

A photograph of a young woman with long dark hair, wearing red sunglasses and a maroon Arizona State University (ASU) t-shirt with yellow lettering, standing outdoors with her arms outstretched. She is looking upwards towards the sky. The background features several tall palm trees against a clear blue sky.

Education Innovation at Arizona State University

2017.11.22

김세민

Education Innovation at ASU: Past, Present and Future



David H. Guston

School for the Future of Innovation in Society
School Director & Professor

GLIFS 2017 '4차 산업혁명 시대에 대비하는 대학교육의 혁신'

(The 1st Global Learning Innovation Forum & Symposium)

순천향대학교 19th, October, 2017

ASU: Quick Facts and Figures

- Territorial Normal School로 설립 (1885)
- Arizona State Teachers College로 명칭 변경 (1929)
- Arizona State University로 명칭 변경 (1958)
- Carnegie R1 status 달성 (1994)
(R1: Doctoral Universities – Highest research activity)
- **USNWR 혁신 부문 3년 연속 1위**
- USNWR 국립대학 115위 (#61 among publics)
- 세계 대학 순위 126위
- QS 세계 대학 순위 209위



ASU: 2017 Enrollment

■ Campus Immersion

학부 60,238

대학원 12,218

■ Digital Immersion

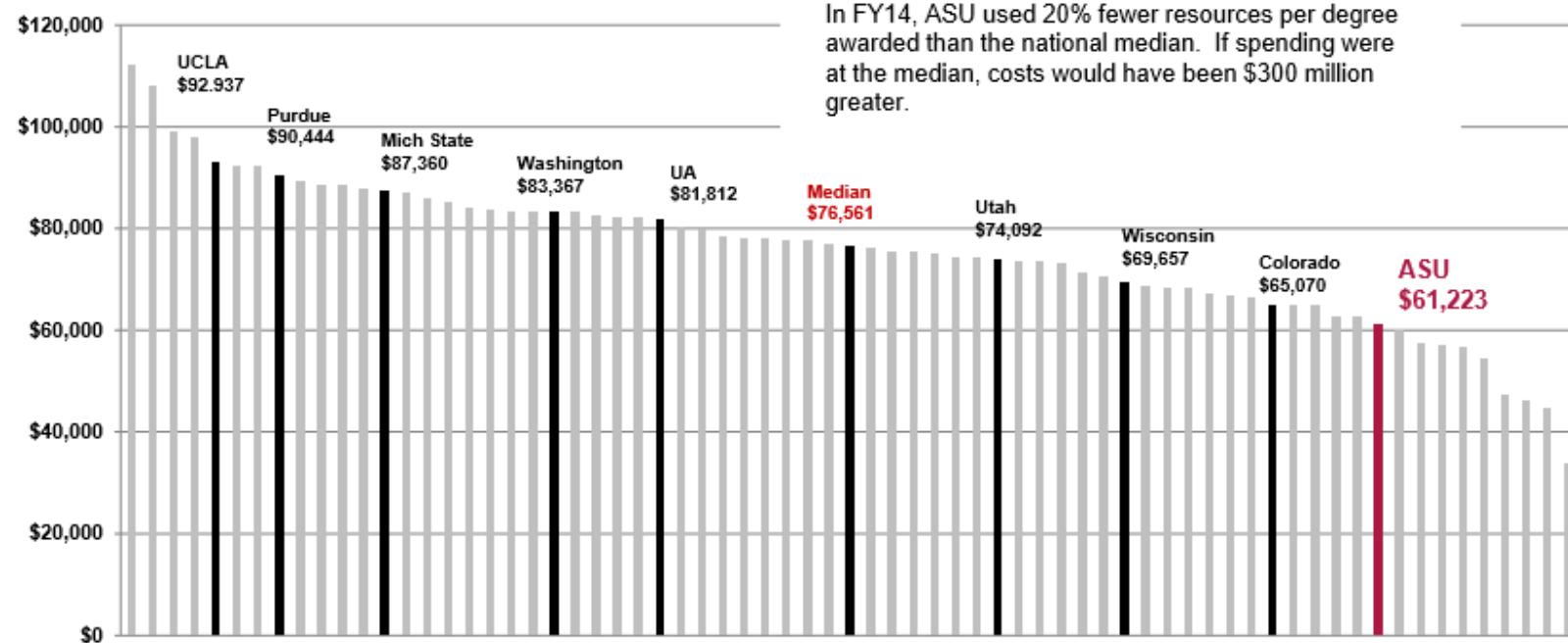
학부 22,934

대학원 7,649

■ International students

13,164*

➤ 학위 당 수업료와 지출비 (IPEDS 회계연도 2014)



4 Focal Questions

1. ASU와 같이 큰 기관이 어떻게 성공적으로 혁신할 수 있는가?
2. ASU는 어떻게 높은 학생 재적률과 졸업률을 성취했는가?
3. 얼마나 많은 학생들이 비용 절감으로 동기부여 되었고
비용 효율이 높은 혁신은 어떻게 성취되었는가?
4. The School for the Future of Innovation in Society의 역할은 무엇인가?



Education Innovation at ASU: Past, Present and Future

1. 개념적 혁신 (Conceptual Innovation)

- New American University
- ASU Charter
- 5th Wave University

2. 기관 혁신 (Institutional Innovation)

- Transdisciplinary Schools
- Partnerships

3. 디지털 혁신 (Digital Innovation)

- ASU Online
- eAdvisor

Design Aspiration

1. Leverage Our Place

ASU는 문화적, 사회경제적, 물리적 setting을 가짐

2. Enable Students Success

ASU는 각각의 독특한 학생들의 성공에 도움을 줌

3. Transform Society

ASU는 사회적 필요에 연결함으로써 사회적 변화를 촉진함

4. Fuse Intellectual Disciplines

ASU는 학문적 훈련을 초월함으로써 지식을 창출함

Design Aspiration

5. Value Entrepreneurship

ASU는 그 지식을 사용하고 혁신을 격려함

6. Be Socially Embedded

ASU는 상호간의 이로운 파트너십을 통해 공동체와 연결함

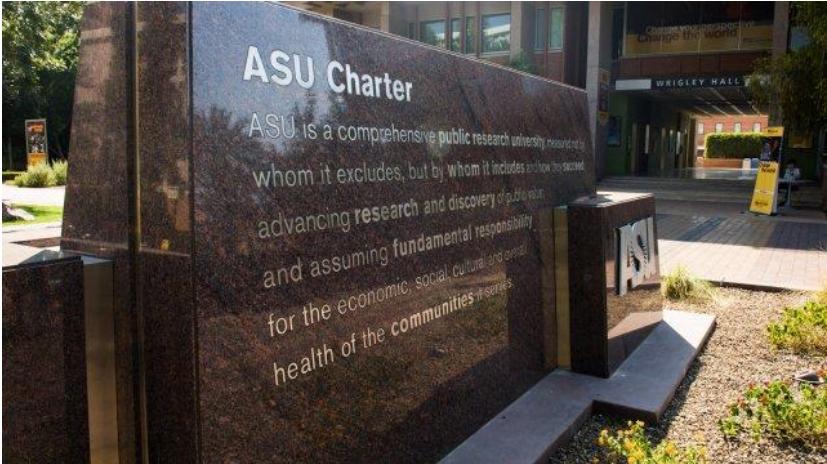
7. Conduct Use-Inspired Research

ASU 연구는 목적과 영향력을 가짐

8. Engage Globally

ASU는 지역적, 전국적, 국제적인 사람들과 이슈들을 다룸

ASU Charter



Charter Principles

1. Inclusion vs. exclusion
(Open and accessible to community)
2. Impact on public good
3. Responsibility for the broader community

ASU is a comprehensive public research university, measured not by whom it excludes, but by whom it **includes** and how they **succeed**; advancing research and discovery of **public value**; and assuming **fundamental responsibility** for the economic, social, cultural, and **overall health** of the communities it serves.

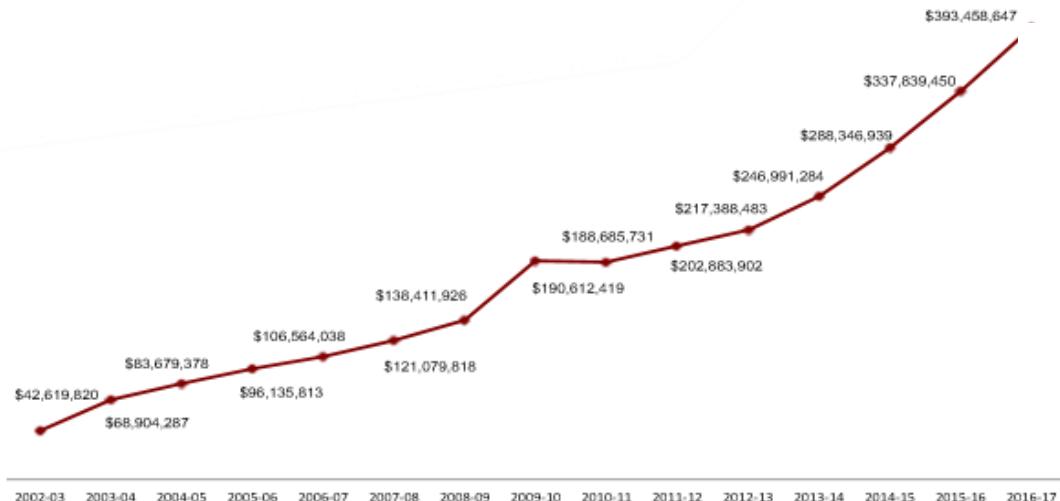
“누구를 배제함으로써 성공하는 것이 아니라 함께 포용함으로써 성공할 수 있는 모델, 공공선에 도움이 되는 연구와 발명을 지향하는 모델, 공동체의 건강과 복지 뿐만 아니라 경제, 사회, 문화적 활력을 불어넣는 것을 주된 책무로 삼는 모델”

ASU Charter in Action

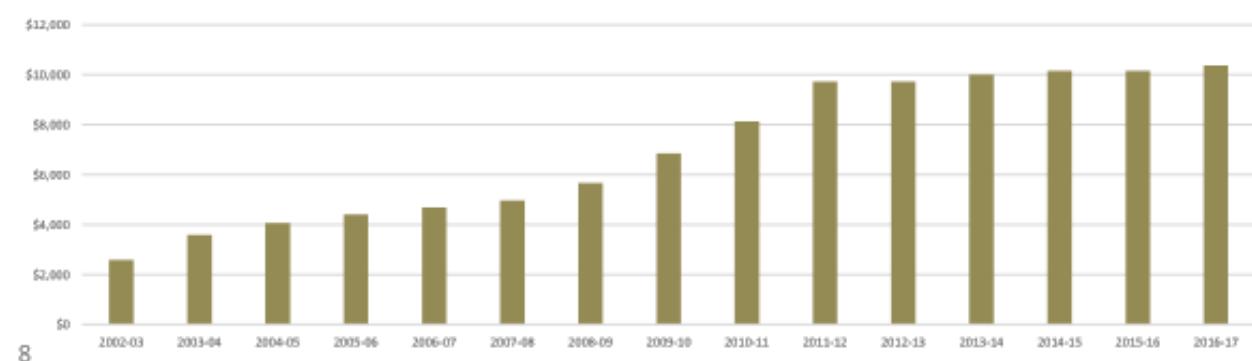
| Metric | 1985 | 2017 | |
|-----------------------------------------------------------------------------------|--------------|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ASU undergraduates from Arizona from families in the lower half of family incomes | ~2% | ~50% | Notes |
| Freshmen retention rate | ~65% | ~85% | |
| Percent minority students | ~15% | ~50% | |
| Number of Hispanic students in freshmen class | 225 | ~3,000 | |
| Number of degrees awarded | ~6,200 | ~24,000 | |
| 6-year graduation rate | Not recorded | ~70% | |
| 4-year graduation rate | 13.80% | >52% | |
| Average net tuition paid by AZ residents (after considering all aid strategies) | Not recorded | ~\$2,000 | |
| Research funding | \$29M | \$530M | Ranked in the Top 10 of all U.S. universities without a medical school in the U.S. and ranked among the 100 leading research universities in the world. This translates into more than 10,000 research projects that provide extraordinary opportunity and experience for our students |

Restructuring financial aid model

- Grants and Scholarships Provided by ASU

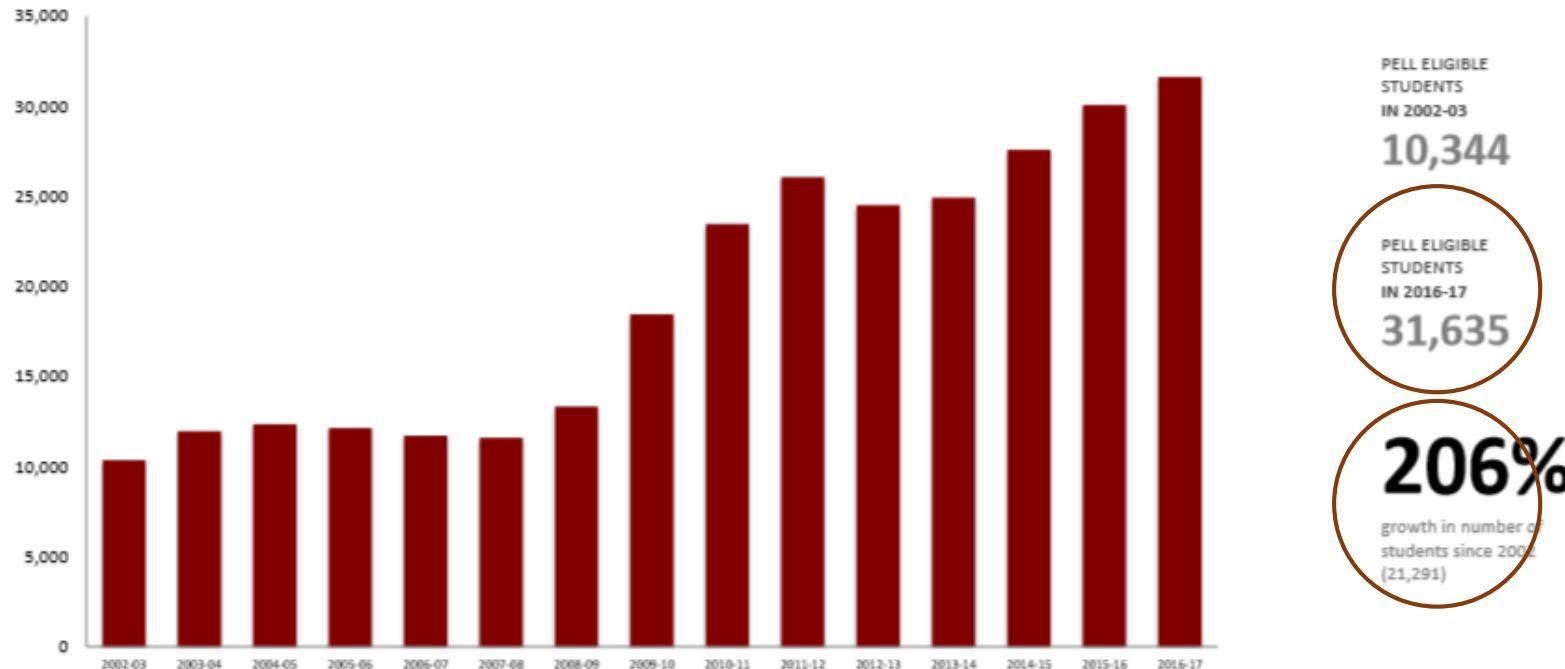


- ASU Tuition and Fees



→ 수업료 상승과 주(state)의 투자 감소로,
학생들에게 더 많은 도움을 주기 위해 경제적 지원 모델을 재구조화함

Restructuring financial aid model



PELL ELIGIBLE
STUDENTS
IN 2002-03

10,344

PELL ELIGIBLE
STUDENTS
IN 2016-17

31,635

206%

growth in number of
students since 2002
(21,291)

2016-2017
지원받는 학생들이
전체 학생의 3분의 1

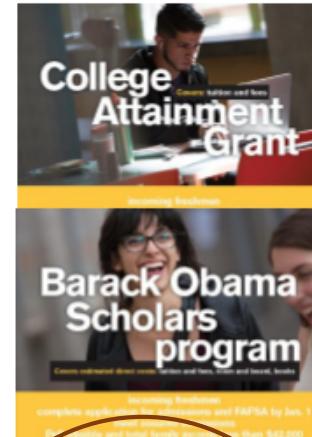
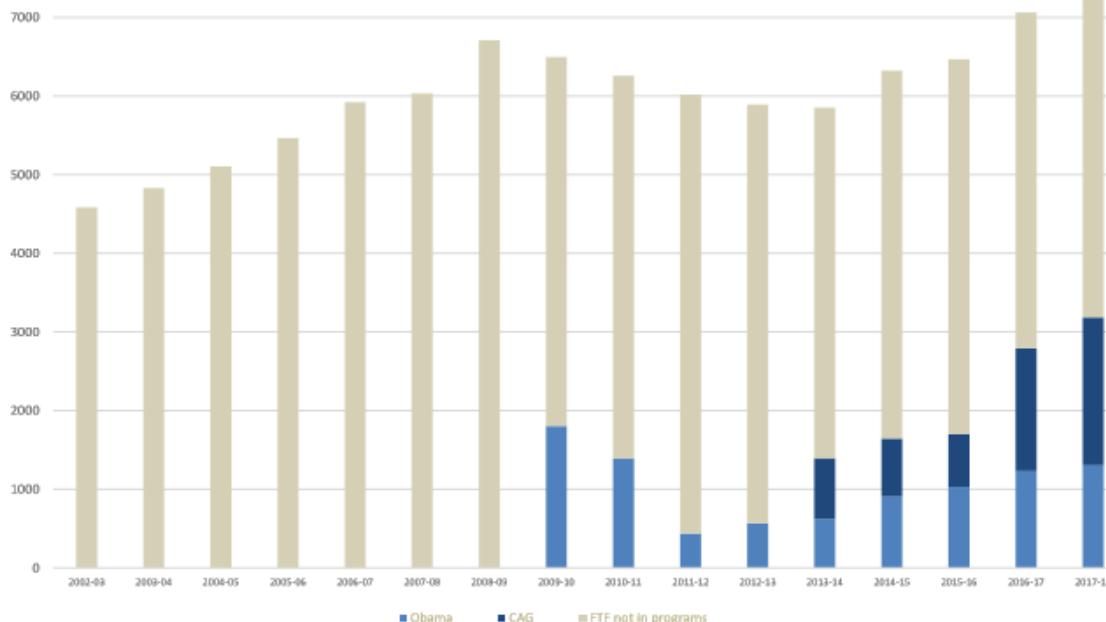
2002년 이후의
학생 수 증가율

Restructuring financial aid model

▪ 수업료 없는 프로그램 설계

We designed tuition-free programs to serve Arizona

First-Time Freshmen from Arizona



42%
of First-Time Freshmen
from Arizona in 2017-18
were in a tuition-free
program

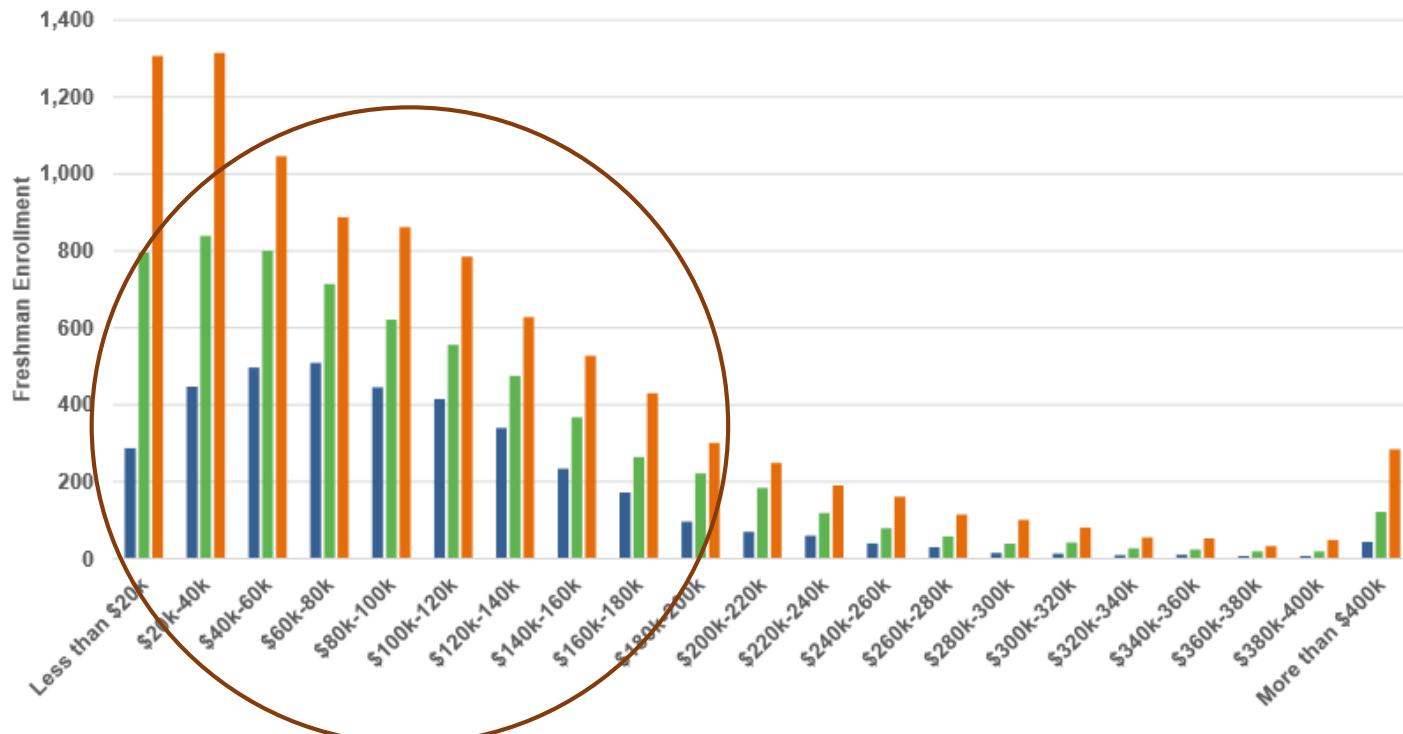
2017-2018
애리조나 주의 42%의 First-Time Freshmen
수업료를 내지 않는 프로그램

Restructuring financial aid model

- 가계 소득이 낮은 학생들

We are serving more student from families with lower incomes:

ASU First-Time Full-Time Freshmen Enrollment by Adjusted Family Income

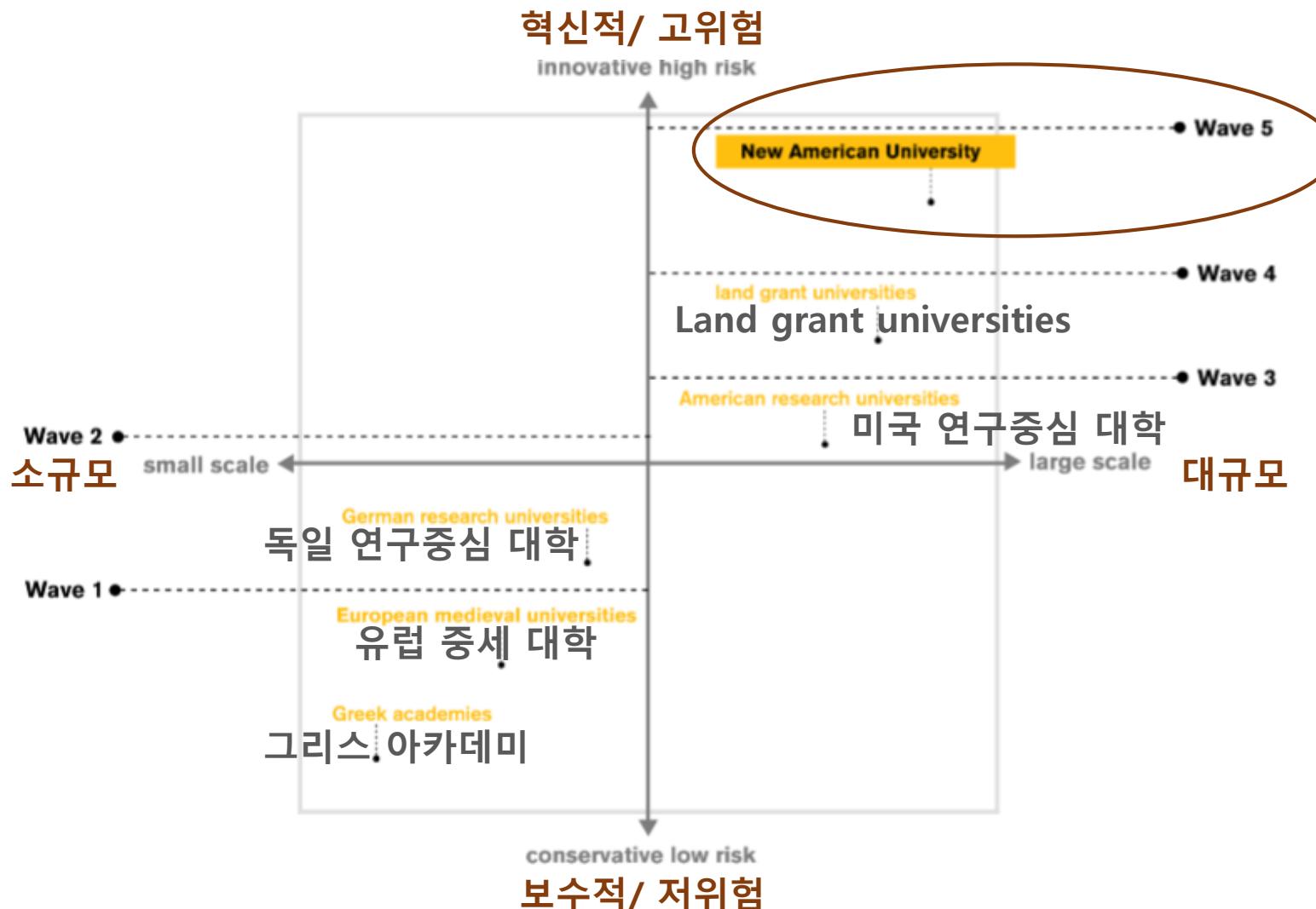


Institutional Innovation

- 기존의 전통적인 전공 및 학과 중심의 체계를 재구조화
- 단과대학을 “특정 주제 혹은 목표를 중심으로 학생과 교수를 중심으로 조직된 지적 연결 단위”로 규정하여, 학과가 아닌 대학을 중심으로 교수 및 학생 간의 조직이 유연하게 구성될 수 있도록 함
- 18개의 최첨단, 초학문적 대학들 (transdisciplinary schools)
 - School of Earth & Space exploration
 - School for the Future of Innovation in Society
 - School of Civic and Economic Thought and Leadership

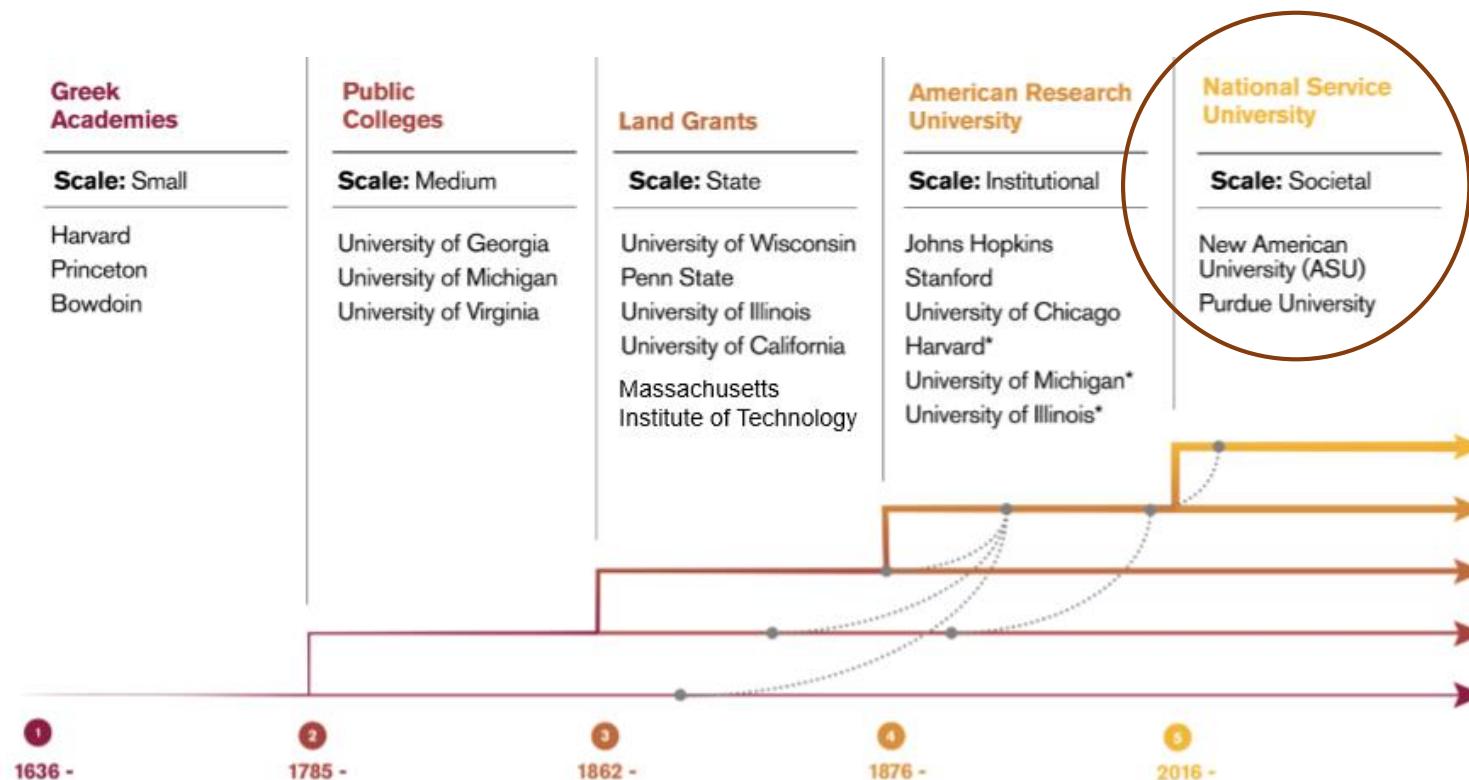


Higher Education Evolution



Evolutionary History of American Higher Education

ASU는 전반적인 공공 연구 대학



Global Freshman Academy

- MOOC을 통해 1학년 전 과정을 이수할 수 있는 프로그램
- edX와 협약을 맺어 도입
- 1학년 수준의 기초 과정으로 구성되어 있음
- 전 세계 누구라도 \$49을 내고 등록한 후, 개별 강의를 학점 당 \$600로 수강 가능
- 온라인으로 시험을 치른 후 C학점 이상 받을 경우에만 학점 취득이 가능하지만, 자신의 성적을 확인한 이후에 등록금을 납부하도록 되어 있음
- 온라인으로 대학이 미리 지정해둔 10개 강의 중 8개 강의에서 C학점 이상을 받으면, 2학년부터 대학 캠퍼스에서 수강 가능
- 온라인 강좌를 확대하여 2년제 대학에서 편입이 자유로움

What is e-Advisor?

ASU's overall commitment to ensure our students reach their academic goals and graduate

- 학생들이 학업 목표에 도달하고 졸업할 수 있도록 함
- 학생들의 진행 상태를 점검 (monitors student progress)
- 온라인 학습 자원을 제공 (provides online academic resources)
- 학생들에게 조언을 해주고 그들이 처음에 잘 시작하고 졸업까지 순조롭게 진행할 수 있도록
개별화된 도구를 사용 (uses personalized tools to advise students and ensure they get off
to a good start on day one and stay on track toward graduation)

What is e-Advisor?

Step 1: Help students identify interests

Me3: 관심 진로를 찾도록 학생들의 개인적인 흥미에 기반하여 60개의 이미지를 맞추도록 하는

The image displays three screenshots of the ASU e-Advisor platform, showing the process of matching interests:

- Screenshot 1 (Left):** Shows a pop-up window titled "Alicia, discover what's right for you." with the text "Play the image game to explore possible career interests." Below are two images: one of a hammer and wrench, and another of a watering can and small plants. A green rectangular box highlights the second image.
- Screenshot 2 (Center):** A "Compare Programs | Compare Major Maps" page. It lists three majors: Accountancy, Business (Global Leadership), and Finance. Each section includes a "Major Map" (2016 - 2017), "Apply Now" button, and "Request Info" button. Below each major map is a "What If" section and a "Program Description".
- Screenshot 3 (Right):** A "Great choices! Now compare your options in depth to choose the best fit for you." page. It shows a grid of career paths: Photographers, Set and Exhibit Designers, Film and Video Editors, Marketing (Digital and Integrated Marketing Commun...), Design Studies (Design Management), and Journalism and Mass Communication. A green arrow points from the "Compare" button in Screenshot 2 to the "Compare" button in Screenshot 3.

What is e-Advisor?

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Me3: 관심 진로를 찾도록 학생들의 개인적인 흥미에 기반하여 60개의 이미지를 맞추도록 하는
온라인 도구

<https://www.youtube.com/watch?v=KN-RATA0C8Y>

- **플랫폼:**
 - 진로를 대학 전공과 연결
 - 개별화된 고등학교 Major map을 제공
 - : 고등학교 졸업, Arizona 주의 대학 입학, 선택한 전공에서 성공적인 1학년 대학 학생들의 전공 선택과 진로 탐색을 지원
- **결과:**
 - 미국 전역과 전 세계 10만 명이 넘는 사용자

What is e-Advisor?

Step 2: Help students find degrees that match their interests

- Degree Search

학생들은 그들에게 가장 중요한 기준으로 학업 프로그램을 검색하고 비교할 수 있음

The screenshot shows the 'Undergraduate Degrees' search page on the ASU Academic Programs website. At the top, there's a navigation bar with links for 'ASU Home', 'My ASU', 'Colleges and Schools', 'Map and Locations', 'Directory', and 'SIGN IN'. Below the navigation is a search bar with a magnifying glass icon. The main header reads 'Undergraduate Degrees' with a sub-instruction: 'Search ASU undergraduate programs for description, major requirements, career opportunities and interest areas.' Below the header is a large image of a woman looking through a globe. The search form includes fields for 'What do you want to study?' (with a placeholder 'keyword, interest, subject, etc.'), 'What do you want to be?' (with a placeholder 'career title or description'), and 'Where do you want to study?' (with a 'Location' dropdown). To the right of these fields are 'Additional Options' checkboxes for 'Online Programs', 'Accelerated Programs', and 'Concurrent Programs'. A prominent red 'Search Degrees' button is located to the right of the search form. Below the search form, a link says 'Not sure? Take these quizzes to find the degree or campus that fits you.' Further down, there's a link to 'Advanced Search' and a note about saving search results. At the bottom, there's a section titled 'Explore Undergraduate Degrees By Interest' with four small thumbnail images. The ASU logo is at the very bottom.

What is e-Advisor?

Step 3: Chart progress towards a degree with Major Maps

Major Map이란?

- Major Map Outline:
 - 어떤 수업을 들을지 (학위 요구조건)
 - 언제 들을지 (코스 순서)
 - 졸업하기 위해 요구되는 코스 학점
- 전일제 학생들이 4년 안에 졸업하기 위해 **학기 당 평균 15시간을 듣기를 추천**

What is e-Advisor?

Step 3: Chart progress towards a degree with Major Maps

2018 - 2019 Major Map

Innovation in Society, BS

School/College: [School for the Future of Innovation in Society](#)

Location: [Tempe campus](#)

FIFISBS

| Term 1 0 - 14 Credit Hours Critical course signified by ♦ | Hours | Minimum Grade | Notes |
|--------------------------------------------------------------------------------------------------------------------------------------------|-------|---------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| ♦ FIS 101: SFIS: The ASU Experience | 1 | | |
| ♦ FIS 111: Welcome to the Future | 3 | C | |
| ENG 101 or ENG 102: First-Year Composition OR ENG 105: Advanced First-Year Composition OR ENG 107 or ENG 108: First-Year Composition | 3 | C | <ul style="list-style-type: none">An SAT, ACT, Accuplacer, IELTS or TOEFL score determines placement into first-year composition courses |
| MAT 170: Precalculus (MA) | 3 | | <ul style="list-style-type: none">ASU Mathematics Placement Test score determines placement in mathematics course |
| Natural Science - Quantitative (SQ) | 4 | | <ul style="list-style-type: none">ASU 101 or college-specific equivalent First-Year Seminar required of all freshman students |
| Term hours subtotal: | 14 | | <ul style="list-style-type: none">Join a student club or professional organization |

What is e-Advisor?

Step 4: Automate Feedback between Student and Advisor

학생이 중요한 요구사항(requirements)을 충족하지 못하면,

학생은 이메일로 공지를 받게 됨

→ 학생이 Track을 벗어났고, 그 상태가 해당 학생의 MY ASU 학생 페이지에 보여진다는 공지

The image shows two side-by-side screenshots. On the left is an email from eAdvisor titled "Re: Action Required: Review Your Tracking Status". The email body states: "ASU has reviewed your progress towards completing the critical requirements described on your Major Map. Your Major Map and progress reports can be viewed by logging into <http://my.asu.edu>. If you have an eAdvisor advising hold, you must contact your advisor to have the hold released and for assistance with: reviewing your critical requirements, determining the applicability of courses that you may be completing at a community college, discussing how you can use winter and summer sessions to complete any missing critical requirements, and exploring success strategies. You can contact your advising office at: Advising Office: [College of Liberal Arts and Sciences](#). Phone: 480/965-5095. Web Address: <http://humancommunication.clas.asu.edu/undergraduate/advising.shtml>. We hope you're having a good semester. ASU faculty, advisors and staff are dedicated to helping you succeed—let us know how we can help you." On the right is a screenshot of the MY ASU student dashboard. It features a "Priority Tasks" section with tabs for Academics, Finances, and Campus Services. Under Academics, there are three items: "HOLD: eAdvisor Hold - 2016 Fall" (unchecked), "Application Fee" (unchecked), and "Ready to Register for Fall?" (unchecked). Under Finances, there is one item: "Parent IRS Data Retrieval" (unchecked). Under Campus Services, there is one item: "None" (indicated by a thumbs-up icon). Below the tasks is a navigation bar with links: "My Programs and eAdvisor™", "Programs", "Find Programs", "Graduation", "Psychology (BS) | Tempe - Off Track", "Major Map", "My Progress Reports (DARS)", "College of Liberal Arts and Sciences", "Advising", and "Success Coaching".

What is e-Advisor?

Step 5: Track Progress

The Sun Devil Tracking Status report

: Advisors와 administration에 그룹 내에서 학생들이 track on- or off-에 대한 정보를 제공



Career Nbr: 0 Career: UGRD Academic Standing: Good Standing
Total Hours: 76.00000 Total Upper Division Hours: 3.00000
2015 Fall 15.000 2.680
2016 Spring 17.000 2.680

Requirement Types: Critical Major Requirement, Necessary Requirement
Status: On Track (green checkmark), Off Track (red X), On Track by Override (yellow checkmark), Out of sequence (red X), No Status - Term 0 (green circle)

| Requirement Detail | Reason | Course/GPA | Grade | Units | Term Taken | Transfer/Pending Course |
|----------------------------------------------------------------------------------------------------------------------------------------------|-----------------|------------|-------|-------|-------------|-------------------------|
| ENG 101 OR ENG 107: 3 hours, C minimum | Requirement met | ENG 101 | C | 3.00 | 2014 Fall | |
| MAT 117 (MA): 3 hours, C minimum OR MAT 170 (MA): 3 hours, C minimum OR MAT 251 (MA): 3 hours, C minimum OR MAT 270 (MA): 4 hours, C minimum | Requirement met | MAT 170 | C+ | 3.00 | 2015 Spring | |
| PSY 101 (SB): 3 hours, C minimum | Requirement met | PSY 101 | B | 3.00 | 2015 Spring | |
| Elective: 1 hour | Requirement met | ENG DEC | TB | 3.00 | 2013 Fall | |
| Humanities, Arts and Design (HU): 3 hours (H recommended) | Requirement met | ARS 102 | B | 3.00 | 2015 Fall | |
| PSY 191 OR LIA 101: 1 hour | Requirement met | WST 191 | A | 1.00 | 2014 Fall | |

Track Term 1 (0 - 14) Credit Hours

| Requirement Detail | Reason | Course/GPA | Grade | Units | Term Taken | Transfer/Pending Course |
|----------------------------------------------------------------------------------------------------------|-----------------|------------|-------|-------|-------------|-------------------------|
| ENG 102 OR ENG 108: 3 hours, C minimum | Requirement met | ENG 102 | B | 3.00 | 2015 Spring | |
| MAT 170 (MA): 3 hours, C minimum OR MAT 251 (MA): 3 hours, C minimum OR MAT 270 (MA): 4 hours, C minimum | Requirement met | MAT 170 | C+ | 3.00 | 2015 Spring | |
| Complete ENG 101 OR ENG 105 OR ENG 107 | Requirement met | ENG 101 | C | 3.00 | 2014 Fall | |
| Requirement met | Requirement met | PPS 104 | C | 3.00 | 2015 | |

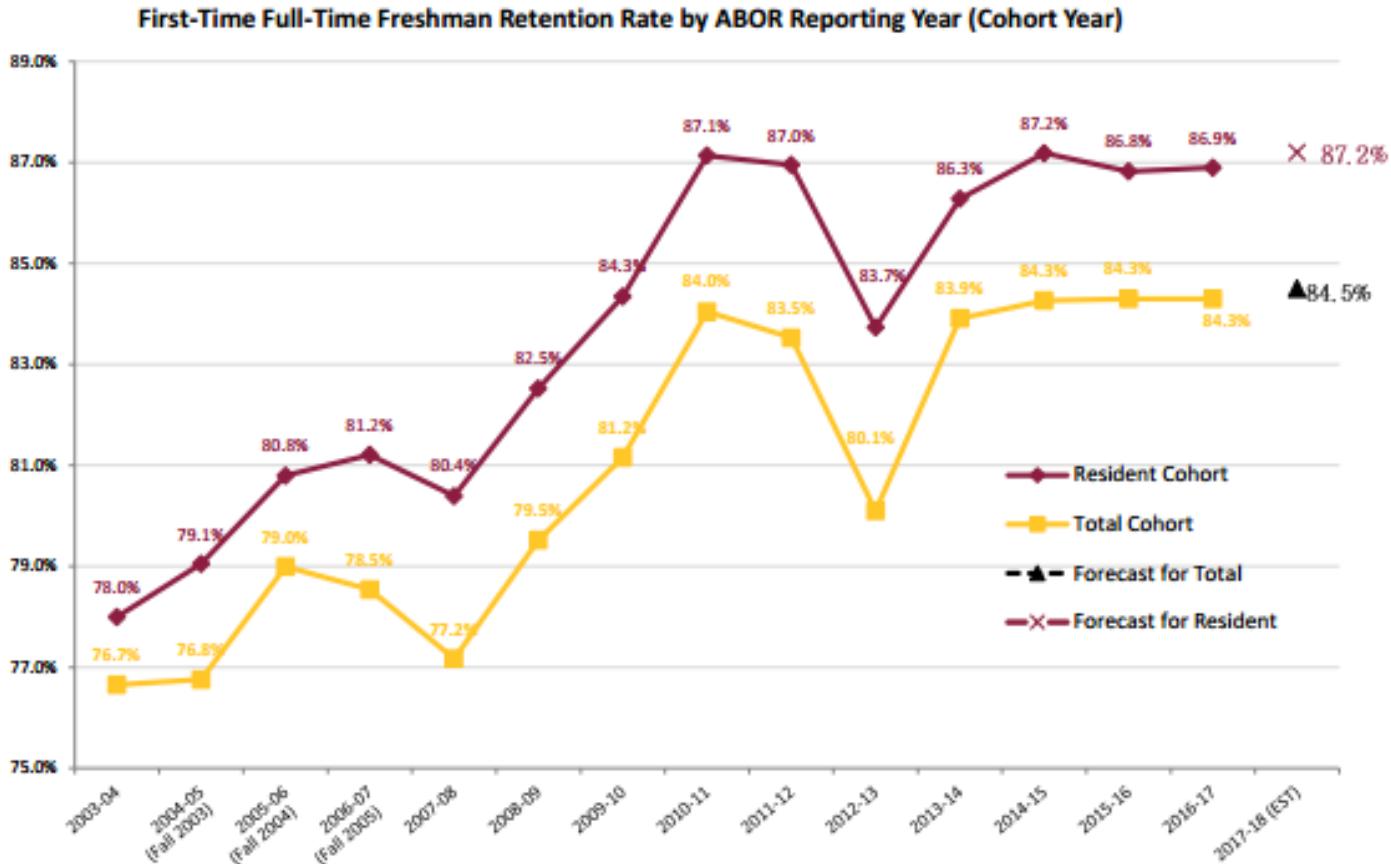
Track Term 2 (15 - 20) Credit Hours

| Requirement Detail | Reason | Course/GPA | Grade | Units | Term Taken | Transfer/Pending Course |
|----------------------------------------------------------------------------------------------------------|-----------------|------------|-------|-------|-------------|-------------------------|
| ENG 102 OR ENG 108: 3 hours, C minimum | Requirement met | ENG 102 | B | 3.00 | 2015 Spring | |
| MAT 170 (MA): 3 hours, C minimum OR MAT 251 (MA): 3 hours, C minimum OR MAT 270 (MA): 4 hours, C minimum | Requirement met | MAT 170 | C+ | 3.00 | 2015 Spring | |
| Requirement met | Requirement met | PPS 104 | C | 3.00 | 2015 | |

eAdvisor Outcomes/Savings

| New Graduates Total | Student Cost Savings | ASU recurring Cost Savings | |
|------------------------------------------------------------|---------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|--------------------------------------------------------------------|
| 3,070 additional graduates 3,070명의 졸업생 | \$24,500 per student equal to one additional year at ASU | \$7.3 Million advising costs \$6.5-6.9 Million instructional costs | 730만 달러 절감 (advising 비용) 650만~690만 달러 절감 Instructional 비용 |
| | 비용절감 학생들에게 1년 비용을 절감 | | |

Improving our Full-Time Freshman Retention Rate



RESIDENT RETENTION

87.2%

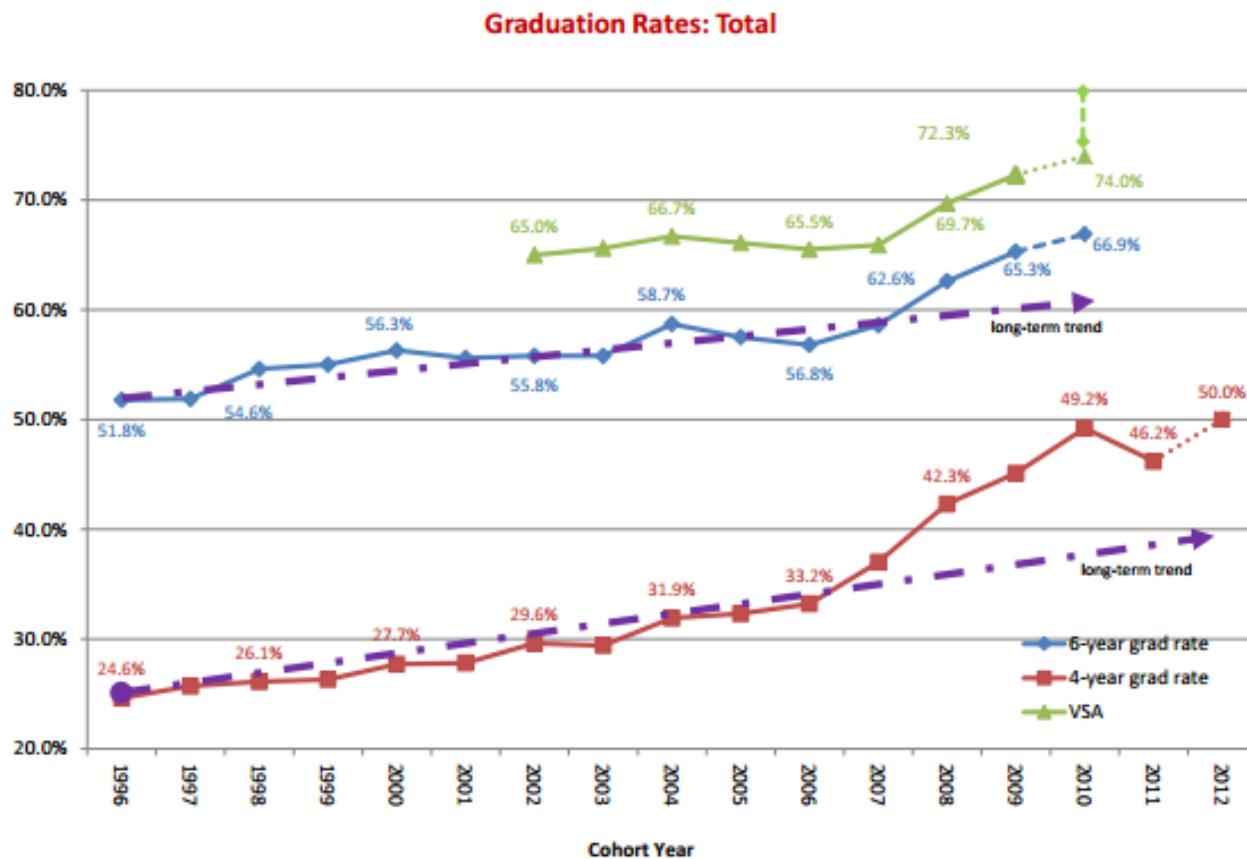
12% growth
since 2002 (78.0%)

TOTAL RETENTION

84.5%

10% growth
since 2002 (76.7%)

Improving Four- and Six-Year Graduation Rates



74%

Voluntary System of Accountability
(VSA) GRADUATION RATE
14% INCREASE

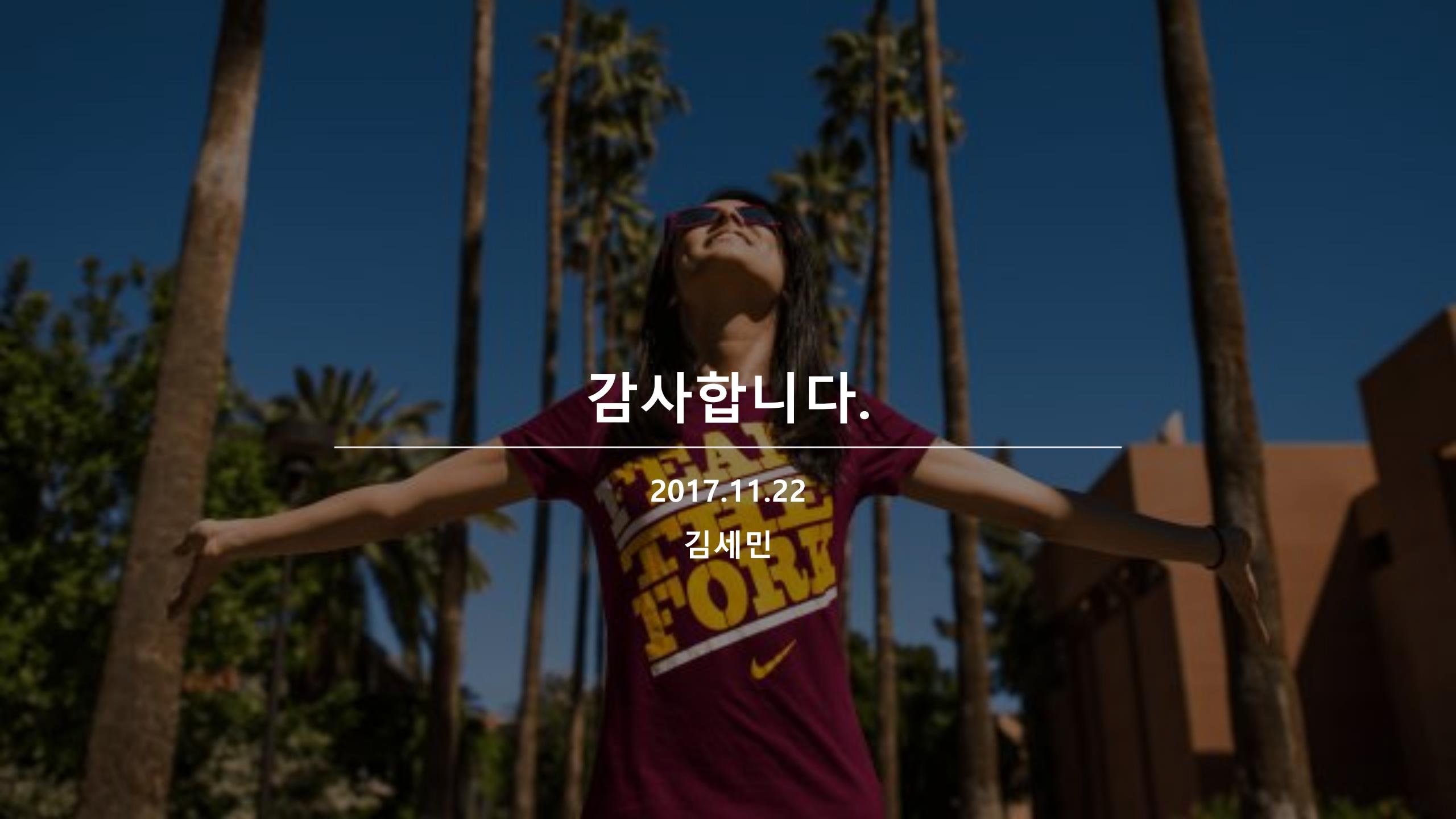
66.9%

6-YEAR GRADUATION RATE
29% INCREASE

50%

4-YEAR GRADUATION RATE
103% INCREASE

Q&A



감사합니다.

2017.11.22

김세민