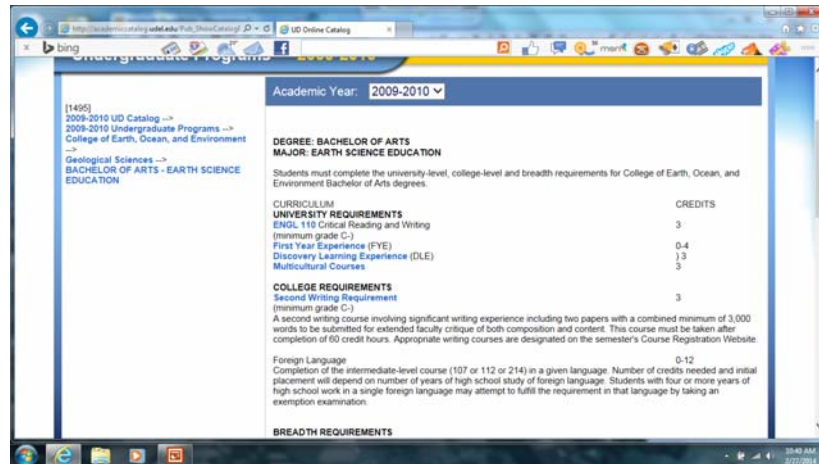




Curriculum and teaching

One of the following			
GEOL 107	General Geology		4
GEOL 105/GEOL 116	Geologic Hazards and their Human Impact and Laboratory		
GEOL 113	Earth Science		
GEOL 300	Earth's Materials I: Minerals		4
GEOL 302	Earth's Materials II: Rocks		4
GEOL 303	Earth's Surface I: Surficial Processes		4
GEOL 304	Earth's Surface II: Stratigraphy		4
GEOL 305	Earth's Lithosphere I: Structural Geology and Plate Tectonics		4
GEOL 306	Earth's Lithosphere II: Field Geology		4
GEOL 307	Earth's History I: Paleobiology		4
GEOL 308	Earth's History II: Earth System Science		4
MATH 241/MATH 242	Analytic Geometry and Calculus A and B		8
CHEM 103/CHEM 104	General Chemistry		8
PHYS 201/PHYS 202	Introductory Physics I and II		8
Geology Electives (GEOL 385 or any 400-level or other GEOL courses approved in writing by department, including field courses taken as transfer work) A minimum grade of C- is required for any GEOL courses that count for the major.			9-10
Two of the following:			6-8
GEOG 250	Computer Methods in Geography		
GEOG 372	Geographic Information Systems		
GEOG 471	Advanced Geographic Information Systems		
FREC 480	Geographic Information Systems in Natural Resource Management		
MATH 243	Analytic Geometry and Calculus C		
MATH 302	Ordinary Differential Equations		
Other courses as approved in writing.			
ELECTIVES After required courses are completed, sufficient elective credits must be taken to meet the minimum credit requirement for the degree.			
CREDITS TO TOTAL A MINIMUM OF			124

Curriculum and teaching



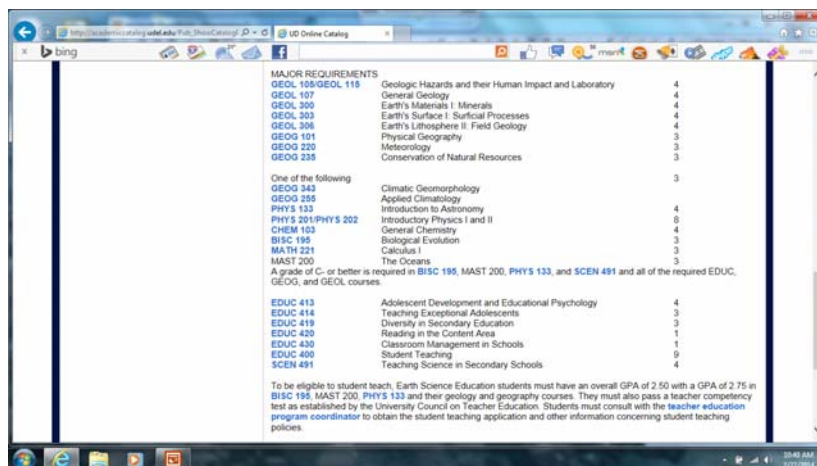
Academic Year: 2009-2010

DEGREE: BACHELOR OF ARTS
MAJOR: EARTH SCIENCE EDUCATION

Students must complete the university-level, college-level and breadth requirements for College of Earth, Ocean, and Environment Bachelor of Arts degrees.

CURRICULUM	CREDITS
UNIVERSITY REQUIREMENTS	
ENGL 110 Critical Reading and Writing (minimum grade C-)	3
First Year Experience (FYE)	0-4
Discovery Learning Experience (DLE)	13
Multicultural Courses	3
COLLEGE REQUIREMENTS	
Second Writing Requirement (minimum grade C-)	3
A second writing course involving significant writing experience including two papers with a combined minimum of 3,000 words to be submitted for extended faculty critique of both composition and content. This course must be taken after completion of 60 credit hours. Appropriate writing courses are designated on the semester's Course Registration Website.	
Foreign Language	0-12
Completion of the intermediate-level course (107 or 112 or 214) in a given language. Number of credits needed and initial placement will depend on number of years of high school study of foreign language. Students with four or more years of high school work in a single foreign language may attempt to fulfill the requirement in that language by taking an exemption examination.	
BREADTH REQUIREMENTS	

Curriculum and teaching

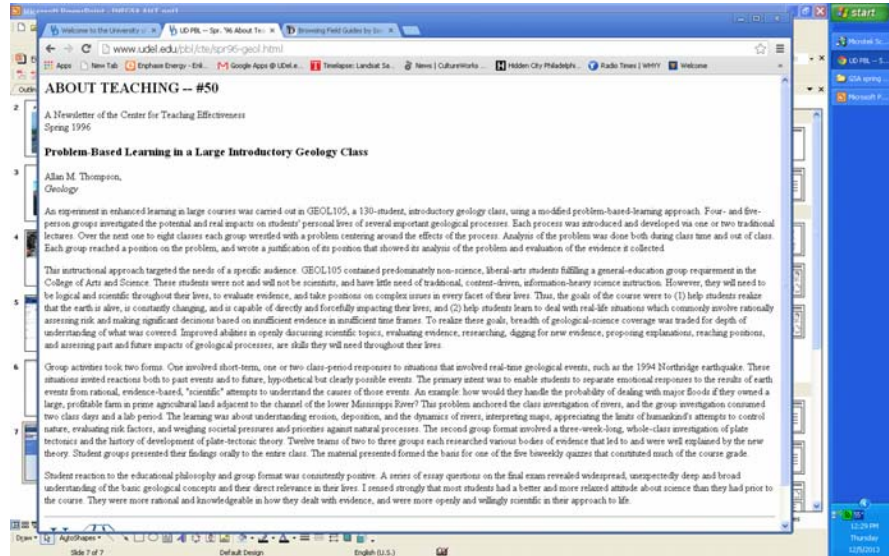


MAJOR REQUIREMENTS

GEOL 105/GEOL 118	Geologic Hazards and their Human Impact and Laboratory	4
GEOL 107	General Geology	4
GEOL 200	Earth's Materials I: Minerals	4
GEOL 203	Earth's Surface I: Surface Processes	4
GEOL 306	Earth's Lithosphere II: Field Geology	4
GEOG 101	Physical Geography	3
GEOG 220	Meteorology	3
GEOG 235	Conservation of Natural Resources	3
One of the following		3
GEOG 343	Climatic Geomorphology	
GEOG 255	Applied Climatology	
PHYS 133	Introduction to Astronomy	4
PHYS 201/PHYS 202	Introductory Physics I and II	8
CHEM 103	General Chemistry	4
BISC 195	Biological Evolution	3
MATH 221	Calculus I	3
MAST 200	The Oceans	3
A grade of C- or better is required in BISC 195, MAST 200, PHYS 133, and SCEN 491 and all of the required EDUC, GEOG, and GEOL courses.		
EDUC 413	Adolescent Development and Educational Psychology	4
EDUC 414	Teaching Exceptional Adolescents	3
EDUC 419	Diversity in Secondary Education	3
EDUC 420	Reading in the Content Area	1
EDUC 430	Classroom Management in Schools	1
EDUC 440	Student Teaching	9
SCEN 491	Teaching Science in Secondary Schools	4

To be eligible to student teach, Earth Science Education students must have an overall GPA of 2.50 with a GPA of 2.75 in BISC 195, MAST 200, PHYS 133 and their geology and geography courses. They must also pass a teacher competency test as established by the University Council on Teacher Education. Students must consult with the teacher education program coordinator to obtain the student teaching application and other information concerning student teaching policies.

Curriculum and teaching



Field trips



DOC's LAWS of FIELD GEOLOGY

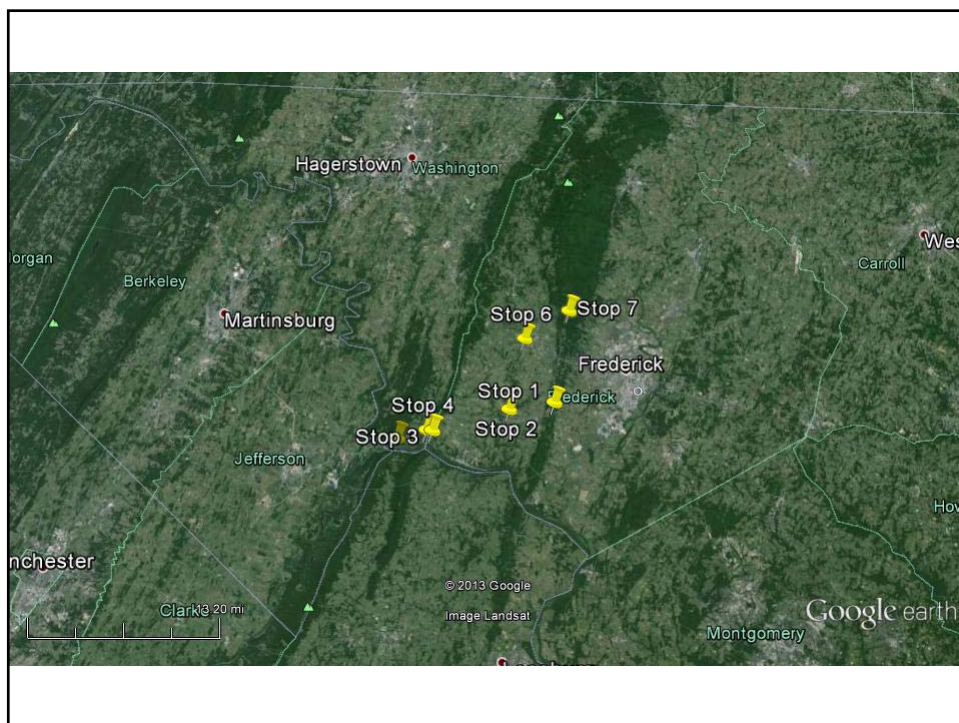
- The rocks are right.
- Outcrops are uphill.
- The rule of outcrops: If you examine (n) outcrops, the critical information is in the (n+1) outcrop.
- Absence of evidence does not mean evidence of absence.
- Believe it and you will see it.
- When in doubt, draw a picture.
- When out of breath, take strike and dip.
- Always draw the cross-section in the field.
- Never spit into the wind or piss up-dip.
- Leave gates the way you found them.
- (open or closed)
- Don't drink all your water before noon.
- If you can't identify it, take a sample.
- Always know where you are.
- It's never too late to say "XXX it!"

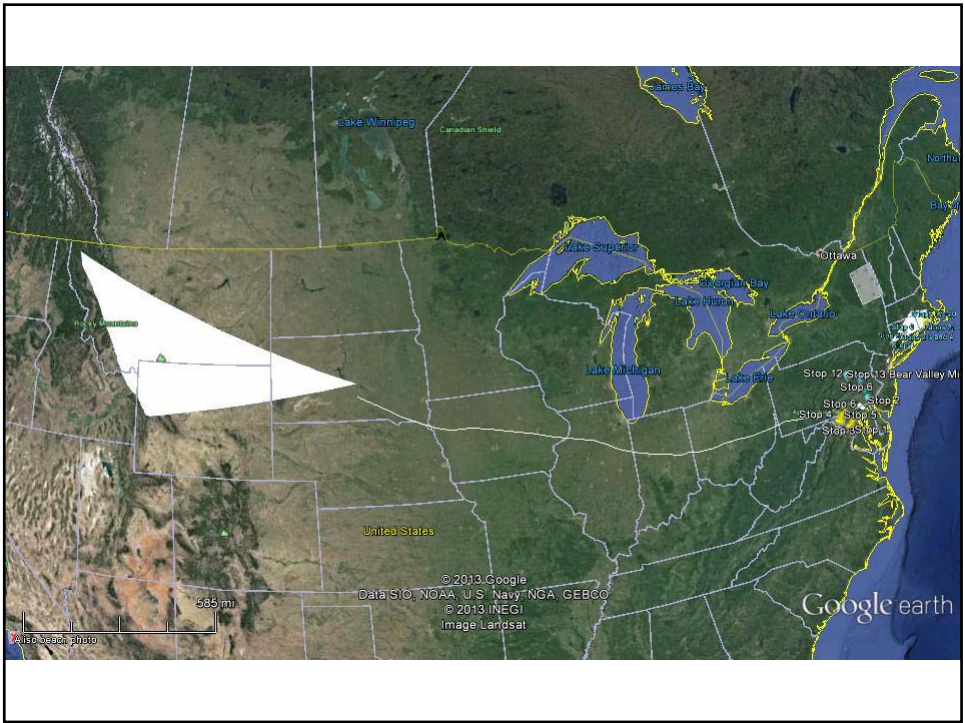
Geology 106 – the Appalachian transect



Bear Valley Strip Mine: Shamokin Pa

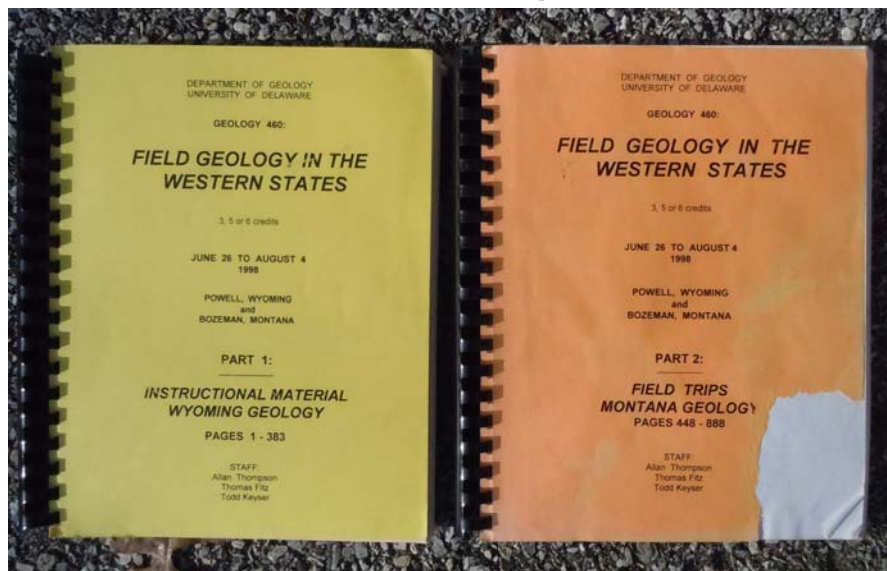




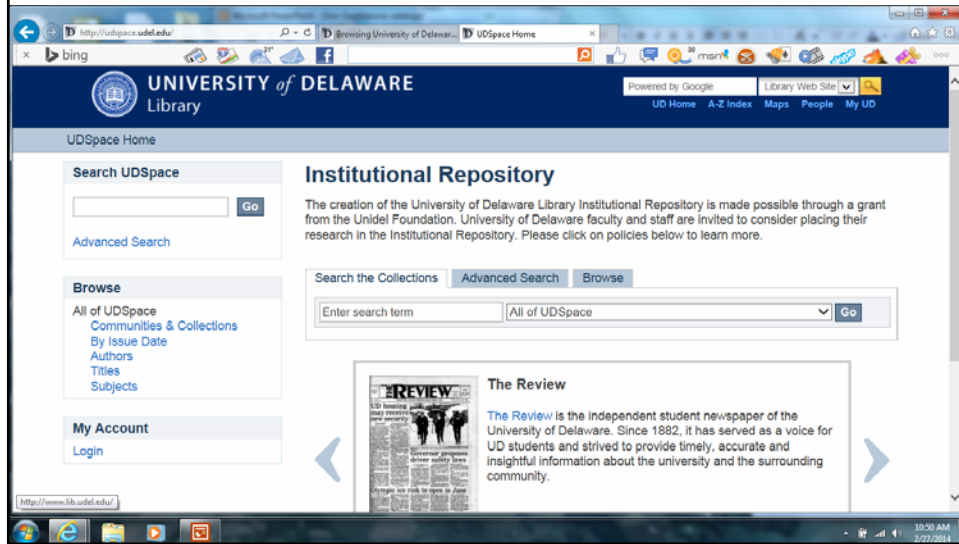




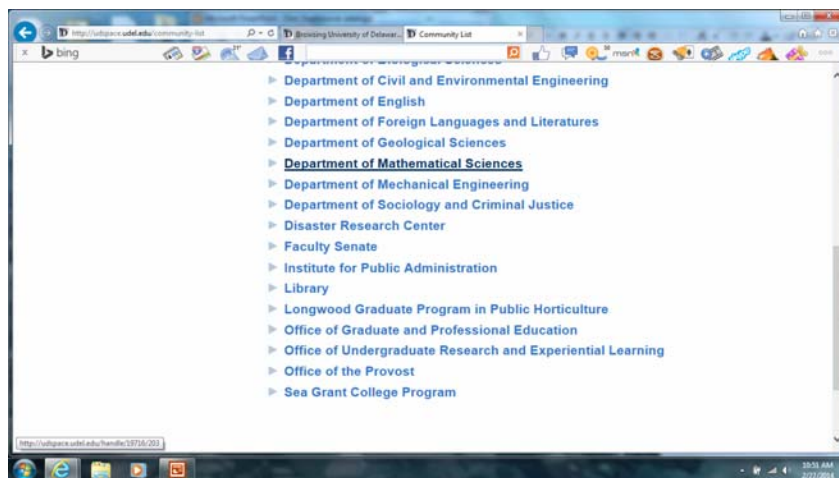
AMT's Field Guides



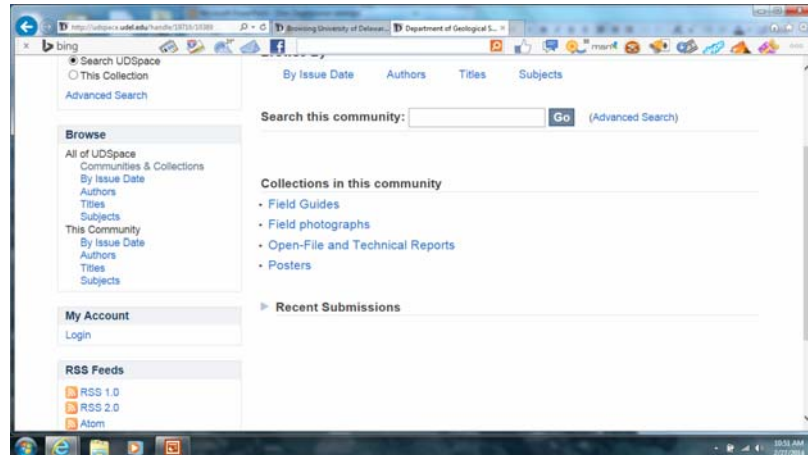
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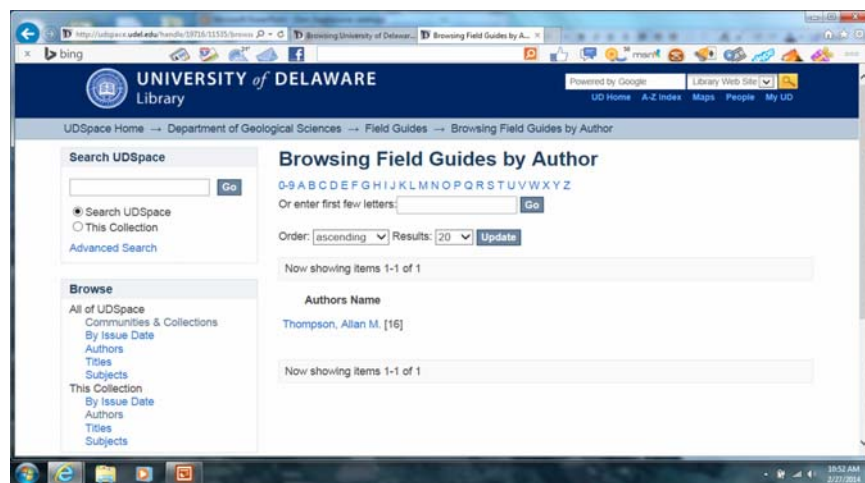
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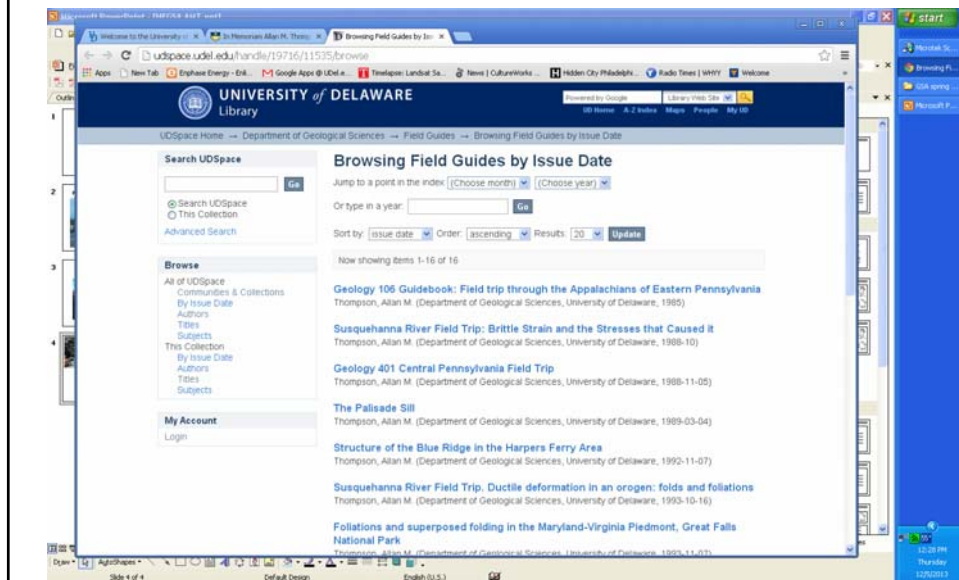
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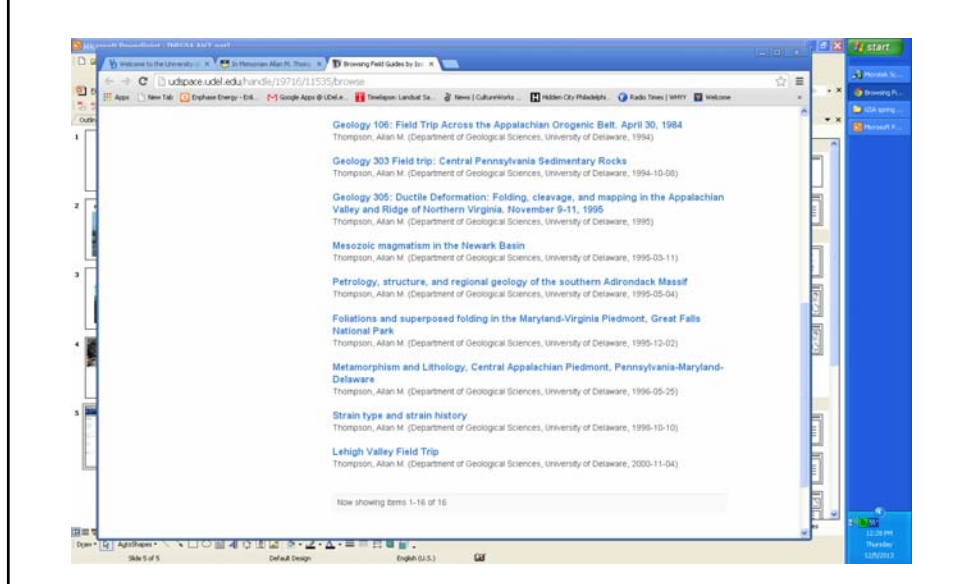
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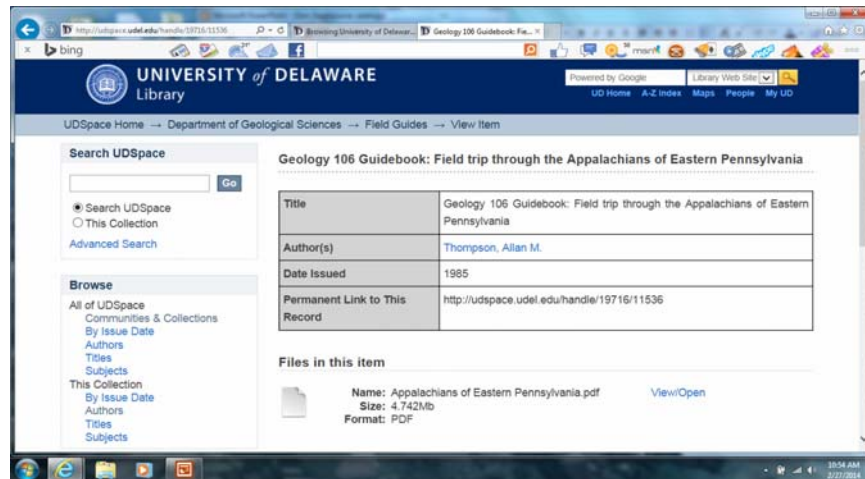
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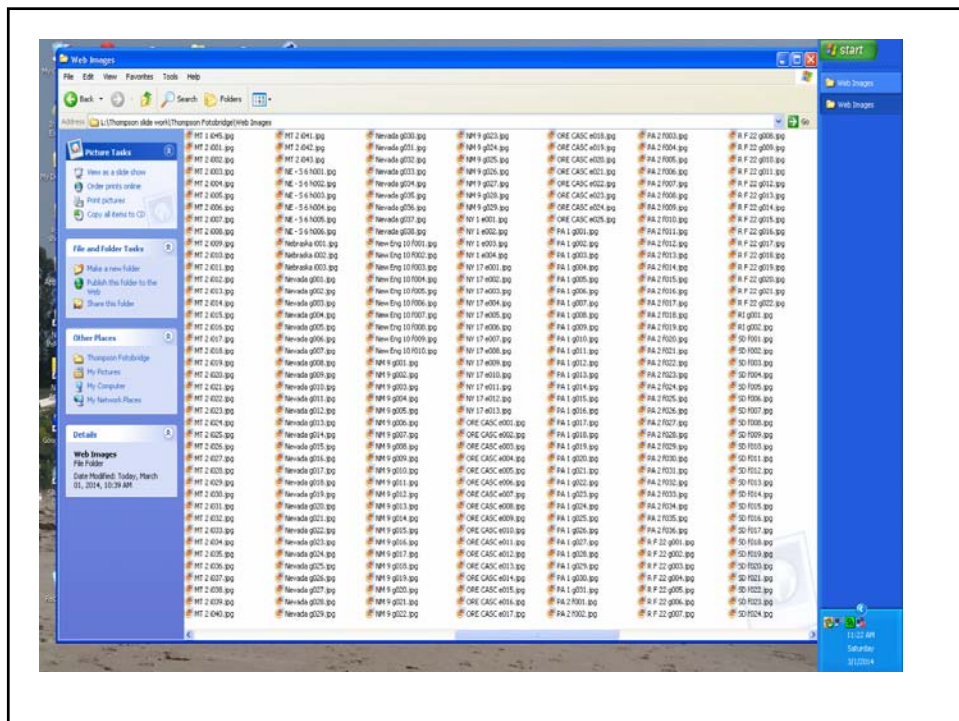
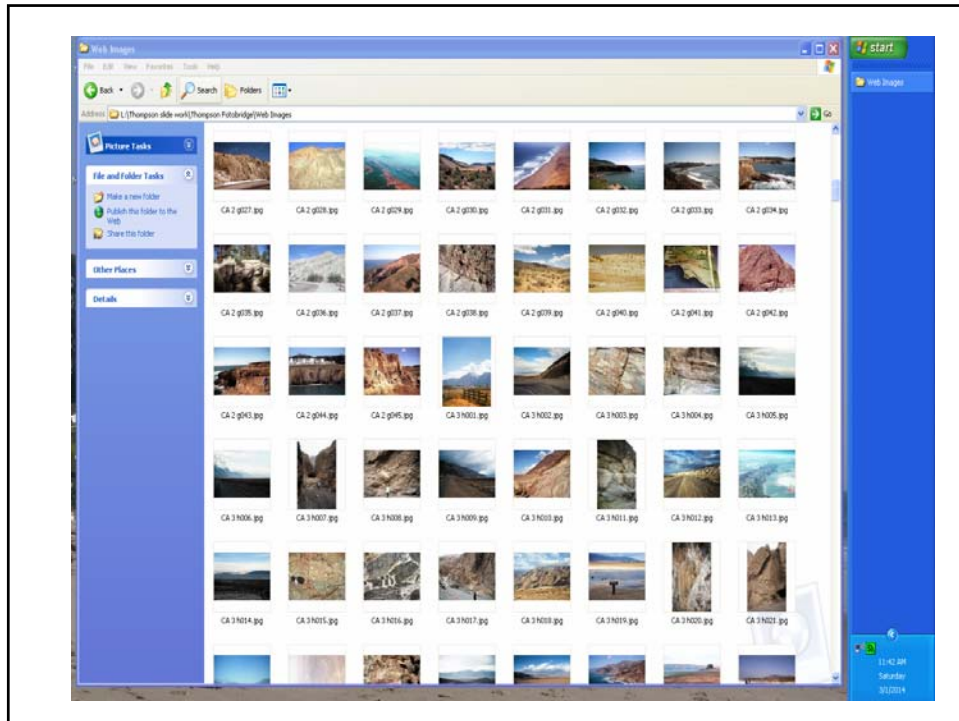


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AMT Photography





Microsoft Excel

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C109 ramp phase heart mtn fault dead indian pass

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	A	B	C	D	E	F	G	H	I
	Page/folder	file #	Notes on slide	Key word	Key word	Key word	Key word	Key word	Date
1	AZ-16	g016	Volcanic stratigraphy Ashfall Black Mountains US 93	Arizona	volcanic				
2	AZ-16	g015	Fault offset in Grand Canyon North Wall	Arizona	stratigraphy	structure			
3	AZ-16	g014	Brittle fracture in gneiss Twilight Gneiss Coal Bank Road	Arizona		structure			
4	AZ-16	g013	Drag on fold Hermosa in diff attitude Coal Bank Pass	Arizona		structure			
5	AZ-16	g012	Flow AA basal and rhyolite air fall ash 140 Kingman AZ	Arizona	volcanic				
6	AZ-16	g011	Flows and ash Tertiary Black Mesa	Arizona	volcanic				
7	AZ-16	g010	San Francisco volcanic field Colorado Plateau	Arizona	volcanic				
8	AZ-16	g009	Joint spacing and weathering Monument Valley AZ	Arizona	stratigraphy	structure			
9	AZ-16	g008	Basin and Range Colorado River Mtns Lake Mojave	Arizona	aerial				
10	AZ-16	g007	Volcanic stratigraphy Black Mtn US 93 AZ	Arizona	volcanic				
11	AZ-16	g006	Volcanic stratigraphy 2 ashes, flow Tertiary volcanics I-40 Kingman	Arizona	volcanic				
12	AZ-16	g005	Settlements in weathered notch Canyon de Chelly	Arizona	stratigraphy				
13	AZ-16	g004	Crater oxidized red, yell Eldfell	Arizona	meteor				
14	AZ-16	g003	East wall inside Meteor Crater	Arizona	meteor				
15	AZ-16	g002	Grand Canyon GC NP	Arizona	stratigraphy				
16	AZ-16	g001	Grand Canyon Supai and Coconino	Arizona	stratigraphy				
17	DE-10	h009	Little Bombay Hook Delaware Bay sandy barrier transgressing	Delaware	coastal	sea level			Jul-74
18	DE-10	h004	Lewes creek washover, plugged creek mouth	Delaware	coastal				
19	DE-10	h007	Henlopen spit, drift system, Lewes Harbor	Delaware	coastal				
20	DE-10	h006	Jetty effect Northward drift Indian River	Delaware	coastal				
21	DE-10	h005	10.19 pt 3 Ocean City Inlet Assateague Island	Delaware	coastal	Maryland			

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Al Thompson Tribute

I always like to think about the analogies between academic departments and sports teams. Knowing of Al's love of baseball, I think of how many roles he played in our department, teaching virtually all the courses in the curriculum, serving as advisors for different programs and almost all the undergrad students at one time or another, serving as Associate Chair for a few years, running the field course for the better part of two decades, and on and on. He was truly the utility player for the team, sometimes seeming to play more than one position at the same time! His well-organized teaching materials and field guides remain as one of his lasting legacies.

Other sports come to mind. Basketball teams rely heavily on their sixth man, the first person off the bench, often one who can play either guard or forward, and often one who is counted on as a strong defender. Hockey teams have the plus-minus system, whereby coaches measure the impact of a player not just by goals or assists, but rather whether they were on the ice when a goal was scored for or against the team. A player with a lot of plus points may not score many goals, but he is on the ice when the team performs well. And there is cycling, where a team of riders will have a designated leader and the others do the hard work of pulling (drafting) for the leader, giving up their bike if the leader has a mechanical problem, dropping back for water and food – all the unglamorous stuff that makes a team successful.

So when I think of Al Thompson and all the things that he did for the Department, I know that he had all the bases covered and played whatever position was needed. I know that was always on the ice when the Department succeeded, and he took more than his share of long pulls for the team. Thank you Allan, for all that you did for the Department and its students over the years.