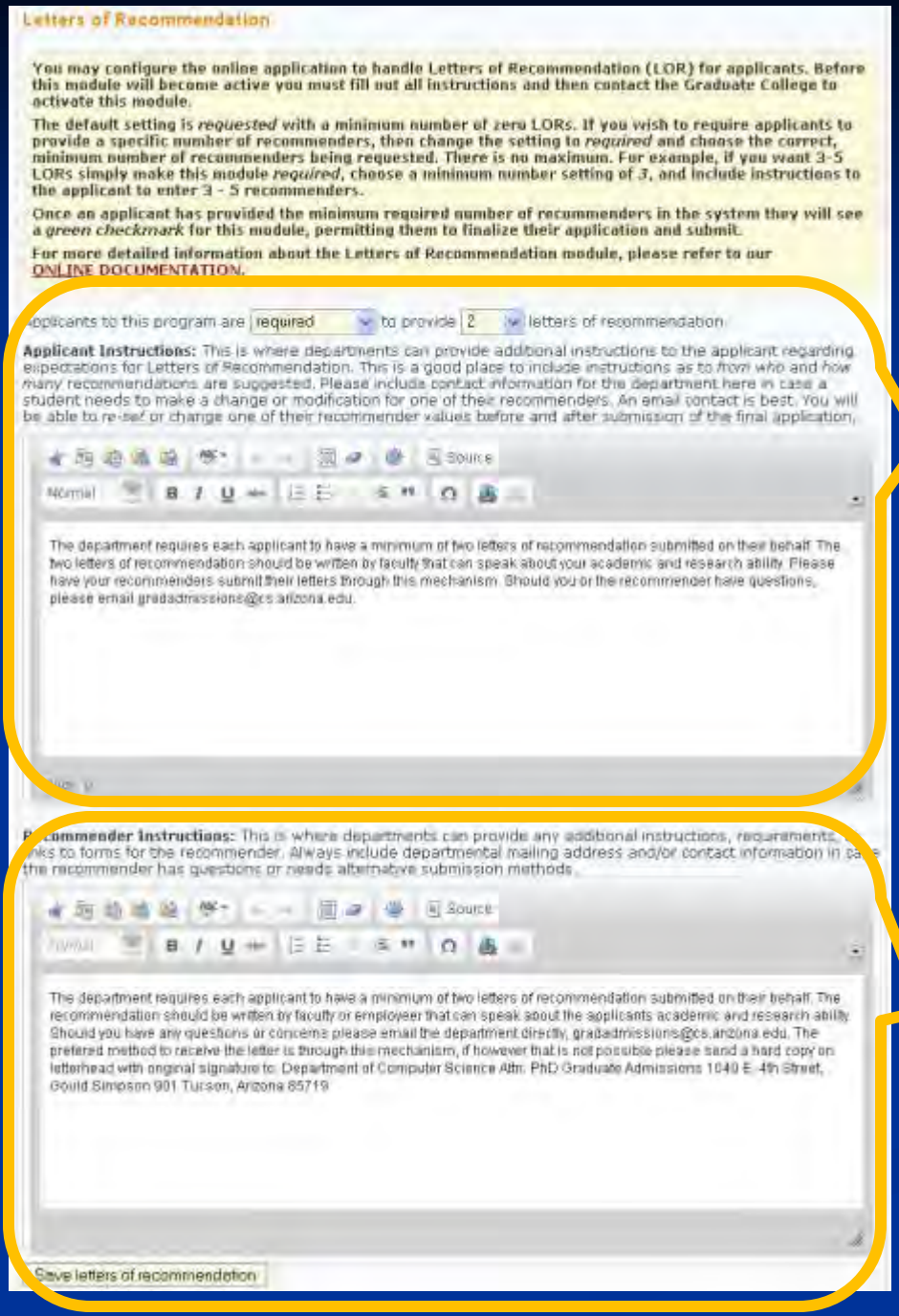
Information regarding the department, our faculty, and the courses we offer can be found at http://www.cs.arizona.edu/graduate/

Save instructions

Edit Elements & Text



Recommendation Letter Interface



Text for Applicant Instructions

Text for Recommender Instructions

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Manage application questions for program Computer Science PhD

- You can drag and drop questions below in order to change their order.
- Note that only ACTIVE questions actually appear on the Online Application. If a question is ACTIVE, you will see a *Deactivate* link next to it.
- Subject-level questions must be edited under the *Subject* tab.
- Any subject-level questions will be displayed to the applicant *before* program-level questions.

1. Please describe in a Statement of Purpose why you want to go to graduate school in computer science, what specific areas of computer science most interest you, why you are interested in the University of Arizona, and what you plan to do once you have completed your graduate degree. Please upload this document.
   Edit Delete Deactivate
2. **Graduate Record Examination (GRE):** In questions 4-6, please enter the letter A to indicate you do not yet have a score. Your application will not be reviewed until we receive a copy of the GRE score report. You may upload a copy of your GRE score report in Question #7 if the score report is available. If your score report is not currently available, please have ETS send your score report directly to The University of Arizona.
   Edit Delete Deactivate
3. Please tell us the date you took your GRE (month/year). If you have not yet taken your GRE, please report the month and year (MM/YY) you plan to take the GRE. Applications will not be considered for admission until the scores are reported.
   Edit Delete Deactivate
4. What is your verbal GRE score? Edit Delete Deactivate
5. What is your quantitative GRE score? Edit Delete Deactivate
6. What is your analytical writing GRE score? Edit Delete Deactivate
7. Please upload a copy of your GRE score report if it is available. Edit Delete Deactivate
8. If you took the GRE Computer Science subject test, please tell us your score. Edit Delete Deactivate
9. **Transcript Instructions:** You are required to submit official transcripts from all previous colleges and universities attended. For detailed information on what constitutes official transcripts please review the following web site: http://grad.arizona.edu/admissions/admissions-requirements/all-degree/transcript-requirements. This application will permit you to upload scanned or electronic versions of your transcripts and diplomas for initial evaluation purposes only and does not eliminate the need for official transcripts to be submitted after admission.
   Edit Delete Deactivate
10. **Transcripts:** Please upload a scanned or electronic version of your transcript(s), including the "key" from each university or college. The "key" is often on the back of your transcript, the side or bottom margin, or comes as a separate page from the university. You may upload all transcripts and keys as one file or you may separate by university or career and upload each set individually. Please be aware that there are only 5 upload areas to accommodate your transcripts and plan accordingly.
    Transcript 1:
    Edit Delete Deactivate
11. **Transcript 2:**
    Edit Delete Deactivate
12. **Transcript 3:**
    Edit Delete Deactivate
13. **Transcript 4:**
    Edit Delete Deactivate
14. **Transcript 5:**
    Edit Delete Deactivate
15. If known, please tell us your class rank (3 of 50, 17 of 120, etc...)
    Edit Delete Deactivate
16. **International Applicants Only:** Please tell us the rank of your program/school (top 5 in the country, top 10, etc...) Edit Delete Deactivate
17. If you have been involved in research, please describe, in an uploaded document, the project and your role in the research.
    Edit Delete Deactivate
18. In an uploaded document, please list any papers you have published in peer-reviewed journals. (full citation)
    Edit Delete Deactivate
19. Please attach a document listing any conferences at which you have presented. (date, conference, and name of presentation). If your presentation is available, please attach to this section also.
    Edit Delete Deactivate
20. Do you have any work experience in the field of Computer Science? If so, please tell us about this experience by uploading a brief work experience summary. We would like to know about positions held that you have used your computer science skills in internships, volunteer positions, part-time jobs, full-time jobs, etc...
    Edit Delete Deactivate
21. Please upload a current CV or resume.
    Edit Delete Deactivate
22. **Area of Interest and Faculty Advisor:** The most important thing you can do is to make sure your research interest fits within our program. Please take the time to determine if our faculty's area(s) of research match your own interests. Finding a good fit between you and a faculty mentor will be critical to your success in graduate school. Please review our faculty members and their research interests on our web site, http://www.cs.arizona.edu/personnel/faculty.html. This will give you a good sense of what they and their students are researching. Please do not contact the faculty member directly for funding or research opportunities. All faculty members are shown the applications for those students that have indicated they are interested in their specific areas of research.

Program-Specific Questions

- Statement
- GRE
- Transcripts
- Extra questions, e.g.:
  - Interest areas
  - Special essay
  - Written work samples
  - Etc.

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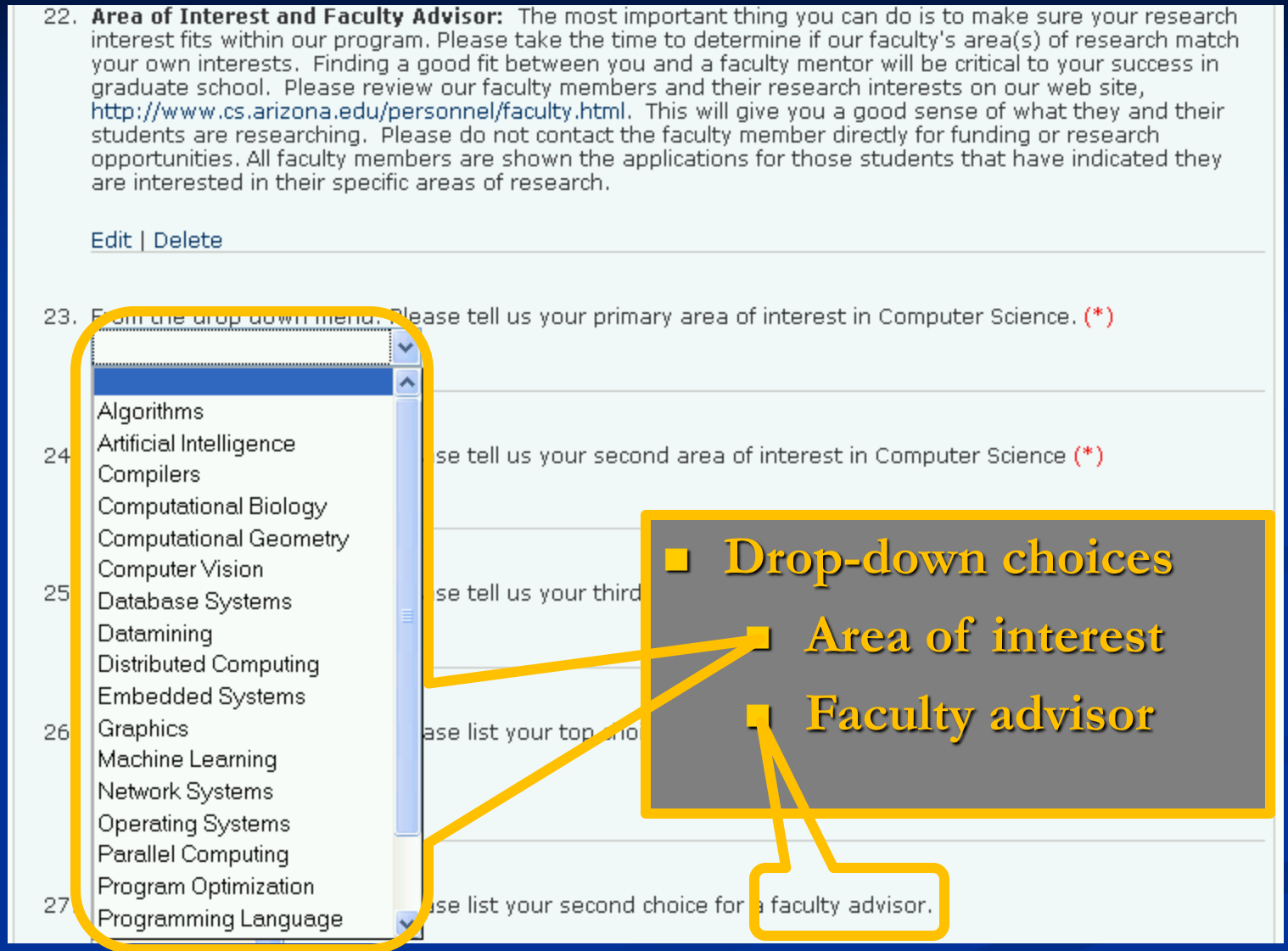
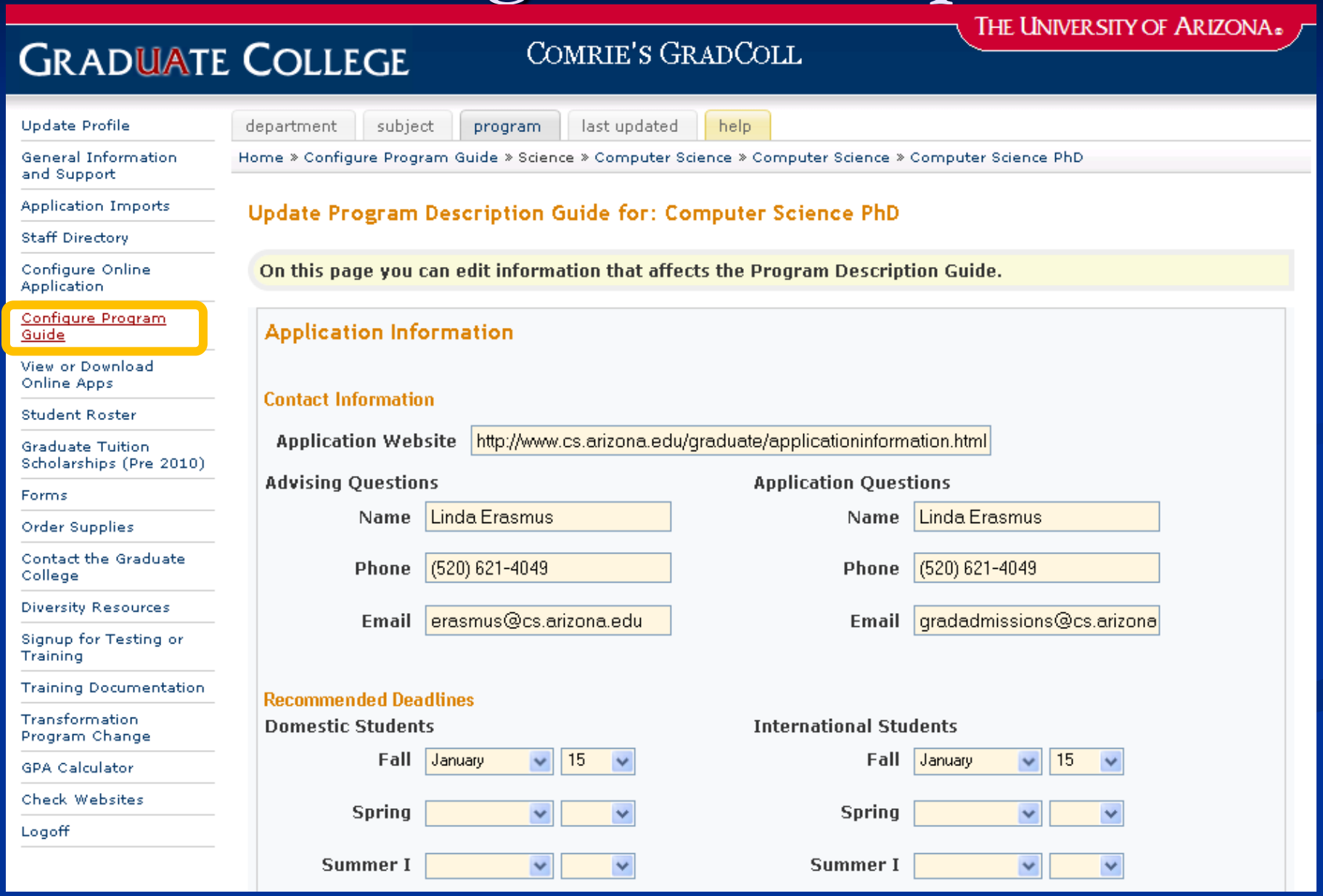
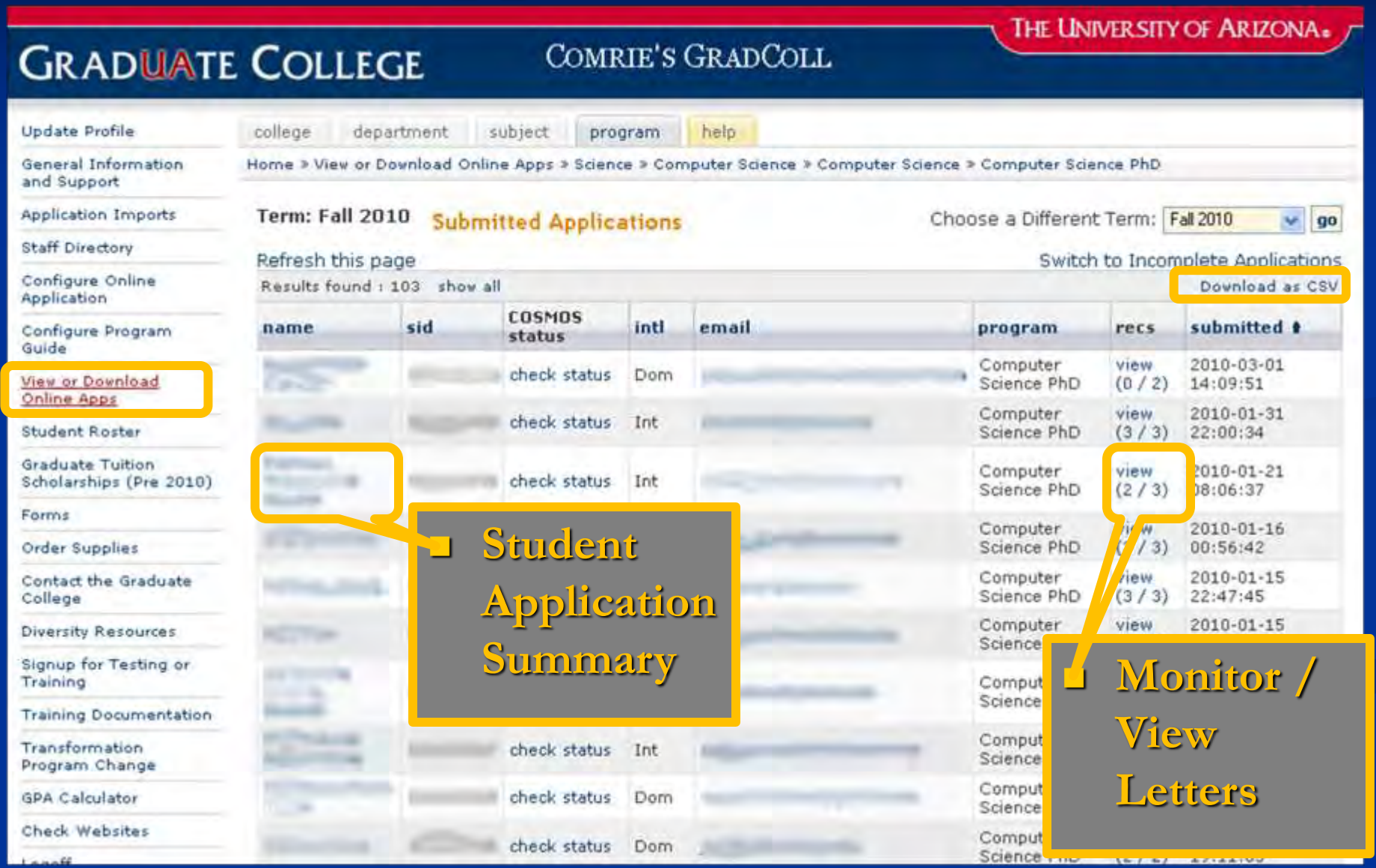

22. **Area of Interest and Faculty Advisor:** The most important thing you can do is to make sure your research interest fits within our program. Please take the time to determine if our faculty's area(s) of research match your own interests. Finding a good fit between you and a faculty mentor will be critical to your success in graduate school. Please review our faculty members and their research interests on our web site, http://www.cs.arizona.edu/personnel/faculty.html. This will give you a good sense of what they and their students are researching. Please do not contact the faculty member directly for funding or research opportunities. All faculty members are shown the applications for those students that have indicated they are interested in their specific areas of research.
Edit | Delete
23. From the drop down menu: Please tell us your primary area of interest in Computer Science. (*)
Algorithms
Artificial Intelligence
Compilers
Computational Biology
Computational Geometry
Computer Vision
Database Systems
Datamining
Distributed Computing
Embedded Systems
Graphics
Machine Learning
Network Systems
Operating Systems
Parallel Computing
Program Optimization
Programming Language
24 se tell us your second area of interest in Computer Science (*)
25 se tell us your third
26 ase list your top
27 se list your second choice for a faculty advisor.
Drop-down choices
Area of interest
Faculty advisor

Edit Program Descriptions



See Applicants & Status



Application Summary

Submitted Application

University of Arizona Graduate College
Application for Admission

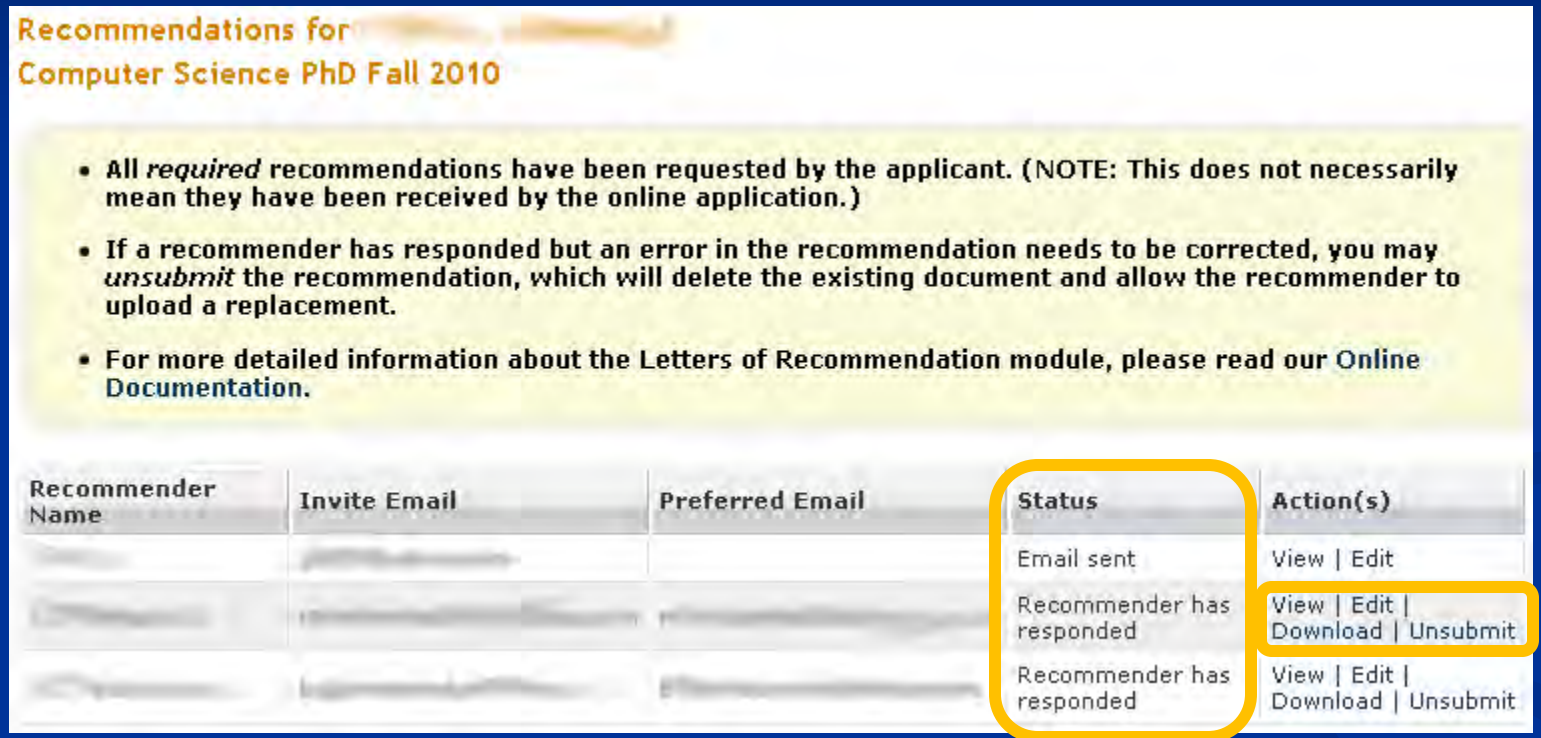
Application Summary

Program:	Computer Science PhD
Semester:	Fall 2011
Department:	Computer Science
Type of Student:	International
Payment:	$75.00 on October 28, 2010, 10:49 am (order number 1288288176368)
Submitted:	2010-10-29 09:14:05

Biographical Data

Last name:	[redacted]
First name:	[redacted]
Gender:	Male
Birth Date:	[redacted]
Cell Phone:	[redacted]
Email:	[redacted]
Veteran:	No
Arizona Resident:	No

Monitor/View Letters



Recommendations for [redacted]

Computer Science PhD Fall 2010

- All *required* recommendations have been requested by the applicant. (NOTE: This does not necessarily mean they have been received by the online application.)
- If a recommender has responded but an error in the recommendation needs to be corrected, you may *unsubmit* the recommendation, which will delete the existing document and allow the recommender to upload a replacement.
- For more detailed information about the Letters of Recommendation module, please read our Online Documentation.

Recommender Name	Invite Email	Preferred Email	Status	Action(s)
[redacted]	[redacted]		Email sent	View | Edit
[redacted]	[redacted]	[redacted]	Recommender has responded	View | Edit | Download | Unsubmit
[redacted]	[redacted]	[redacted]	Recommender has responded	View | Edit | Download | Unsubmit

Coming Soon…

- Faculty score/comment admissions review
- Degree progress/audit
  - Currently have pre-populated PDF forms for hardcopy signatures
  - E-signatures soon for plan of study, comps exam, proposal, defense, etc.
  - Simple program coordination functions: email reminders to students, due dates, auto-audit, etc.

Grad Analytics

- Data and Analyses for Grad School staff & Dept/Program faculty/staff
  - Point-in-Time Application, Admit and Enrollment Data (weekly census)
  - Program Data (NRC variables, all Masters/PhD)
  - Graduate Programs Assessment (internal review)
  - National Data Sources (CGS, SED, etc.)

Program Assessment

Not for distribution. Instead, direct to http://grad.arizona.edu/gc/data

The University of Arizona

PhD Programs not Included in National Research Council (NRC) Assessment of Re

Completion Rates[1] (includes all students-- both part-time and full-time)

6-yr Completion Rates use 5 entering cohorts: Academic Years 1996-2000

	All			Male			Female			All	
	Students in Entering Cohorts	Completions	6-yr Completion Rate	Students in Entering Cohorts	completions	6-yr Completion Rate	Students in Entering Cohorts	completions	6-yr Completion Rate	Median Time to Degree[2]	n
Anthropology & Linguistics	11	2	18%	3	1	33%	8	1	13%	[illegible]	4
Arid Lands Resource Sciences	18	1	6%	10	0	0%	8	1	13%	5.25	7
Comp Cultural & Literary Studies	29	7	24%	6	3	50%	23	4	17%	6.00	11
Educational Leadership	85	26	31%	35	9	26%	50	17	34%	5.00	15
Educational Psychology	45	19	42%	13	8	62%	32	11	34%	4.00	15
Entomology	4	2	50%	3	2	67%	1	0	0%	8.50	1
Family & Consumer Sciences	33	12	36%	10	3	30%	23	9	39%	6.00	12
Higher Education	97	37	38%	51	18	35%	46	19	[illegible]	[illegible]	37
Insect Science	9	1	11%	5	1	20%	4	0	0%	6.00	1
Information Resources & Library Sci	8	4	50%	6	3	50%	2	1	[illegible]	[illegible]	[illegible]
Language, Reading & Culture	114	48	42%	32	9	28%	82	39	48%	5.00	24
Mining Geological & Geophysical Eng	39	13	33%	33	11	33%	6	2	[illegible]	[illegible]	1
Natural Resources	48	13	27%	27	9	33%	21	4	19%	5.25	16
Second Lang Acquisition & Teaching	52	27	52%	18	9	50%	34	18	53%	5.00	16
Speech, Language and Hearing Sciences	16	9	56%	5	1	20%	11	8	73%	4.50	5
Special Education	66	20	30%	20	7	35%	46	13	28%	4.50	14
Teaching & Teacher Education	48	14	29%	21	6	29%	27	8	30%	6.50	8

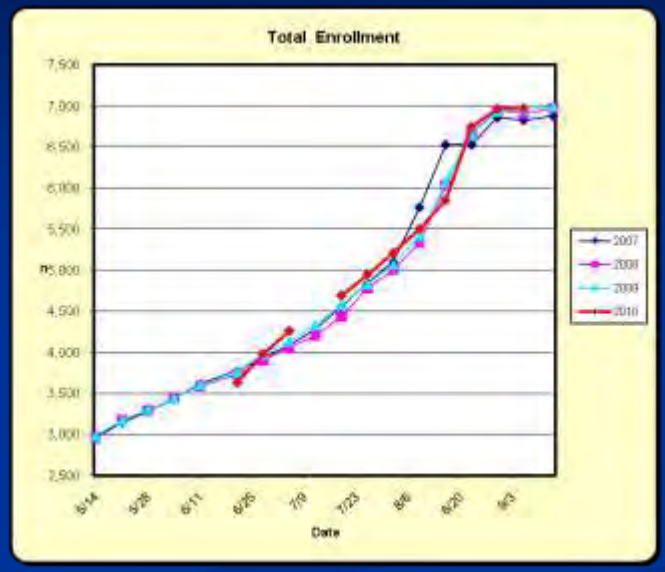
More

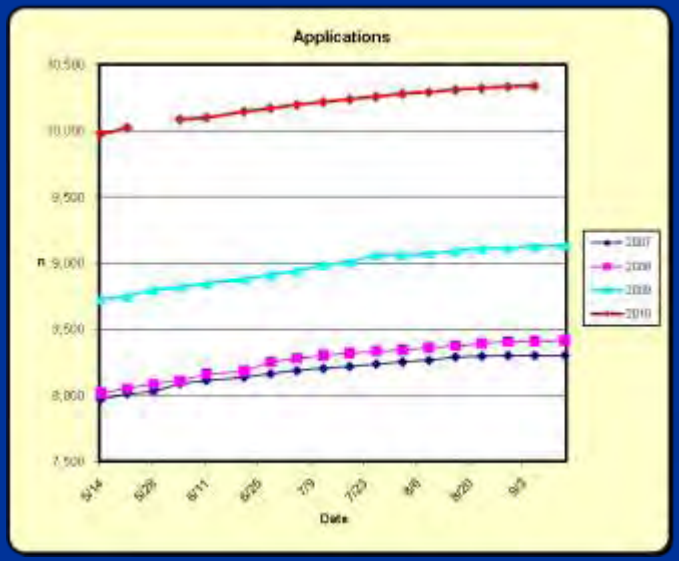
Arts and Humanities

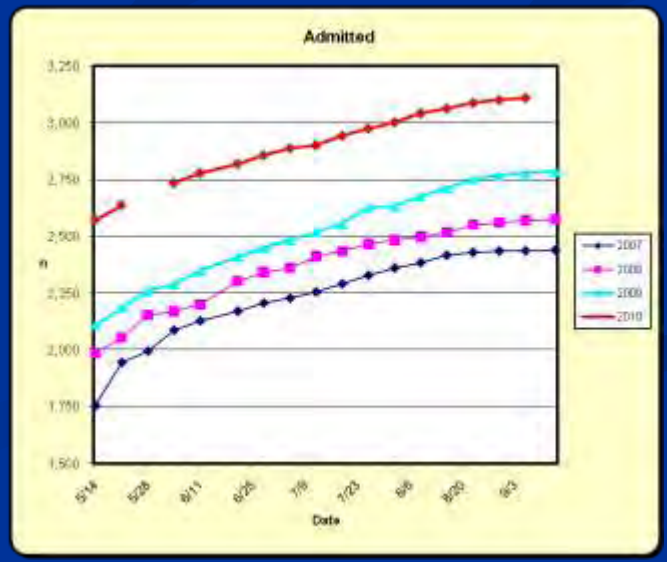
8-yr Completion Rates based on 3 entering cohorts: Academic Years 1996-1998

	All			Male			Female			All	
	Students in Entering Cohorts	Completions	8-yr Completion Rate	Students in Entering Cohorts	Completions	8-yr Completion Rate	Students in Entering Cohorts	Completions	8-yr Completion Rate	Median Time to Degree[2]	n

Point-in-time (PIT) Reports







Use of Analytics

- Two broad purposes
  - Monitoring and managing enrollment & degree progress
    - Projecting matriculations, milestones, degrees awarded, etc.
  - Working with programs toward improvement
    - Having real data changes the conversation, especially with national comparisons like NRC
    - Programs usually want to know how they can improve a particular metric – an opportunity for best practice
- An in-house or central institutional research and analytics specialist is very useful
  - These are the metrics of your processes

Communication strategies

- Virtual chats/on line information
- Twitter
- Wiki use (resource for graduate coordinators)
- Face book (public and private)
- Graduate Catalog
- Virtual GLC

Website & more

VirginiaTech
Invent the Future

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Search

GRADUATE SCHOOL

Prospective Students | Newly Admitted Students | Current Students | International Students | Faculty & Staff | Alumni

- Admissions
- Academics
- Financial Matters
- Student Life
- International Graduate Student Services
- The Graduate School

Apply Now

Applying to Virginia Tech

The CAMPAIGN for VIRGINIA TECH Invent the Future

Follow us on Twitter

Nov 16 19:24:05
Sidewalk Chalk Showdown: Show your artistic talent; draw your country's flag at the GLC main entrance. Get chalk from GLC rm 110- stndt svcs

Nov 12 20:25:15

Nov 09 18:08:43

Automatic Tweets

Upcoming Final Examinations

Alper Erturk
(PHD, EM) 11/20/09 10:00 AM
"Electromechanical Mo..."

More >>

Get This Widget

Extended Campus

Hampton Roads • Roanoke
Richmond • Southwest Virginia
National Capital Region

Virginia Tech

Featured Graduate Student

Laura is a 23 year old grad student aiming to prove that no woman is one-dimensional. She is earning her masters in political science, reaching out to Girl Scouts and teenage girls in her free time, and she has competed twice in the Miss Virginia pageant, earning over $5,000 in scholarships.

More >>

Graduate School Blog

Call for Graduate Student Award Nominations
Thursday, November 05, 2009

International Education Week observed November 16-20, 2009
Tuesday, November 03, 2009

News

Pamplin professors find social media firms compete by reachi...
Thursday, November 19, 2009

Urban and regional planning graduate student wins Outstandin...
Thursday, November 12, 2009

Featured Information

Transformative Graduate Education:
- Graduate Scholars Society
- Citizen Scholar Engagement
- Graduate School Courses

IGERT at Virginia Tech

Graduate Ombudsperson

Graduate Student Assembly

Graduate Honor System

Expectations for Graduate Study

Alpha Epsilon Lambda

Postdoctoral Association

GLC Weekly

Feeds

VirginiaTech
Graduate School

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Graduate School
Graduate Life Center at Donaldson Brown(0325)
Blacksburg, VA 24061
Contact Us
Updated: Wednesday, November 18, 2009, 17:46 EST
Privacy Statement

Blogs

Expectations for graduate study

Global Perspectives program

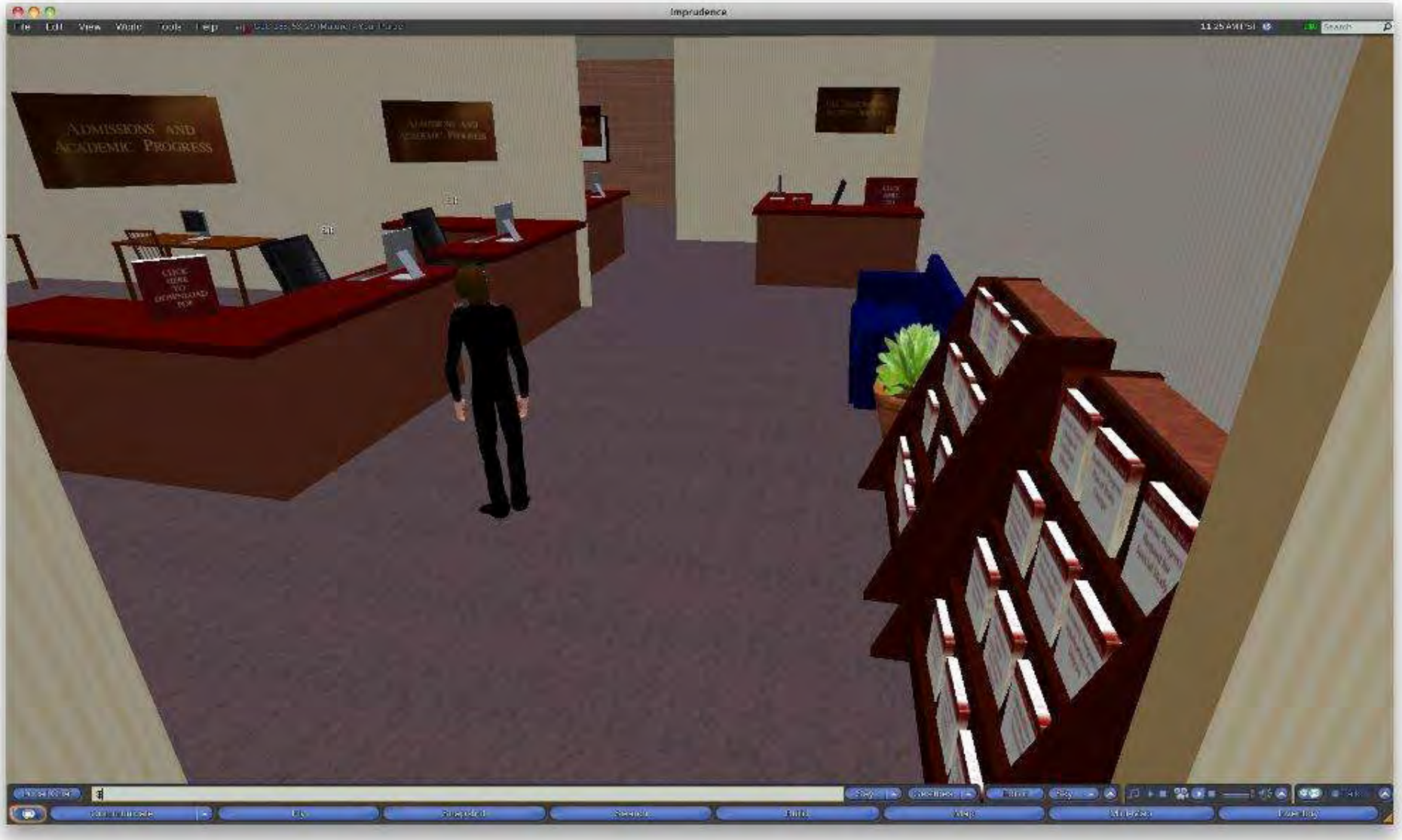
Digital Signatures

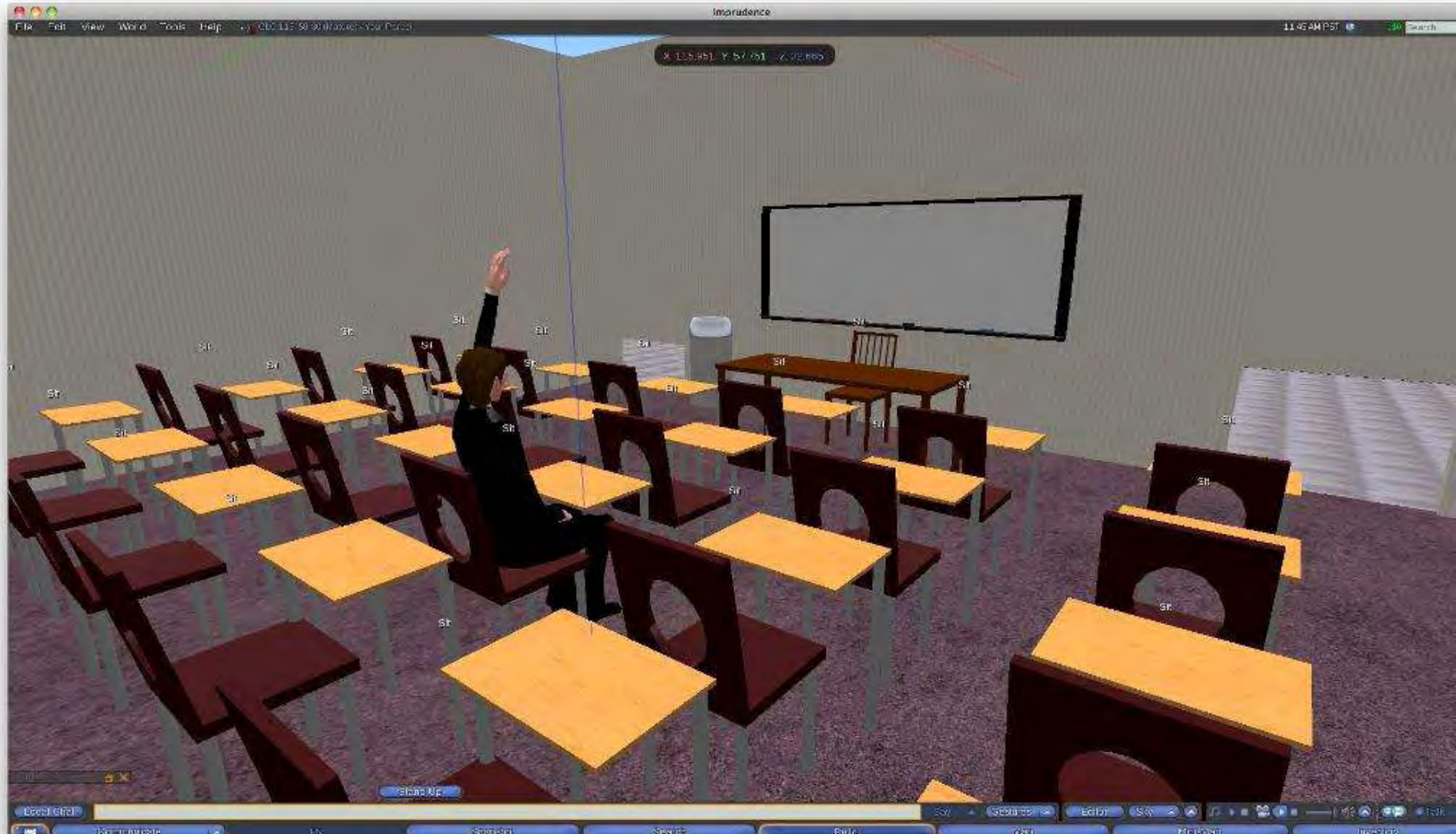
Scheduling examinations
Voting
Submission of ETD

automatic fill-in, drop down menus &
Email notifications

Virtual GLC

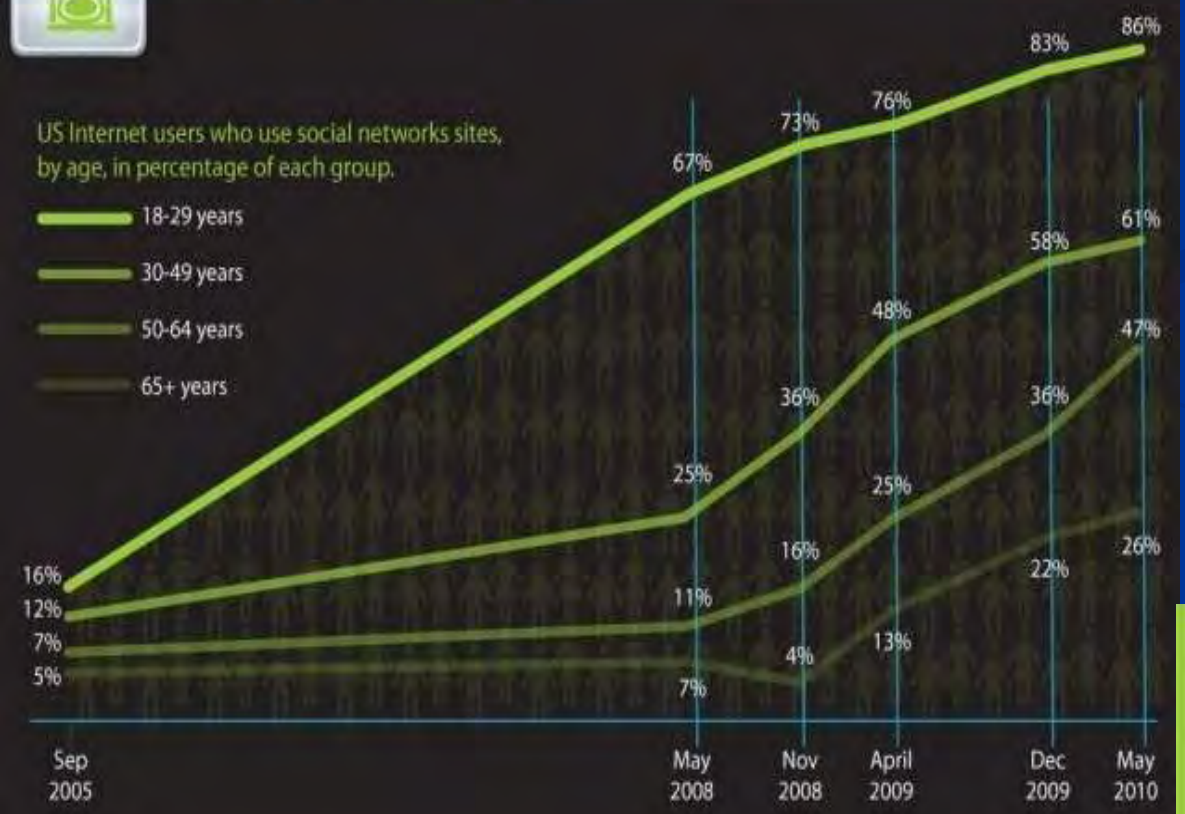
.: Virtual GLC
Main menu
HOME
CREATE ACCOUNT
Login
FIRST NAME
LAST NAME
login
forgot password
Imprudence Viewer
1.4.0-beta-2 Windows
1.4.0-beta-2 Mac (Intel)
1.4.0-beta-2 Linux 32 bit / 64 bit


Imprudence
ADMISSIONS AND ACADEMIC PROGRESS


Imprudence
File Edit View World Tools Help
11:45 AM PST
Stand Up

THE GROWTH OF SOCIAL MEDIA

Users Timeline



Sources:
www.simplyzesty.com/social-media/decade-social-media/
www.socialnomics.net/2011/06/07/10-new-social-media-statistics/
www.2newsmedia.co.uk/2011/05/30/2011-social-media-statistics-show-huge-growth/
www.ashanoo.com/2011/01/31/16-social-media-statistics-you-might-surprise-you/
http://www.macworld.com/article/145719/2010/01/facebook_jobs.html
www.vanco
www.pingdom.com
www.google.com/trends

SEJ

Social Media Visitor Growth
Daily Unique Visitors
Social networks with at least seven million site visitors per day
Facebook
310M Daily unique visitors
Orkut
51M
Qzone
37M
StumbleUpon
27,5M
Twitter
22M
Yahoo Answers
15M
Flickr
10.9M
Odnoklassniki
9.3M
Linkedin
8M
Vkontakte
8M
Badoo
8M
Mixi
7M
Membership Share
(Percent)
MySpace
1.06
Twitter
1.15
Others
13.80
YouTube
20,50%
Facebook
63.46%
YouTube:
1 in 4 Americans
watches a video online every day
Facebook
640M Registered users
600M
500M
400M
300M
200M
100M
0
Facebook
Twitter
MySpace
Evolution
Million of registered users*
2004
2005
2006
2007
2008
2009
2010
2011

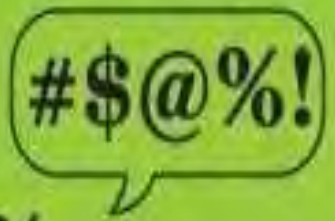
53 % of employers research potential job candidates on social networks

Over a third

said a social networking profile proved they had lied about their qualifications on their CV.

13 %

claimed a potential employee had made discriminatory comments on their Facebook page.



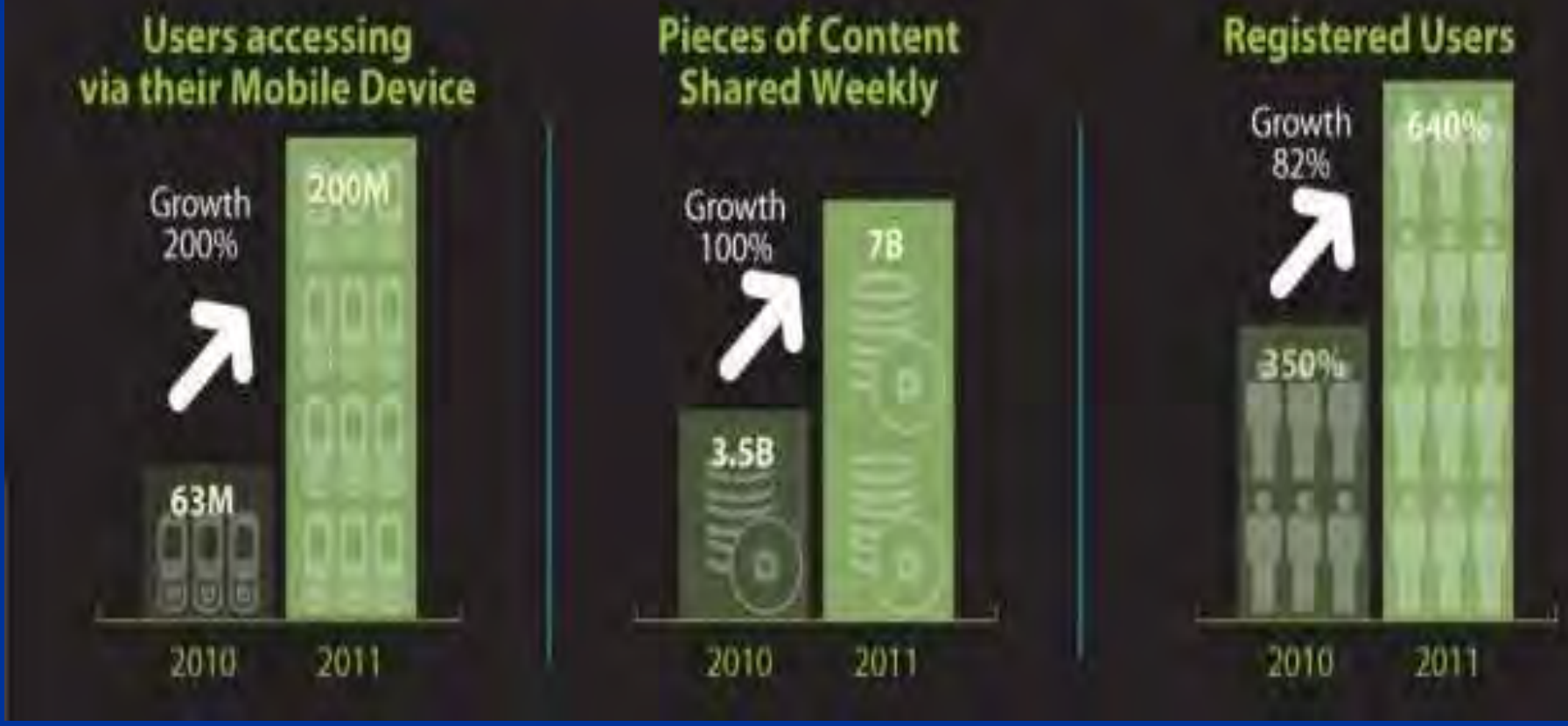
9 %

said provocative or inappropriate photographs had been posted on the account.

During the average 20-minute period in 2010, there were:

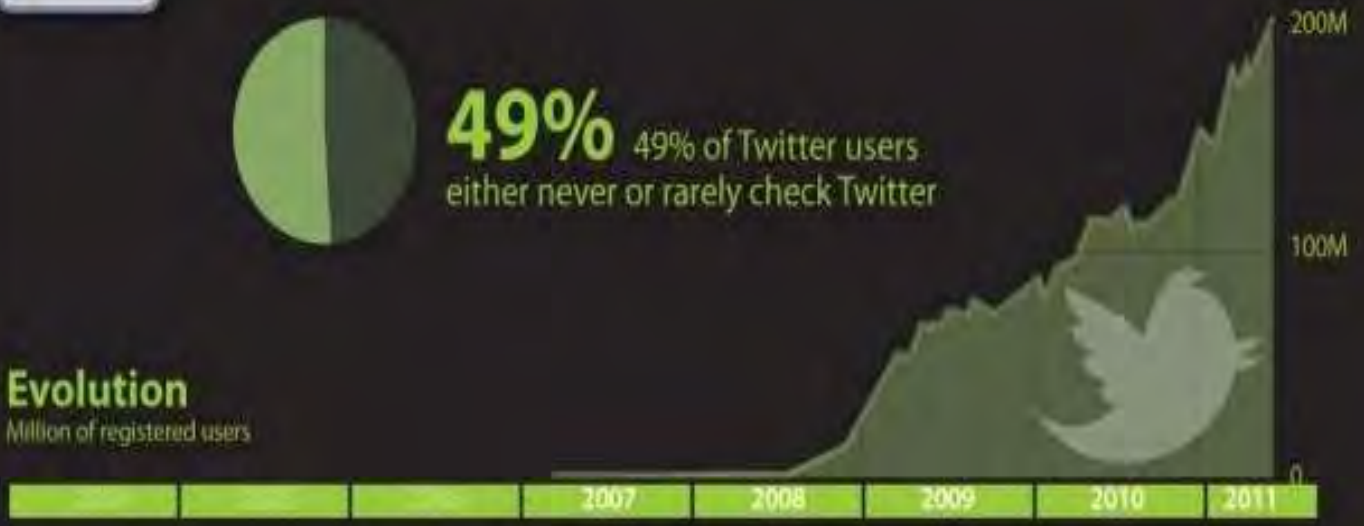
5870,000 wall posts | 2,716,000 photos uploaded | 10,208,000 comments posted

Facebook 2010 - 2011 Growth



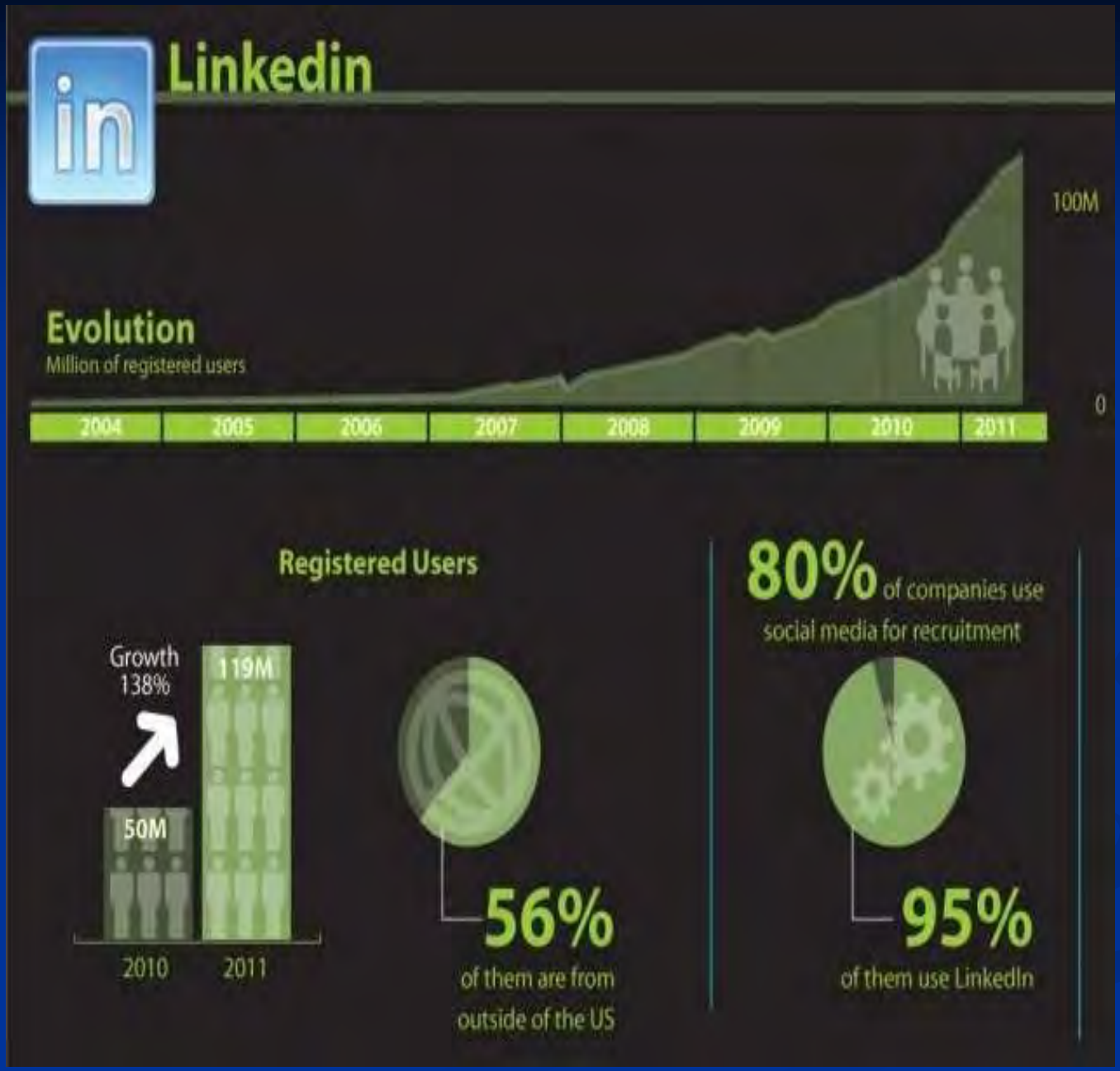
Twitter

49% 49% of Twitter users either never or rarely check Twitter



Evolution
Million of registered users

Twitter 2010 - 2011 Growth


Linkedin
100M
0
Evolution
Million of registered users
2004
2005
2006
2007
2008
2009
2010
2011
Registered Users
Growth
138%
119M
50M
2010
2011
56%
of them are from
outside of the US
80% of companies use
social media for recruitment
95%
of them use LinkedIn

Wikipedia

Number of Articles

Growth 21%

14M

2010 2011

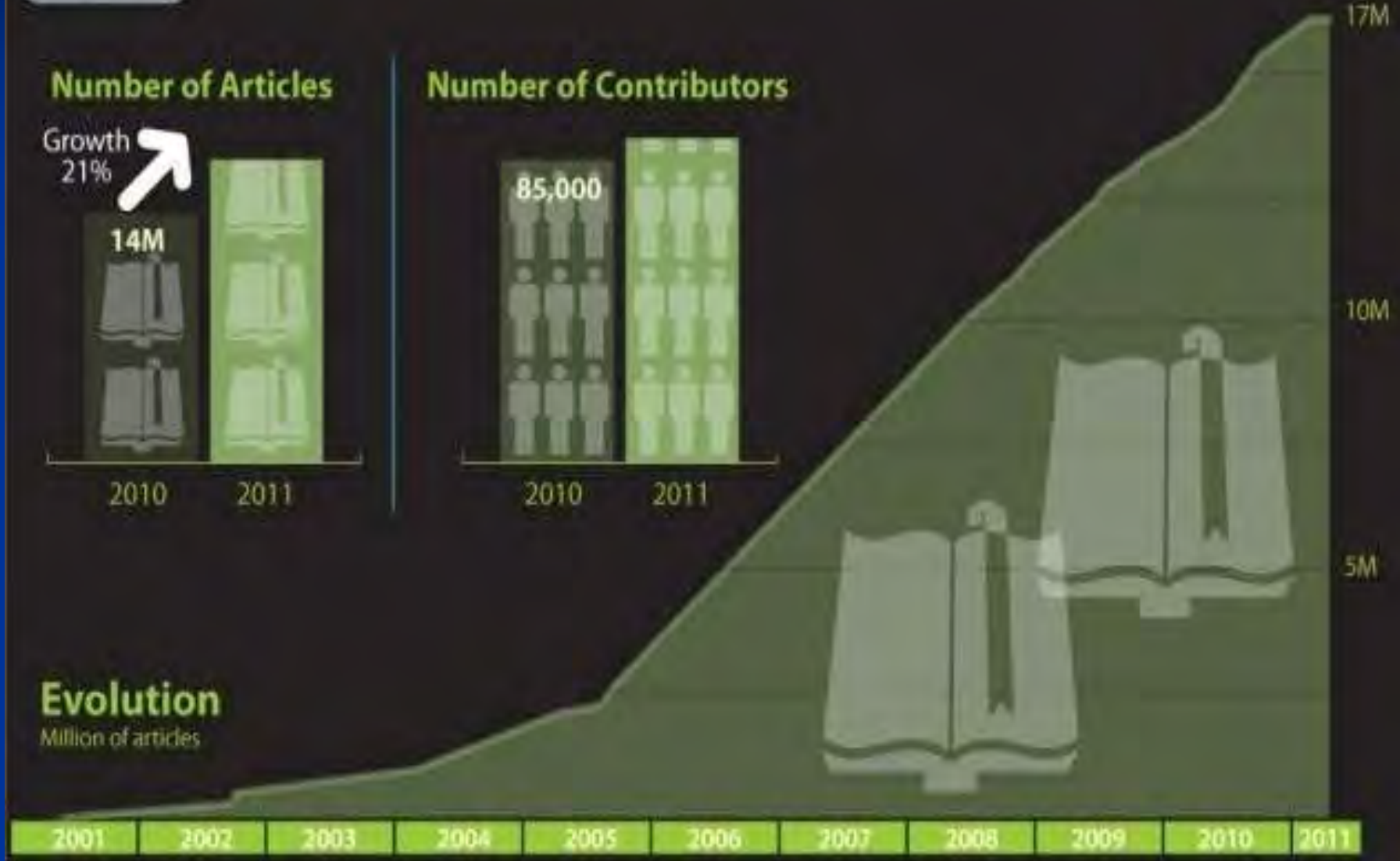
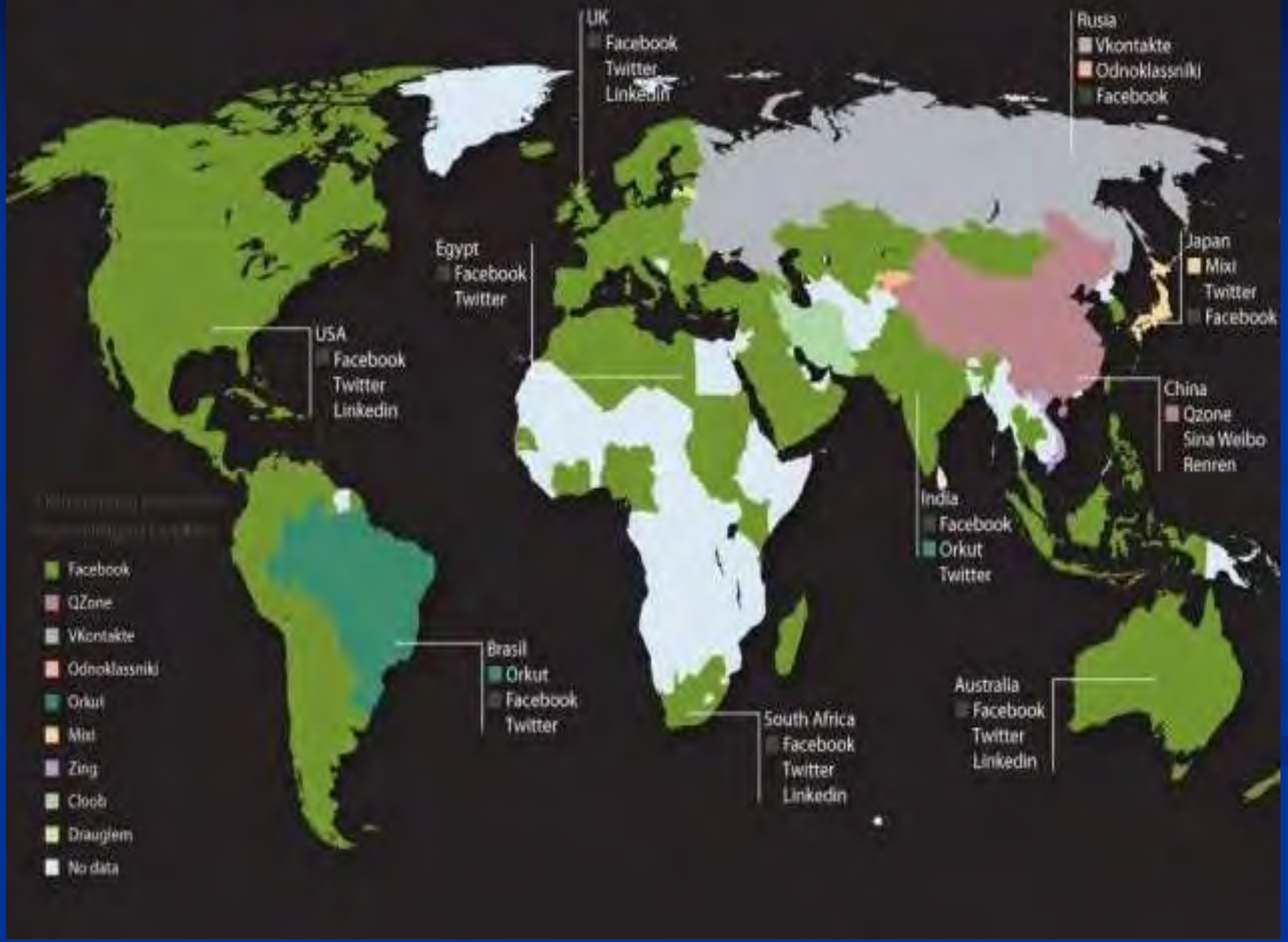
Number of Contributors

85,000

2010 2011

Evolution

Million of articles



The World of Social Media