MISSOURI S&T

MISSOURI UNIVERSITY OF SCIENCE AND TECHNOLOGY

Welcome Transfer Partners!

32nd Annual

Missouri S&T Transfer Conference

October 18, 2016

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MISSOURI UNIVERSITY OF SCIENCE AND TECHNOLOGY

Lynn Stichnote

Director of Admissions

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MISSOURI UNIVERSITY OF SCIENCE AND TECHNOLOGY

Laura Stoll

Vice Provost and Dean for Enrollment Management

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MISSOURI UNIVERSITY OF SCIENCE AND TECHNOLOGY

Dr. Dave Westenberg

Professor and Interim Chair, Biological Sciences

IGEM

International Genetically Engineered Machine

MISSOURI S&T — MISSOURI UNIVERSITY OF SCIENCE AND TECHNOLOGY

S&T Transfer Students
Fall 2016

Deb Anderson, Associate Director of Admissions
Missouri S&T Transfer Conference
October 18, 2016

2016 New Transfer Students

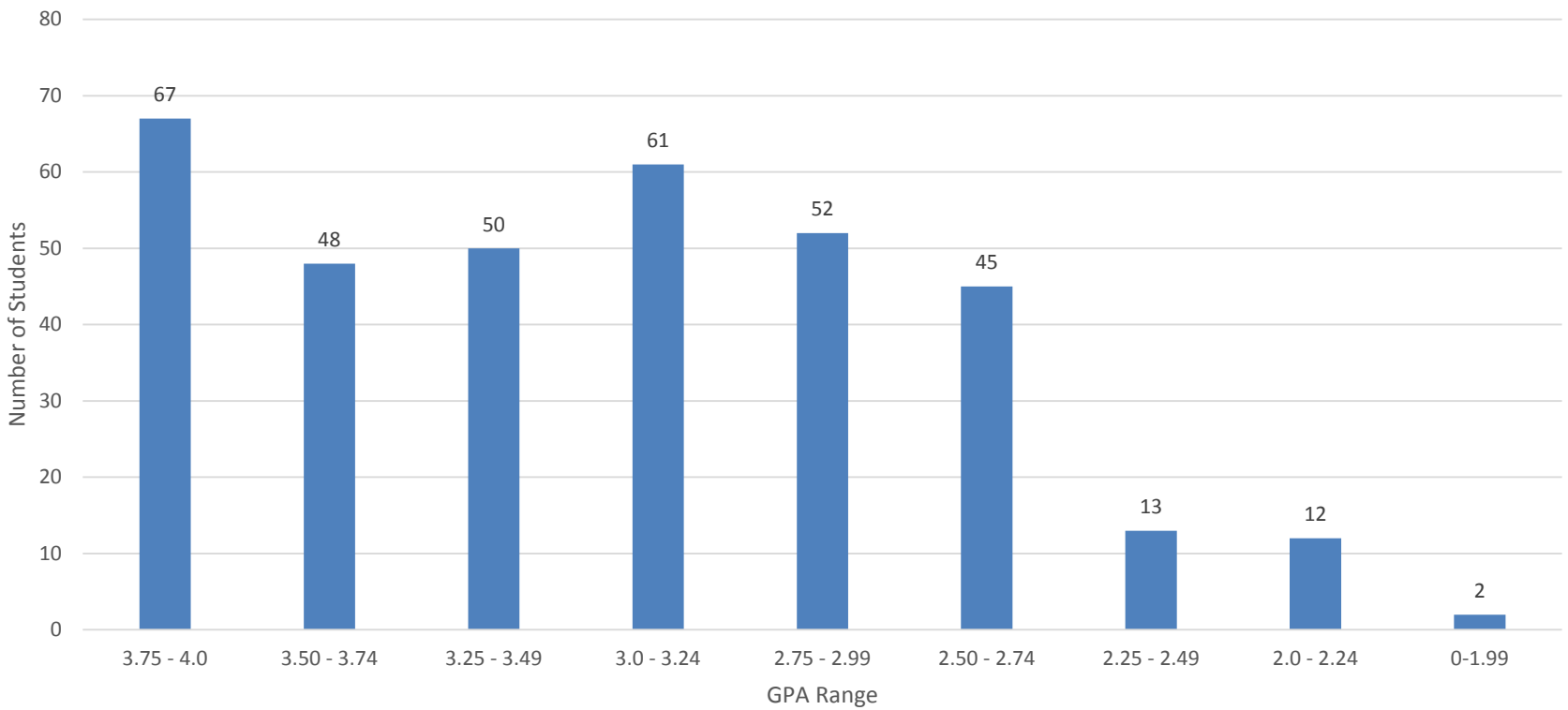
- 524 in 2016 (123 Spring, 401 Fall)
- 3.20 Average Transfer GPA
- 63 Average Credits Transferred

24,135

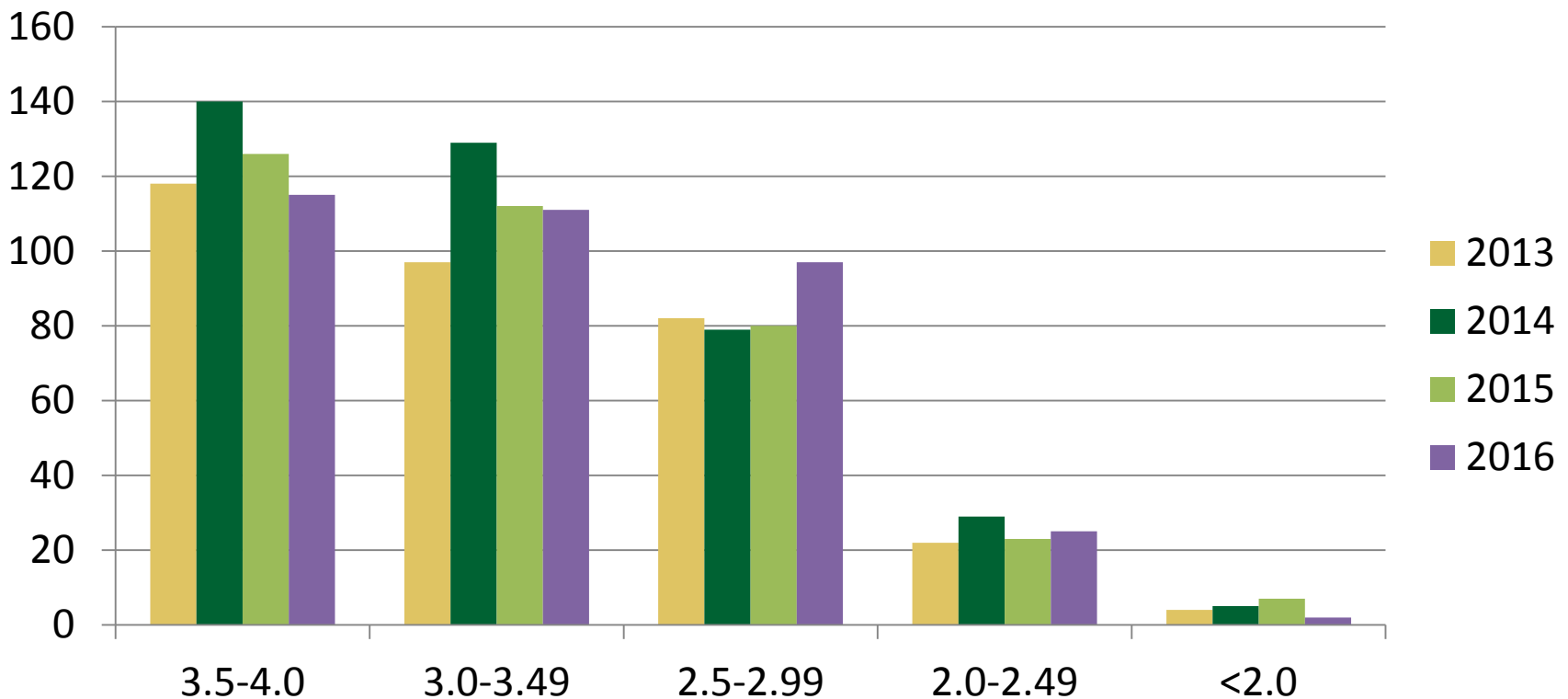
total transfer credits in Fall 2016
(down from 26,354)

Transfer GPA Distribution

350 Fall 2016 New TRE with Transfer GPA

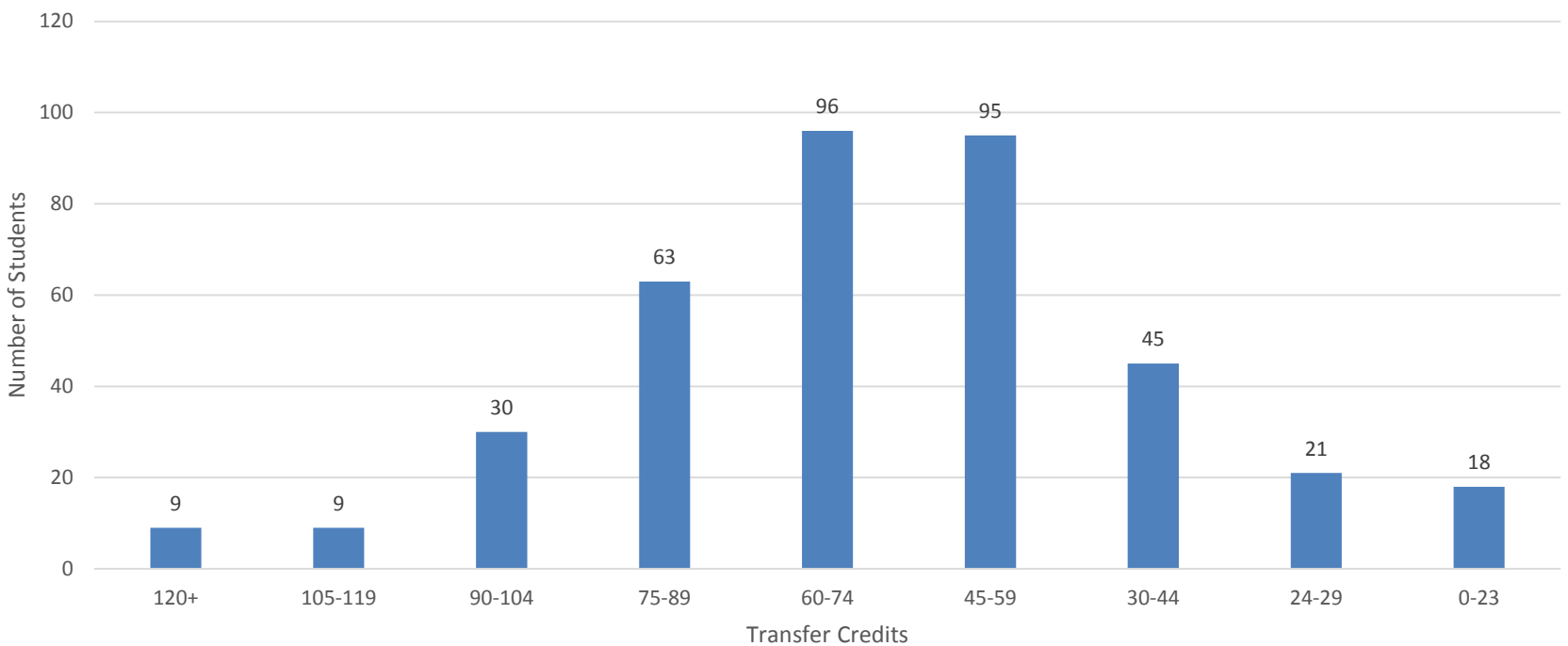


New 2016 Transfers by GPA

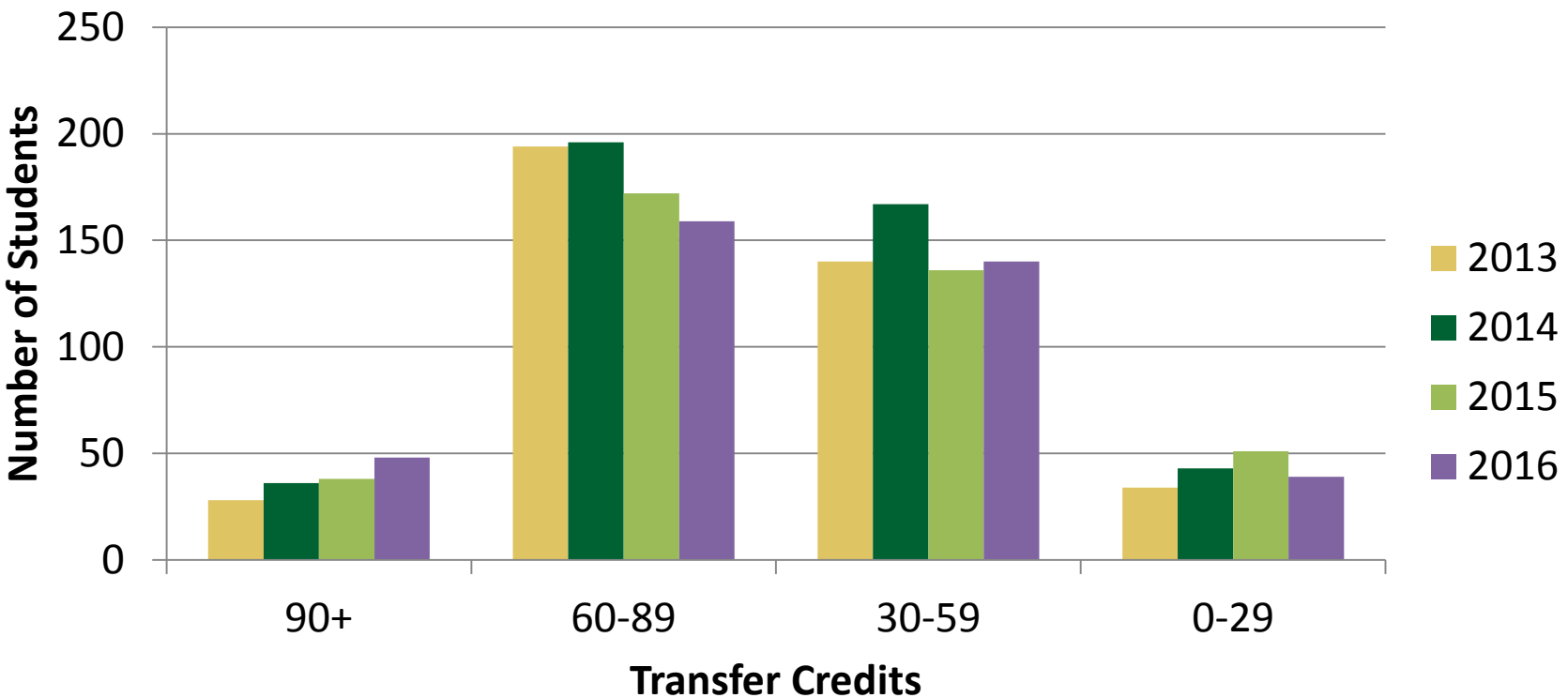


Transfer Credit Distribution

Fall 2016 New Transfers



New 2016 Transfers by Transfer Credits



2016 S&T Transfer Students

New Fall 2016

- 98 Different Institutions
  - 39 domestic partners
  - 6 international partners
  - 52 non-partners

All Enrolled Transfers

- 262 Different Institutions
  - 57 domestic partners
  - 15 international partners
  - 190 non-partners

New Students by Transfer College

97 different institutions, 39 domestic partners
Over 75% from 10 Partner Colleges

St. Louis CC	44	Missouri State Univ	20
Metropolitan CC	33	Jefferson College	18
Ozarks Technical CC	30	Mineral Area College	15
East Central College	30	Crowder College	10
St. Charles CC	21	State Fair CC	8

Enrolled Students by Transfer College

276 different institutions, 59 domestic partners
90% of Enrolled Domestic Undergrads from Key Schools

St. Louis CC	188	Columbia College	22
Ozarks Technical CC	133	State Fair CC	19
East Central College	121	U of Central MO	18
Metropolitan CC	120	Moberly Area CC	15
Missouri State Univ	78	Truman State	14
St. Charles CC	75	MSU-West Plains	12
Jefferson College	59	Lindenwood	11
Mineral Area College	33	Three Rivers CC	11
SEMO	31	Johnson County CC	11
Crowder College	25	Central Methodist	11
SWIC	22	Missouri Southern	10

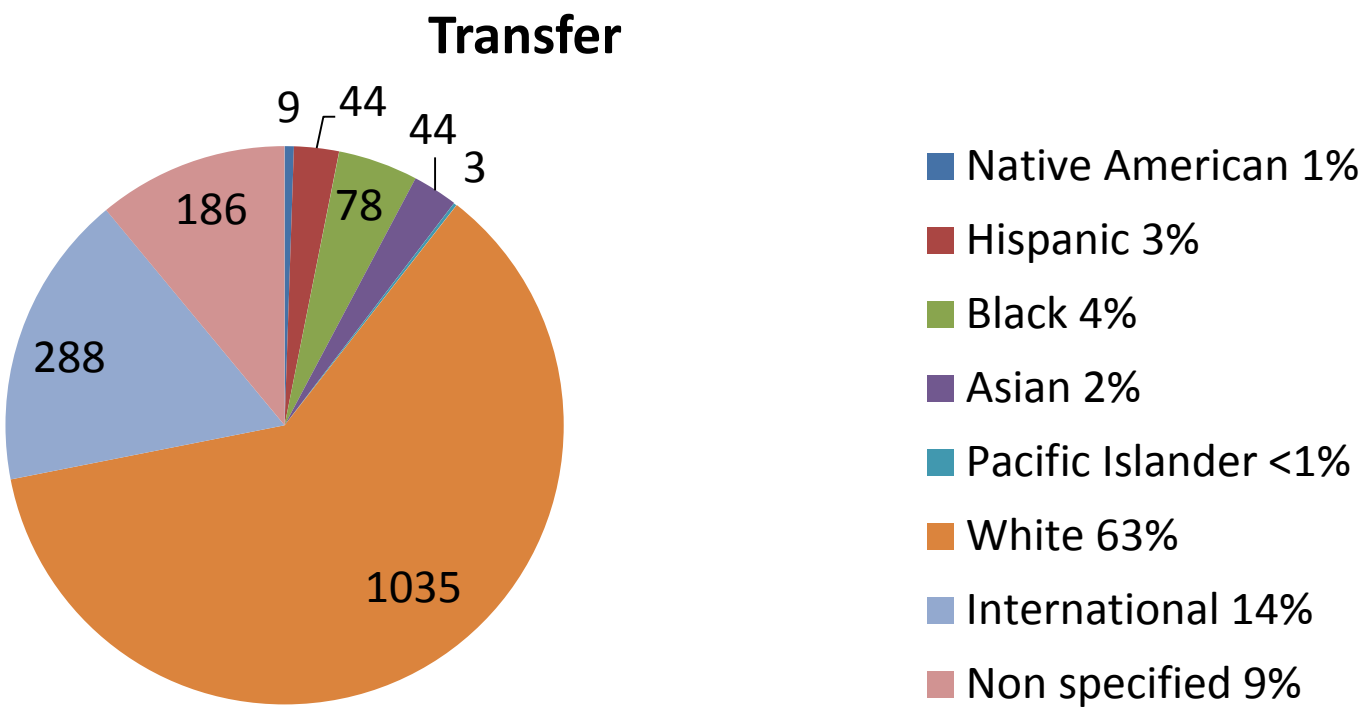
2016 S&T Transfer Students

All Currently Enrolled Transfers

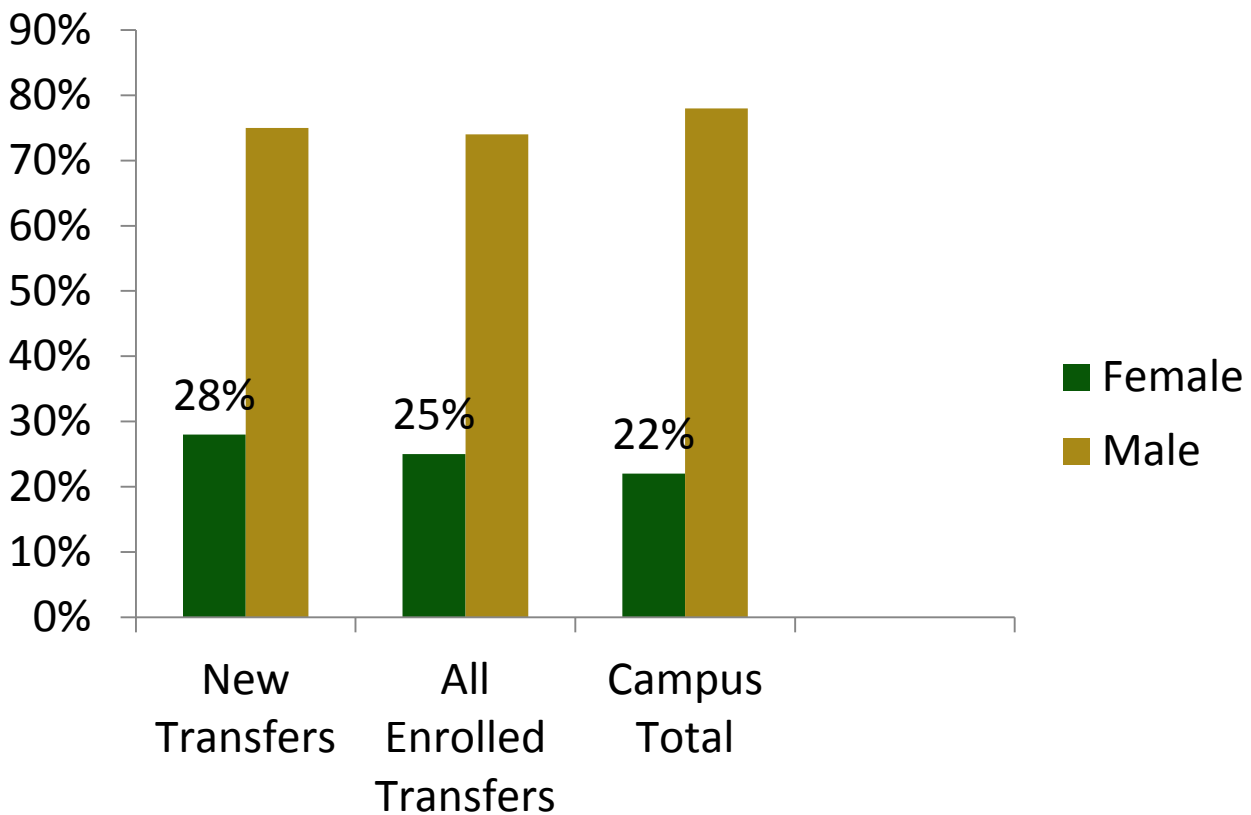
- **1633 Enrolled – 24% of on-campus undergrads (1545 undergrad, 133 grad)**
- **62 average transfer credits**
- **3.23 average transfer GPA**
- **3.21 average cumulative GPA** (after 1 or more S&T semesters)
- **3.08 average S&T/UM GPA** (after 1 or more S&T semesters)

2016 S&T Transfer Students

All Currently Enrolled Transfers

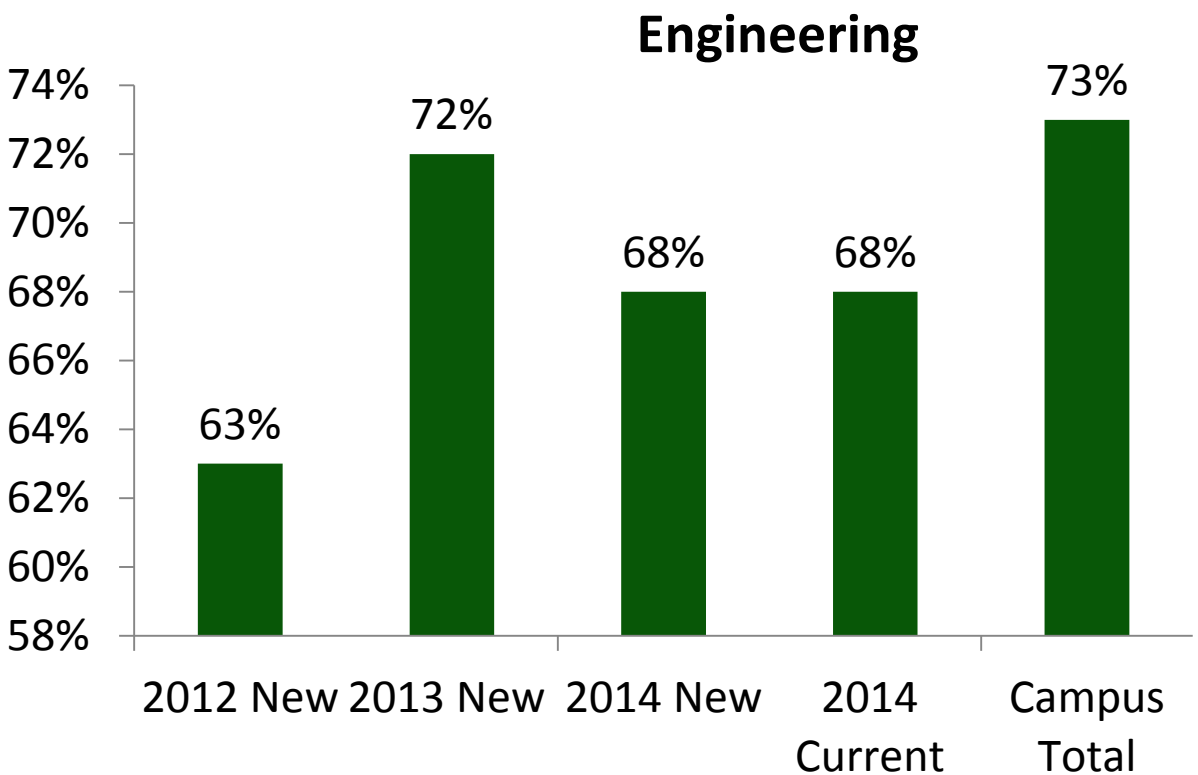


Enrollment by Gender



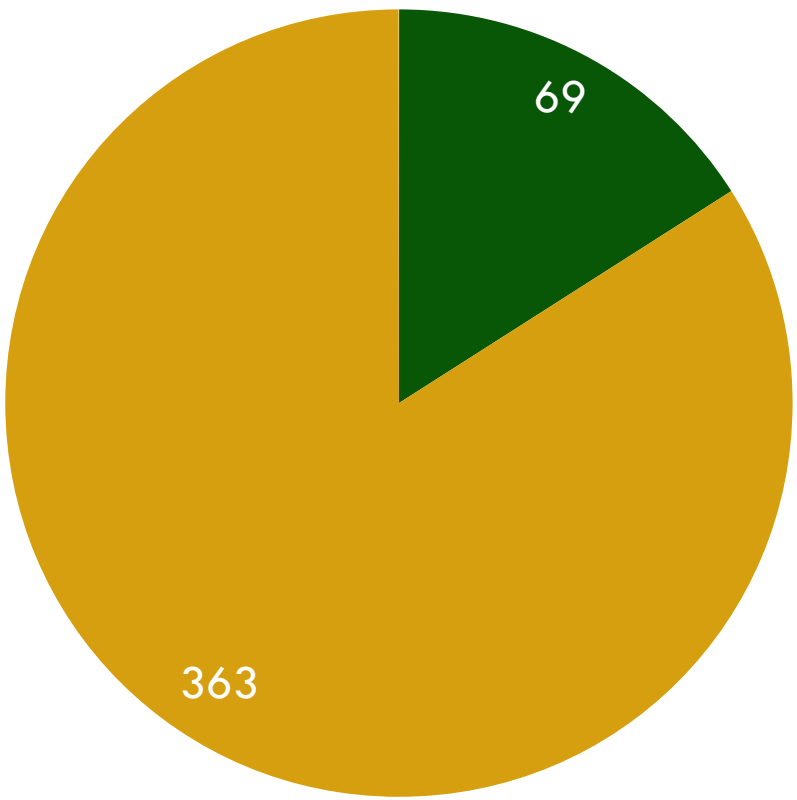
Transfer Engineering Enrollment

On-campus, undergraduates



2016 S&T Transfer Students

New Enrolled Transfers



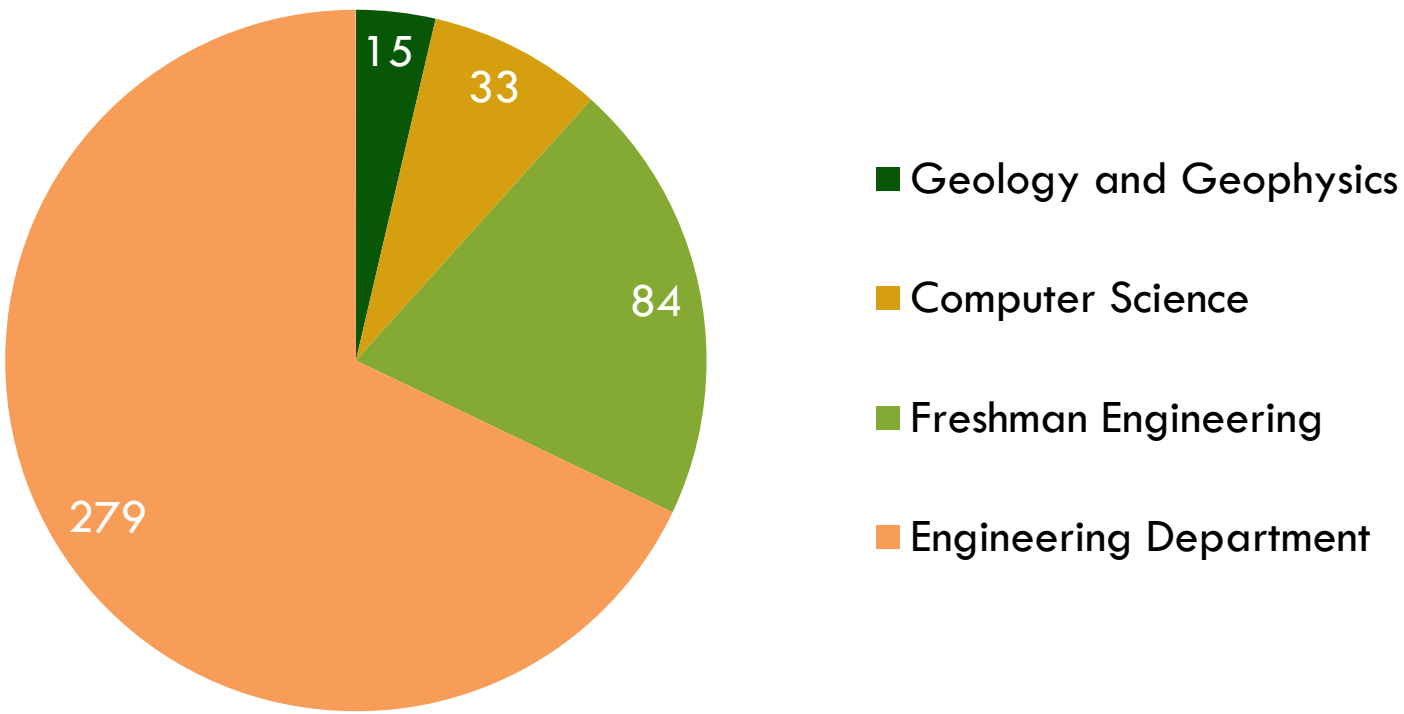
2016 New Transfer Students

69 College of Arts, Sciences, and Business

- Biological Sciences
- Information Science and Technology
- Psychology
- Business
- Physics
- Multidisciplinary Studies
- Mathematics
- Chemistry
- English
- Economics

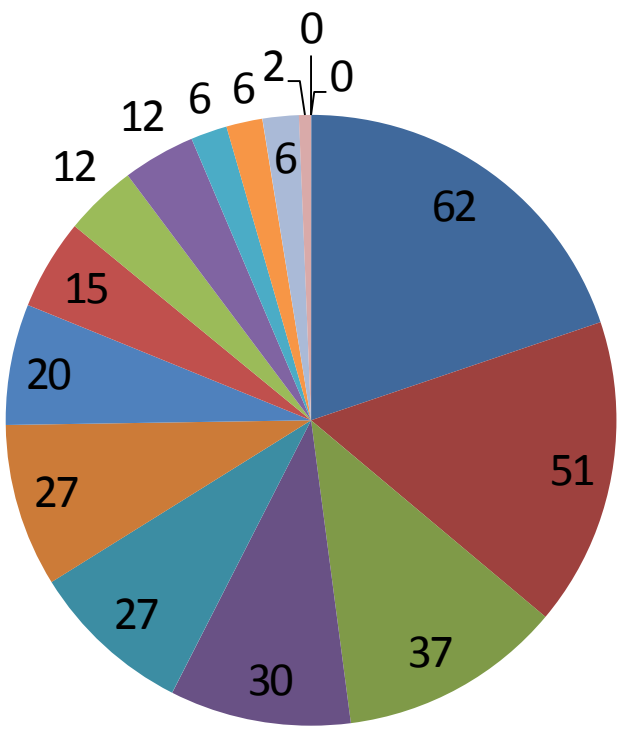
2016 New Transfer Students

363 Total College of Engineering and Computing



2016 S&T Transfer Students

313 Engineering New Enrolled Transfers



- Mechanical Engineering
- Electrical Engineering
- Mining Engineering
- Chemical Engineering
- Petroleum Engineering
- Civil Engineering
- Aerospace Engineering
- Computer Engineering
- Environmental Engineering
- Engineering Management
- Nuclear Engineering
- Geological Engineering
- Architectural Engineering
- Metallurgical Engineering
- Undecided Engineering
- Ceramic Engineering

313 Total Engineering

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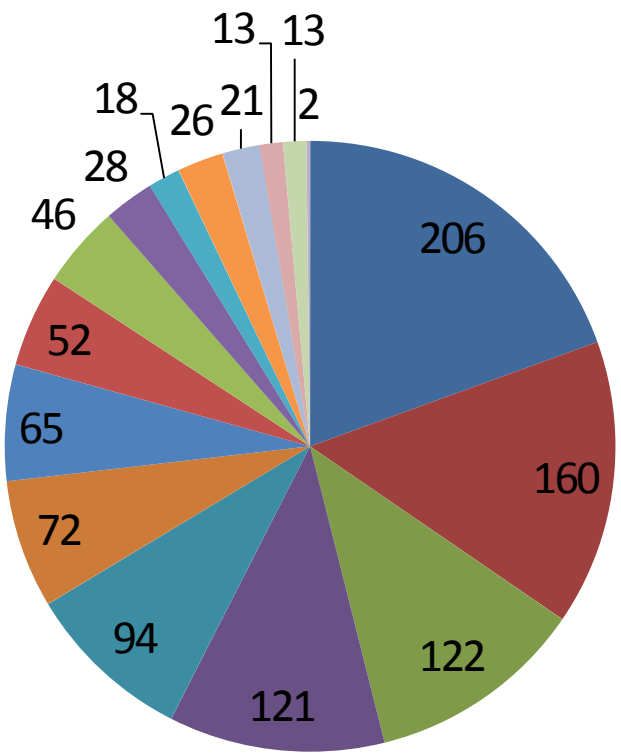
2016 S&T Transfer Students

1059 Engineering Currently Enrolled Transfers



- Mechanical Engineering
- Electrical Engineering
- Petroleum Engineering
- Civil Engineering
- Chemical Engineering
- Mining Engineering
- Aerospace Engineering
- Computer Engineering
- Engineering Management
- Nuclear Engineering
- Architectural Engineering
- Environmental Engineering
- Geological Engineering
- Metallurgical Engineering
- Ceramic Engineering
- Undecided Engineering

1170 Total Engineering

Transfer Admission Criteria

Admission to S&T

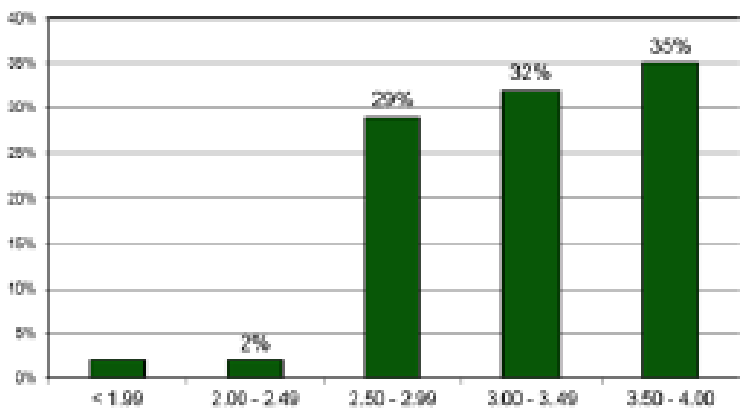
- 2.0 gpa
- 24 college-level credits
- More stringent requirements by academic programs
- Borderline gpa between 2.0 and 2.5 are reviewed very carefully, regardless of major.

Admission to STEM Field

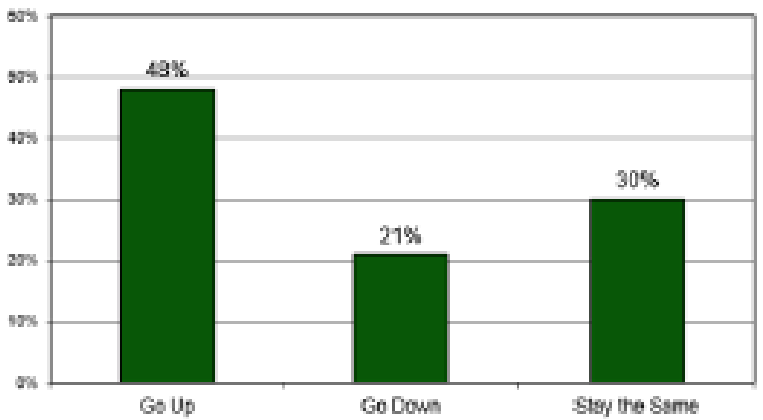
- 2.5 gpa
- 24 college-level credits
- Satisfactory progress through degree-related courses

Transfer Student GPA Expectations

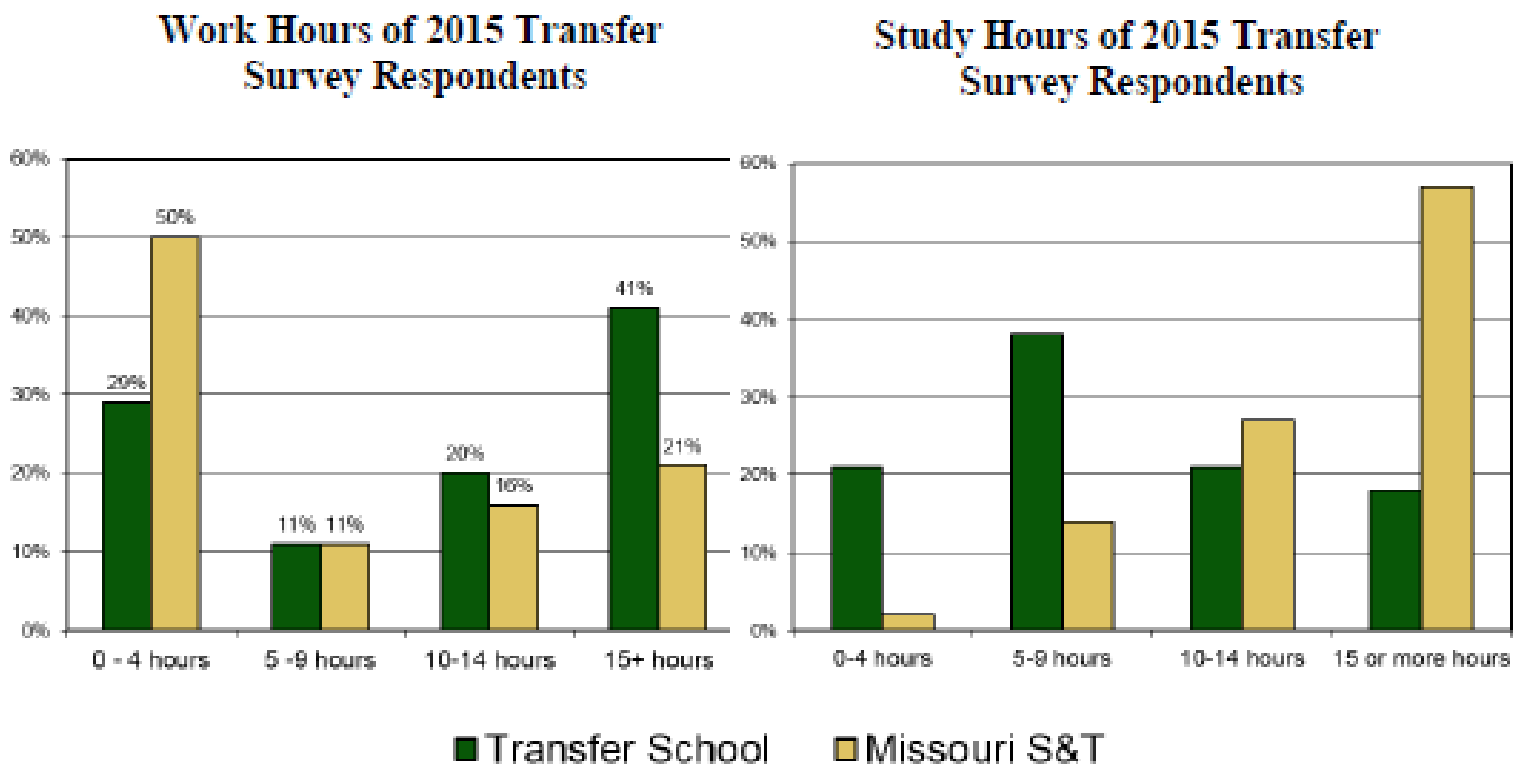
Transfer GPA of 2015 Transfer Survey Respondents



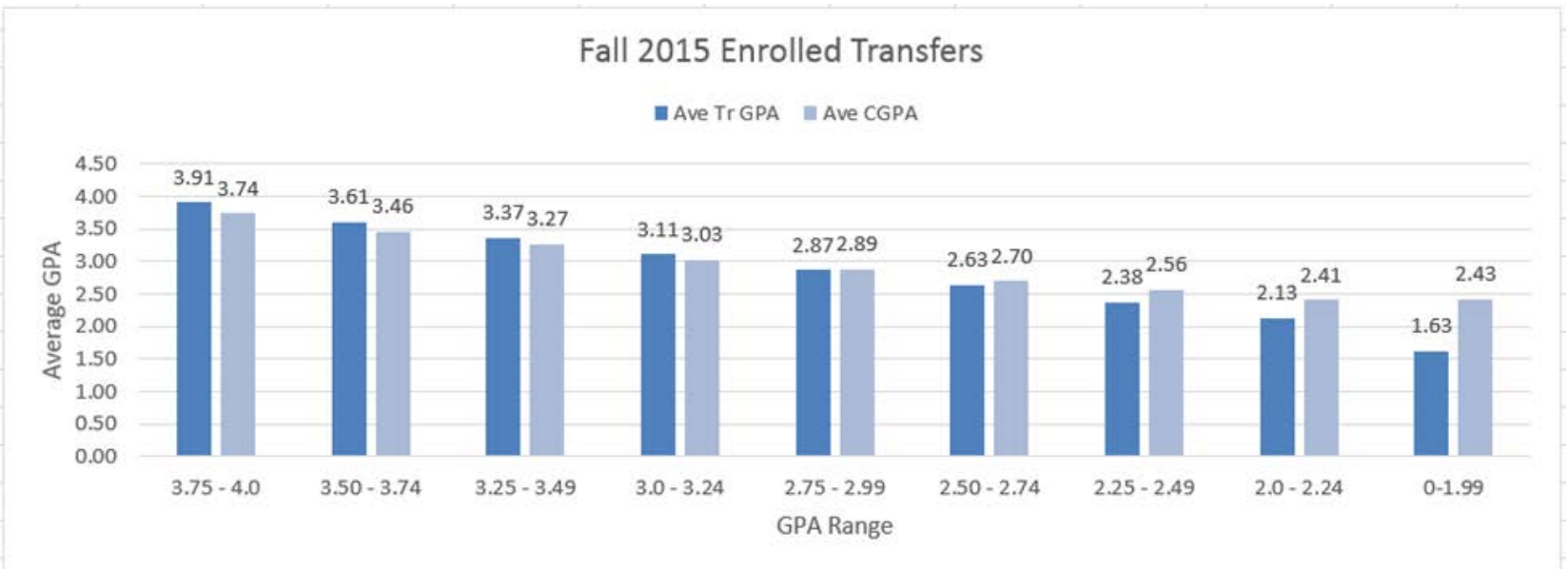
After transferring to Missouri S&T, I expect my GPA to



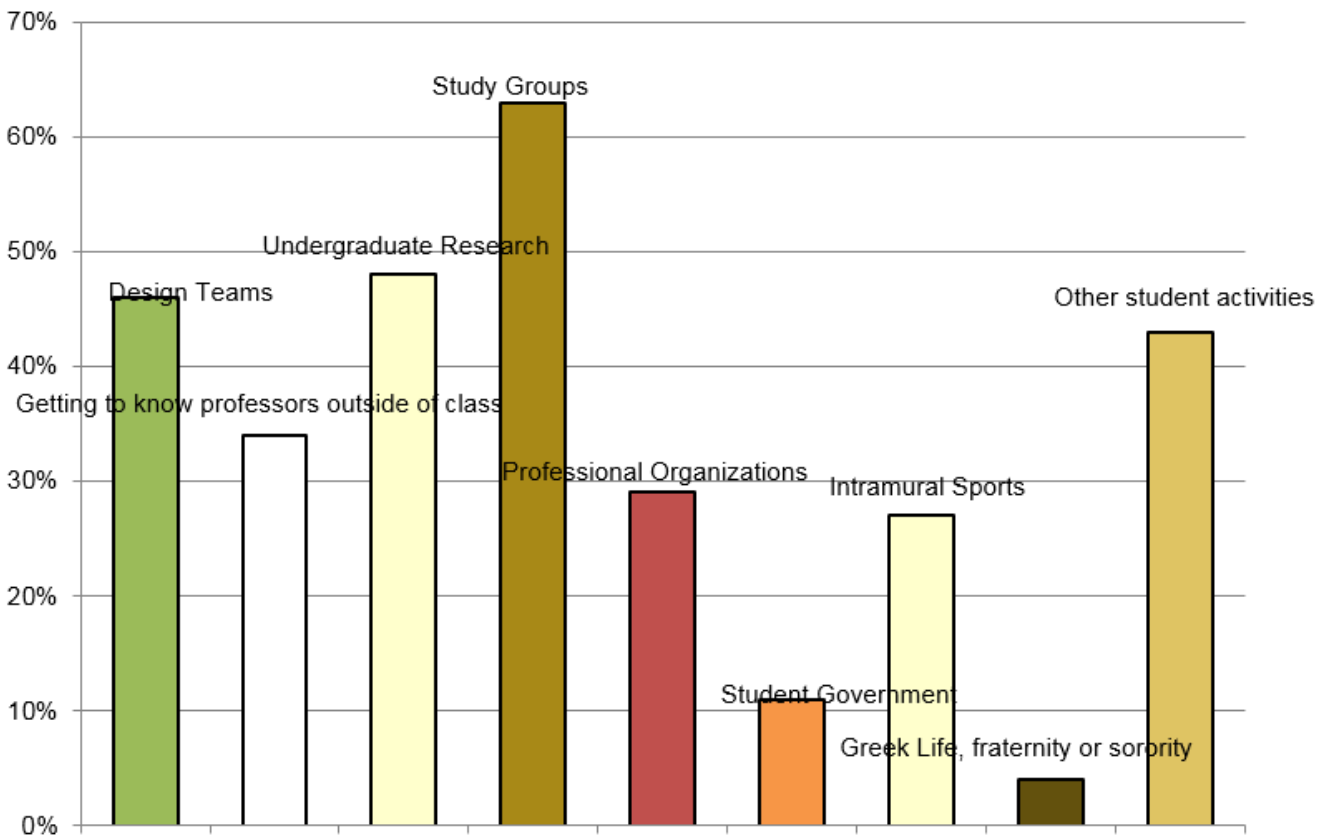
Work Hours and Study Expectations



Fall 2015	All Enrolled Transfers			
GPA Distribution	Students	Ave Tr GPA	Ave CGPA	GPA Change
3.75 - 4.0	287	3.91	3.74	-0.17
3.50 - 3.74	222	3.61	3.46	-0.15
3.25 - 3.49	220	3.37	3.27	-0.10
3.0 - 3.24	236	3.11	3.03	-0.08
2.75 - 2.99	190	2.87	2.89	0.02
2.50 - 2.74	123	2.63	2.70	0.07
2.25 - 2.49	71	2.38	2.56	0.18
2.0 - 2.24	19	2.13	2.41	0.28
0-1.99	21	1.63	2.43	0.80
Total	1389			


Fall 2015 Enrolled Transfers
Ave Tr GPA
Ave CGPA
Average GPA
4.50
4.00
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00
3.91
3.74
3.61
3.46
3.37
3.27
3.11
3.03
2.87
2.89
2.63
2.70
2.38
2.56
2.13
2.41
1.63
2.43
3.75 - 4.0
3.50 - 3.74
3.25 - 3.49
3.0 - 3.24
2.75 - 2.99
2.50 - 2.74
2.25 - 2.49
2.0 - 2.24
0-1.99
GPA Range

2015 Transfer Student Survey Planned Activities at S&T



Curriculum Updates

Dr. Jeff Cawlfield
Vice Provost for Undergraduate Studies and
Professor, Geological Engineering
October 18, 2016

Student Success Committee

- The University values and supports transfer students.
- Transfer Student Success and Engagement Subcommittee was formed.
- SSC report to Chancellor Schrader included data and recommendations.

Recommendation 1 – Data Analysis and Reporting

Create an annual or biannual report on transfer students' retention and success, including predictive value of entering GPA on success, success in key courses, and graduation data. Do a comprehensive evaluation by key attributes including transfer sending school, total credit hours and GPA at enrollment, major, gender, and ethnicity. This evaluation would provide key information for the campus and our transfer partner schools, and could be used to determine whether current transfer admission policy is appropriate.

Recommendation 2 – Transfer Student Engagement Survey

Develop and administer a comprehensive survey of entering transfer students' attributes and expectations, and then measure these students' level of engagement at S&T to learn if their expectations have been met.

Recommendation 3 – Facilitate Engagement for Transfer Students

Use existing programs, such as Transfer Advising Day, to enhance exposure of new transfer students to experiential learning expectations and opportunities; PRO Leaders who can promote Transfer Transitions attendance; COER services; the advantages of living in University housing; and availability of student organizations.

CURRICULUM CHANGES

Total Hours for Degree

120 Hours

BA: Biological Sciences, Chemistry, Economics, English, History, Multidisciplinary Studies, Philosophy, Psychology
BS: Business and Management Systems, Economics, Information Science and Technology

124 Hours

Psychology BS

126 Hours

Technical Communications BS

128 Hours

All Engineering (except Petroleum, Chemical)
Computer Science
Applied Mathematics
Physics

129 Hours

Geology and Geophysics
Petroleum Engineering

130 Hours

Biological Sciences BS
Chemical Engineering

131 Hours

Chemistry BS
Chemical Engineering (Biochemical Emphasis)

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Total Hours Education Certification

Biology, Physics, Chemistry	
Biological Sciences BA	137
Chemistry BA	135
Physics BS	145-149

English	
English BA	127-129

STEM Elementary Education	
Depends on Emphasis	124-127

Social Studies	
Psychology BA	127-129
Psychology BS	135-138
Economics BA	129-131
History BA	125-128

Mathematics	
Applied Math BS	132

Required Electives

Free electives – for Engineering programs, these CANNOT include preparatory courses, such as algebra or trigonometry.

The following engineering departments restrict any free electives to 3 credit hours if not in Science or Engineering:
Aerospace (reduced to 2 hours), Architectural, Chemical/Biochemical, Computer, Electrical, Engineering Management

Metallurgical Engineering has 5 hours of free electives and they are NOT restricted:

These five engineering departments don't currently have any free electives in their curricula: Ceramic, Civil, Environmental, Geological, Mining, Nuclear, Petroleum, Biochemical Emphasis in Chemical Engineering

Technical electives – usually must be approved by major advisor. Specific degree programs and emphasis areas may require specific courses (see Course Catalog)

Free Electives for BS Degrees

0 Hours

- Ceramic Engineering
- Chemical Engineering (Biochemical Emphasis)
- Civil Engineering
- Environmental Engineering
- Geological Engineering
- Mechanical Engineering
- Mining Engineering
- Petroleum Engineering

3 Hours

- Architectural Engineering
- Electrical Engineering
- Computer Engineering
- Engineering Management
  - All emphasis areas

2 Hours

- Aerospace Engineering

Free Electives for BS Degrees

6 Hours

- Geology and Geophysics
- Psychology
- Chemical Engineering
- Mechanical Engineering
- Nuclear Engienering

5 Hours

- Metallurgical Engineering

7 Hours

- Computer Science

Free Electives for BS Degrees

9 Hours

- Business and Management Systems

12 Hours

- Information Science and Technology

11 Hours

- Chemistry

13 Hours

- Economics

General Credit Electives

- All college-level electives transfer.
- Grades are calculated into GPA.
- Those not satisfying a specific degree requirement are considered general credit.

Computer Science

- C or better in all computer sciences courses, CpE 2210 (111), 3150 (213), and ethics course.
- Ethics elective required as part of humanities elective requirements.
  - Philosophy 3225 (225) Engineering Ethics
  - Philosophy 3235 (235) Business Ethics
  - Other course addressing ethics
- Introductory level language OK for humanities/social sciences elective.
  - French, Spanish 1, 2 (or other language)

MATLAB

- New Fall 2014
- Comp Sci 1972 Intro to MATLAB Programming (Lec 2.0)
- Comp Sci 1982 MATLAB Programming Lab (Lab 1.0)
- Syllabi on conference website
- Satisfies programing requirement for some departments.
- Specifically required by Engineering Management

S&T Programming Courses

- **CS 1570/1580 Intro to Programming and Lab (C++)**
- **CS 1970/1980 FORTRAN**
- **CS 1971/1981 Intro to Programming Methodology and Lab (C++)**
- **CS 1972/1982 Intro to Matlab Programming and Lab**

Programming Requirement Summary

Only MATLAB

- Engineering Management

C++ or FORTRAN

- Aerospace Engineering

Only CS 1570/80 C++

- Computer Science
- Computer Engineering
- Electrical Engineering

Programming Requirement Summary

Any of the four computer science courses will satisfy the programming requirement for these majors:

- Biological Sciences
- Chemical Engineering
- Mathematics
- Mechanical Engineering
- Nuclear Engineering
- Physics
- Psychological Science BS

Programming Requirement Summary

These engineering programs do not require programming:

- Architectural
- Ceramic
- Civil
- Environmental
- Geological
- Metallurgical
- Mining
- Petroleum

Programming Requirement Summary

Civil Engineering

Architectural Engineering

- ArchE/CvE 2003 Engineering Communications replaced the department's programming requirement a few years ago. Other programming courses will not be substituted.

Programming Requirement Summary

Required for Business and IST

- **IST 1551 Implementing Info Systems: User Perspective**
- **IST 1552 Implementing Info Systems: Data Perspective**

Both programs (Business and IST) will substitute the combination of CS 1570/1580 C++ and 1510 Data Structures for IST 1551/1552

Chemical Engineering Notes

Significant revisions to junior/senior year curriculum.

- No changes in freshman/sophomore years.
- **STAT 3113 (3115 by substitution) has been added to requirements.**
- New transfers will be able to proceed under their original calendar year.

CHEME 2100 and 2110 are Key Pre-Requisites

ChemE 2100 (120) – Chem Engineering Material & Energy Balances

ChemE 2110 (141) – Chem Engineering Thermodynamics I

- –Prerequisites for ChemE 3100 (231) and 3120 (245).
- –On schedule to be taught fall and spring semesters
- –Require completion of general chemistry II, calculus II, programming.

Chemical Engineering Notes (cont.)

CHEME 2100 Summer Online

- Helps transfer students finish degree faster.
- Students can take any time after completion of calculus II, general chemistry II, and programming (C++, MATLAB, or FORTRAN).

CHEME 2110 Chemical Engineering Thermodynamics

- Mechanical Engineering Thermodynamics will no longer be substituted for CHEME 2110.
- Students who have ME Thermo will need a 1-hour supplemental online course to receive credit for CHEME 2110. (This is a 1-hour online special problems course available summer, fall, spring.)

2nd Communication course not required.

EN 1160 (60), 3560 (160), or SPMS 1185 (085) previously required will now count as general education/free elective.

Mechanical Engineering Notes

Breadth Elective – 3 credit hours, selected with advisor

- Doesn't affect transfer curriculum.
- 3000+ level math, statistics, science engineering, comp sci, business, IST or upper-level ME course
- Approved course for global studies minor
- Combination of co-op, special problems, research, or design team credit

Technical Elective – 3 credit hours, selected with advisor

- Doesn't affect transfer curriculum.
- 3000+ level math, statistics, science engineering, comp sci or upper-level ME course.
- May not include co-op, special problems, or research.

Slight revision to the ME/AE dual major program.

- See curriculum in folder.

Biological Sciences Note

Chemistry Courses are Key Pre-requisites

Biological Sciences majors are strongly encouraged to complete 2 semesters of general chemistry and of organic chemistry before transferring. These are pre-requisites for many upper-level biological sciences courses.

Biological Sciences BS requires:

9 hours of general chemistry – Chem 1310 (1), 1319 (2), 1320 (3), and 1100 (4)

8 hours of organic chemistry – Chem 2210 (221) & (2219) 226, 2220 (223) & 2229 (228)

3 hours of general biochemistry – Chem 4610 (361)

Other Planned Revisions

- **Nuclear Engineering**: Considering a 1-hour seminar course which would reduce free electives.
- **Computer Engineering**: Dual major programs for Computer/Electrical Engineering and for Computer Engineering/Computer Science will be updated next year to reflect changes in ABET requirements.
- **History**: Proposed History BS (in addition to the existing BA) to allow STEM students to more easily double major because STEM courses could more easily apply to the BS.

Freshman Engineering

- Calculus I and II
- Engineering Physics I
- General Chemistry I
- English Composition I
- FR ENG 1100 Study and Careers in Engineering
- MECH ENG 1720 Engineering Design

Admission to Engineering Program Requirements

- Completion of all but 1 or 2 courses
- Satisfactory gpa
- Other requirements established by engineering program

New Engineering Transfers

New Engineering Transfers	2009	% of Total Engineering	2010	% of Total Engineering	2011	% of Total Engineering	2012	% of Total Engineering	2013	% of Total Engineering	2014	% of Total Engineering	2015	% of Total Engineering
Freshman Engineering	77	33%	84	29%	65	27%	68	29%	81	27%	87	26%	84	23%
Engineering Dept	154	67%	209	71%	176	73%	165	71%	224	73%	248	74%	279	77%
Total	231	100%	293	100%	241	100%	233	100%	305	100%	335	100%	363	100%

Engineering Program Admission

Consistent for Current and Transfer Students

2.00 to 2.80 Cumulative GPA

Grade replacements included

Satisfactory progress in math and science work.

Completion of—
FE block of courses*

*MECH ENG 1720 can be taken after transfer if all other requirements are met. FR ENG 1100 **waived.**

2.5 GPA Minimum

Mechanical

Aerospace

Civil

Architectural

2.8 GPA Minimum

Petroleum

2.25 GPA Minimum

Chemical

Computer

Electrical

Mechanical and Aerospace Engineering

Admission Requirements

2.50 Cumulative GPA

Grade replacements included

2.25 Math/Science GPA

Grade forgiveness excluded

Completion of—
FE block of courses*

*MECH ENG 1720 can be taken after transfer if all other requirements are met
FR ENG 1100 is waived for transfer students.

Grade of C or Better Required

- **Mechanical AND Aerospace Engineering**
  - CHEM 1310 General Chemistry (lecture)
  - Math 3304 Differential Equations
  - Physics 2135 Engineering Physics II
  - Programming (one of the following)
    - Comp Sci 1570, 1580 C++
    - Comp Sci 1971, 1981 C++
    - Comp Sci 1970, 1980 FORTRAN
    - Comp Sci 1972, 1982 MATLAB

Civil and Architectural Engineering

Admission Requirements

2.50 Cumulative GPA

Grade replacements included

2.50 UM System GPA

Grade forgiveness excluded

Completion of—
FE block of courses*

MECH ENG 1720 can be taken after transfer if all other requirements are met
FR ENG 1100 is waived for transfer students.

Grade of C or Better Required

- CHEM 1310 General Chemistry
- Calculus I and II
- Physics 1135 Engineering Physics I

Environmental Engineering

Admission Requirements

2.00 Cumulative GPA

With Grade Forgiveness

2.00 Math/Science GPA

Without Grade Forgiveness

Completion of—
FE block of courses*

*MECH ENG 1720 can be taken after transfer if all other requirements are met
FR ENG 1100 is waived for transfer students.

Grade of C or Better Required

- CHEM 1310 General Chemistry
- Calculus I and II
- Physics 1135 Engineering Physics I

MISSOURI S&T

MISSOURI UNIVERSITY OF SCIENCE AND TECHNOLOGY

Deb Anderson

Associate Director of Admissions

Math Placement

Math Placement Testing for New Transfer Students

- Tool to help insure that new students are taking the appropriate math class.
- Two Tests
  - MMPT
  - Trigonometry
- http://braintrax.mst.edu/

Math Placement

Engineering, Math, Science, and Computer Science Majors

Any major that requires calculus.

- **No Testing Required** for students with grade of C or better in
  - Calculus II or
  - Calculus I and Trigonometry (or Pre-Calculus)
- **Trigonometry Test Only for students with C or better in**
  - Calculus I but not college-level Trigonometry
- **Both Algebra and Trigonometry Tests.**
  - All other students
  - Students may waive trig testing if no trig background
  - Algebra test may not be waived

Math Placement

IST, Business, Economics

- Any major that requires Business Calculus.
- **No Testing Required** for students with grade of C or better in
  - Business Calculus
- **Algebra Test Only**
  - All other students

BA majors, other

- Majors that require college algebra
- **No Testing Required** for students with grade of C or better in
  - College Algebra
- **Algebra Test Only**
  - All other students

STEM Transfer Guides

- **Transfer guides for STEM disciplines for all community colleges.**
  - Biological Sciences BA, BS, Teacher Certification
  - Chemistry BA, BS, Teacher Certification
  - Computer Science BS
  - Geology and Geophysics BS
  - Math BS, Teacher Certification
  - Physics BS, Teacher Certification
- **Secondary Education and Elementary Education transfer guides complete.**

Humanities, Social Sciences, Business

- **Transfer guides for selected community colleges.**
  - Business BS
  - Economics BA, BS, Teacher Certification
  - English BA, Teacher Certification
  - History BA, Teacher Certification
  - IST BS
  - Philosophy BA
  - Psychology BA, BS, Teacher Certification
  - Technical Communication BS

Transfer Guides and Catalog Year

- http://futurestudents.mst.edu/apply/transfer/courseguides/

- **Students will keep their original catalog year.**
  - **See Authorization to Change Requirement Term form in folder**
  - **http://registrar.mst.edu/forms/**

Grade Replacement Form

- Other paperwork in folder?

Required Electives

Humanities/Social Sciences

- See list in folder
- Complete S&T list at http://ugs.mst.edu/
- Many other options.
- No restriction on skills/performance courses.
  - Public speaking/writing courses.
  - Music performance, art skills.

Syllabi for Core Courses

transferconference.mst.edu

Math

- Calculus, Statistics
- Calculus Exam Archives and Basic Skills Exams

IDE → MECH ENG

- Intro to Engineering Design Dynamics

IDE → CIV ENG

- Statics
- Mechanics of Materials
- Materials Testing Lab

Electrical Engineering

- EE 281
- EE 151
- EE Practice Advancement Exams

English 1600

Computer Science

Physics

MISSOURI S&T

discover. **Create.** innovate.