MINUTES OF MEETING

BOARD OF TRUSTEES

VOLUME 315

February 21, 2020

A meeting of the Board of Trustees was held in Dean's Hall of the Penn Stater Hotel and Conference Center, University Park, PA, at 1:00 p.m. on February 21, 2020.

The following Trustees were present: Dambly (chairman), Schuyler (vice chairman), Barron, Amoros, Brown, Casey, Cotner, Culler, Delligatti, Detwiler, Dietrich, Doran, Dunn, Fenza, Han, Harpster, Hartzler, Hoffman, Jubelirer, Kleppinger, Lubert, Masser, Oldsey, Paterno, Potts, Rakowich, Rapp, Redding, Schneider, Short, Stanell, Tribeck and Wagman. The Governor's non-voting representative, Mr. Shipley, was in attendance.

Present by invitation were Faculty Senate members Clements, Ozment, Rowland, Seymour, Williams and Wolfe; student representatives Gatten, Griggs, Hairston, Kelling, McKinney, Tierney, Near, and Walsh; representatives Bechtel-Wherry, Belkowski and Houston; and staff members Barbour, Bieschke, Dunham, Goffe, Gray, Guadagnino, Huston, Jones, Lokman, Massini, Moore, Mulroy-Degenhart, Pangborn, Sims, and Whitehurst.

Chair Dambly called for a moment of silence to recognize the recent passing of Dr. Duane F. Alexander, husband of Trustee Emerita, Marianne Alexander.

Continuing, Chair Dambly made the following statement. "On behalf of the Board of Trustees and the leadership of Penn State, I am pleased to announce that we have reached a resolution of the outstanding issues between the University and the Paternos."

[See https://youtu.be/zxdP5ro3448 for complete statement]

Chair Dambly reported on THON and noted that B. Stephen Carpenter began his tenure as Dean of the College of Arts and Architecture on January 1, 2020. Also noted was David Gray, Senior Vice President of Finance and Business announcing his retirement in August.

Chair Dambly then introduced two student guests who were invited to address the Board. Emmanuel Houndo a senior in Health Policy and Administration and Music and Amina Faye, senior in Musical Theatre spoke about what Penn State has meant to them, their accomplishments and pride for the university. On the topic of Artificial Intelligence there were three speakers to address the Board. Daren Coudriet, Executive Director of the Nittany A.I. Alliance; Joel Seidel, junior IST and Economics; and Christie Warren, a junior majoring in Graphic Design.

Chair Dambly also recognized the outgoing student leaders for their engagement and collegiality. From UPUA, President Laura McKinney and Vice President Jake Griggs; from CCSG, President Kenny Gatten and Vice President Synthea Hairston; from GPSA, President Claire Kelling and Vice President Charles Tierney; and from WCSGA President Sean Walsh and Vice President Tanya Near. Trustee Steve Wagman was also thanked for representing the Board on the Selection Committee for the Penn State Laureate.

Finally, Chair Dambly recognized those Emeriti Trustee Members in attendance: Clemens, Myers, Riley, and Robinson.

The Chair called the meeting to order and noted that the Board met in Executive Session earlier in the day to discuss various privileged matters

Shannon Harvey, Director of the Board Office, reported that all Trustees but Dandrea, Pegula, Pope, Rivera and Wolf were in attendance. Chair Dambly noted that the number present for a quorum was satisfied and proceeded with the meeting.

Action Items – Consent Agenda

Chair Dambly noted that Action Items A-F presented in the Consent Agenda had been grouped for the sake of efficiency, but that each Trustee was entitled to request that any item be discussed and voted on individually. Chair Dambly provided background for each of these items. The Committee on Finance, Business and Capital Planning recommended that the Board of Trustees approve resolutions C-E and the Committee on Audit and Risk recommended approval of resolution F. A motion to approve Consent Agenda Action Items A-F, was seconded and approved by the Board.

A. Approval of the *Minutes* of the meetings of the Board held on November 15, 2019

B. Approval of 2021 Dates for Meetings of the Board of Trustees

February 18-19, 2021	(Thursday-Friday)
May 6-7, 2021	(Thursday-Friday)
July 14-16, 2021	(Wednesday-Friday) – Penn State Behrend
September 16-17, 2021	(Thursday-Friday)
November 11-12, 2021	(Thursday-Friday)

C. Proposed Naming of the Guion S. Bluford Building at Innovation Park

RESOLVED, That the 230 Building at Innovation Park be named the "Guion S. Bluford Building."

D. Proposed Renaming of the Centre County/Penn State Visitor Center at University Park "Centre County Visitor Center"

RESOLVED, That the Centre County/Penn State Visitor Center at University Park be renamed "Centre County Visitor Center."

E. Proposed Appointment of Non-University Employees to the Penn State Investment Council

RESOLVED, That James Brandau, non-University employee, is appointed to the Penn State Investment Council for a term ending in 2022.

F. Proposed Authorization to Engage Auditors

RESOLVED, That the Officers of the University are authorized to engage Deloitte & Touche LLP, Certified Public Accountants, for the audit of the accounts of the University for the year ending June 30, 2020.

Action Items – Other

A. Proposed Final Plan Approval and Authorization to Expend Funds, East Halls Renovation – Phase 2B, University Park

David Gray, Senior Vice President for Finance and Business/Treasurer provided supporting remarks and context for this item. A motion to approve the following resolutions was seconded and approved by the Board.

RESOLVED, That the final plans for the East Halls Renovation – Phase 2B at University Park, as designed by Clayco of St. Louis, Missouri, are approved.

FURTHER BE IT RESOLVED, That authorization to expend funds to accomplish the project is approved in the amount of $82,500,000.

B. Proposed Final Plan Approval and Authorization to Expend Funds, Ostermayer Laboratory Renovation, Penn State Greater Allegheny

David Gray provided supporting remarks and context for this item. A motion to approve the following resolutions was seconded and approved by the Board.

RESOLVED, That the final plans for the Ostermayer Laboratory Renovation, as designed by Turner Construction Company of Pittsburgh, Pennsylvania, are approved.

FURTHER BE IT RESOLVED, That authorization to expend funds and award contracts to accomplish the project is approved in the amount of $14,700,000.

C. Proposed Final Plan Approval and Authorization to Expend Funds, Beaver Community Center Expansion, Penn State Berks

David Gray provided supporting remarks and context for this item. A motion to approve the following resolutions was seconded and approved by the Board.

RESOLVED, That the final plans for the Beaver Community Center at Penn State Berks, as designed by Atkin Olshin Schade Architects of Philadelphia, Pennsylvania, are approved.

FURTHER BE IT RESOLVED, That authorization to expend funds to accomplish the project is approved in the amount of $30,400,000.

D. Proposed Final Plan Approval and Authorization to Expend Funds, Lehigh Valley Expansion, Penn State Lehigh Valley

David Gray provided supporting remarks and context for this item. A motion to approve the following resolutions was seconded and approved by the Board.

RESOLVED, That the final plans for the Lehigh Valley Expansion at Penn State Lehigh Valley, as designed by Spillman Farmer Architects of Bethlehem, Pennsylvania, are approved.

FURTHER BE IT RESOLVED, That authorization to expend funds to accomplish the project is approved in the amount of $14,400,000.

E. Changes in Room and Board Charges for 2020-21 Academic Year

David Gray provided supporting remarks and context for this item. A motion to approve the following resolution was seconded and approved by the Board.

RESOLVED, That room and board charges at all locations be increased as shown on Schedules I through V attached hereto and which are a part of this resolution.

[See Schedule I – V and Appendix I]

F. Proposed Annual Applications, Renewals, and other Filings Required by the Pennsylvania Liquor Control Board

David Kleppinger, chair of the Legal and Compliance Committee provided remarks and context for this item. A motion to approve the following resolutions was seconded and approved by the Board.

WHEREAS, The Pennsylvania Liquor Code authorizes the Pennsylvania Liquor Control Board to issue various licenses and permits related to the sale and service of alcoholic beverages, subject to a well-defined set of regulations; and

WHEREAS, It is the desire of The Pennsylvania State University to sell and serve alcoholic beverages under the conditions previously approved by the Board of Trustees; and

WHEREAS, It is the desire of The Pennsylvania State University to file appropriate applications for licensures and permits either through an application processes, biennial application renewal processes, or a validation process, as applicable; and

THEREFORE BE IT RESOLVED, That David J. Gray, Senior Vice President for Finance and Business/Treasurer and/or Joseph J. Doncsecz, Corporate Controller, or any appropriate designee(s), is/are authorized to execute applications, renewal forms, and any other documents or instruments required by the Pennsylvania Liquor Control Board, and to take such other actions as may be required in connection with any such applications, renewals or validations; and

RESOLVED FURTHER, That material changes to the terms and conditions previously approved by the Board of Trustees with respect to such licenses and permits shall be submitted to the Board of Trustees for its consideration and approval.

President's Report and Discussion

President Barron delivered a report titled *Penn State Directions: Technology and the Future of Higher Education*.

For companion slides, reference [Appendix II].

The meeting is available in its entirety at https://youtu.be/zxdP5ro3448.

Announcements by the Chairman of the Board of Trustees

Chair Dambly called for other matters to come before the Board. There being no other business, the public meeting was adjourned at 2:40 p.m.

Respectfully submitted,

Frank T. Guadagnino
Secretary, Board of Trustees

Proposed Residence Hall Room Rates and Undergraduate Apartment Rates

Rate/Person/Semester

Room Description	Number of Occupants	2019/20 Current Rate	2020/21 Proposed Operating Increase	2020/21 Proposed Capital Assessment	2020/21 Proposed Rate	2020/21 Proposed Increase
Standard Double	2	$3,277	$84	$66	$3,427	$150
Standard Double/Bath	2	3,455	90	69	3,614	159
Renovated Double	2	3,628	127	73	3,828	200
Small Double	2	2,455	64	49	2,568	113
Triple	3	2,950	77	59	3,086	136
Triple/Bath	3	3,280	81	66	3,427	147
Quad	4	2,950	77	59	3,086	136
Quad/Bath	4	3,280	81	66	3,427	147
Quad as Triple	3	3,280	81	66	3,427	147
Standard Single	1	4,460	116	89	4,665	205
Standard Single/Bath	1	4,550	119	91	4,760	210
Renovated Single	1	4,550	163	92	4,805	255
Eastview Single/Bath	1	5,540	144	111	5,795	255
Eastview Large Single/Bath	1	5,945	156	119	6,220	275
RA Rate	1	2,050	64	41	2,155	105
Standard Double Suite	2	3,875	102	78	4,055	180
Standard Double Suite as Triple	3	3,280	81	66	3,427	147
Standard Single Suite, 1/bedroom	4	4,520	120	90	4,730	210
Double Suite	2	4,160	107	83	4,350	190
Single Suite	1	5,415	142	108	5,665	250
University Park, Nittany Apartment						
*Rate/Person/Semester**						
2 Bedroom Garden	4	3,975	105	80	4,160	185
4 Bedroom Garden	4	4,460	116	89	4,665	205
4 Bedroom Townhouse	4	4,630	122	93	4,845	215
Erie, Behrend Apartment						
*Rate/Person/Semester**						
2 Bedroom Garden	4	3,975	105	80	4,160	185
Harrisburg & Abington Apartment						
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Apartments-Bedroom Single	4	4,785	169	96	5,050	265
Apartments-Bedroom Double	6	4,210	146	84	4,440	230
Apartments-Bedroom Triple	9	3,790	134	76	4,000	210
Beaver, Greater Allegheny, Hazleton, & Mont Alto						
Standard Double	2	3,090	0	60	3,150	60
Standard Double Suite	2	3,650	0	75	3,725	75
Townhouse Double	2	3,255	0	65	3,320	65

Supplemental assignments will be priced at a 20 percent discount from the applicable suite or room rate. Requests for single occupancy of rooms intended for double occupancy will be priced at 25 percent more than the double occupancy rate for that room type.

Approved University Park Graduate Apartment Rates
2020/21 Rates approved by the Board of Trustees in September 2019

Room Description	2019/20 Rate	2020/21 Rate
University Park, Graduate Family Apartment		
*Rate/Month**		
White Course 1 Bedroom	$1,145	$1,168
White Course 2 Bedroom	1,295	1,321
White Course 3 Bedroom	1,430	1,459
White Course 3 Bedroom w/2 Bath	1,445	1,474
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*Rate/Person/Month**		
White Course 4 Bedroom	$920	$938

**Apartment rate includes utilities*

Proposed Board Plan Rates/Semester

Meal Plan	2019/20 Current Rate	2020/21 Proposed Rate	2020/21 Proposed Increase	2020/21 Dining Dollars
Plan 1	$2,070	$2,100	$30	$655
Plan 2	2,399	2,449	50	1,004
Plan 3	2,665	2,732	67	1,287

History of Double Room and Mid-Level Meal Plan Rates 2011 through 2021

Year	Semester Rate	Semester Increase	Percent Increase
2020/21	$5,876	$200	3.52%
2019/20	5,676	146	2.64%
2018/19	5,530	135	2.50%
2017/18	5,395	165	3.15%
2016/17	5,230	155	3.05%
2015/16	5,075	190	3.89%
2014/15	4,885	200	4.27%
2013/14	4,685	190	4.23%
2012/13	4,495	125	2.86%
2011/12	4,370	185	4.42%
2010/11	4,185	100	2.45%

UNIVERSITY MANOR APARTMENTS

CURRENT vs. PROPOSED MONTHLY RENTAL RATES

Type Occupancy	No. Units	Current Rates Per Apt.	Proposed Rates Per Apt.	Amount Increase
University Manor East				
1 Bedroom (with Washer/Dryer)	24	$ 985	$ 995	$ 10
2 Bedroom (with Washer/Dryer)	208	$ 1,172	$ 1,190	$ 18
3 Bedroom (with Washer/Dryer)	16	$ 1,320	$ 1,340	$ 20
University Manor West				
4 Bedroom (furnished) *	31	$ 2,352	$ 2,420	$ 68

* NOTE: Proposed monthly increase per bedroom is $ 17.

MONTHLY RENTAL RATE COMPARISON

UNIVERSITY MANOR vs. PRIVATE APARTMENT COMPLEXES

The rental rates that follow are the proposed University Manor rental rates as compared to the current rates for private apartment complexes in the Hershey area. The average private rental rate has been adjusted to include utility expenses where none previously existed in the rental rate. This then provides an "apples-to-apples" rate comparison.

The average difference between the proposed University Manor rates and the current private apartment rates are:

DIFFERENCES BETWEEN UNIVERSITY MANOR AND PRIVATE APARTMENT RENTAL RATES

	Average Private Rates	University Manor Proposed Rates	Difference
1 Bedroom	$ 1,100	$ 995	$ 105
2 Bedroom	$ 1,251	$ 1,190	$ 61
3 Bedroom	$ 1,437	$ 1,340	$ 97
4 Bedroom	$ 3,120	$ 2,420	$ 700

All University Manor Apartments have air-conditioning, modern kitchen appliances, wall-to-wall carpeting, draperies/mini-blinds, and washers/dryers (only applies to UME). All utilities are included except Cable TV and long-distance telephone service. Additionally, high-speed wired and wireless Internet service is provided in all University Manor East and West apartments. A fire detection/suppression sprinkler system installation project in University Manor East was completed in July 2007. University Manor West apartment fire detection/suppression sprinkler system installation was completed in August 2011.

2020/2021

Room and Board Rate Proposal
Housing and Food Services

- Budget Planning Factors
- Expense Increases
- Proposed Room and Board Rates
- History of Double Room and Meal Plan Rates

PennState

Budget Planning Factors for 2020/21

Housing and Food Services is a self-supporting auxiliary enterprise. As such, monies paid by students and guests for food and lodging are the only funds available to pay all operating expenses, building loans, and interest payments as well as costs for major maintenance and facility renewal. Neither state funds nor tuition dollars are used for construction, maintenance of facilities, or the operations of the housing and dining program.

Housing and Food Services is committed to the goals of providing quality living experiences for students in well maintained facilities while adhering to the financial plan to minimize increases to student expenses.

The need to renovate aging facilities led to the adoption of a fifteen-year residential capital renewal plan which included renovations to the East and Pollock residence halls at University Park. Over the past eight years, three new residence halls have been constructed. Re-opening this fall will be Sproul and Geary halls, completing the renovations to 79% of the bed spaces in East Halls.

EXPENSES

Payroll and Related
The financial plan for 2020/21 provides for an increase of 2.50 percent for salaries at the recommendation of the University Budget Office. The fringe benefit rate is budgeted to increase by 4.33 percent.

Food Costs
Food costs for 2020/21 are estimated to increase 2.00 percent based on review of our key purchases and the outlook for those price changes. Cost containment initiatives have been undertaken, including inventory turnover and the reduction of food waste. Purchasing power is leveraged by combining food procurement with other Auxiliary and Business Services' units including The Nittany Lion Inn, The Penn Stater and the Bryce Jordan Center.

Utilities and Other Operating Expenses
The utility budget is estimated to increase by approximately one percent. As renovated buildings come online in East Halls, utility consumption will be monitored to determine benefit from energy saving construction.

Residence Life
The fee for services provided by the Office of Residence Life will increase by $14, or 3.95 percent, to $368 per student per semester to cover increases in operating costs, anticipated salary increases, and room and board changes for resident assistants at all campuses.

OVERHEAD EXPENSES

University Administrative Fee
Housing and Food Services pays for central administrative services as a percentage of gross revenue, exclusive of the capital assessment. This rate is expected to remain at 5.0 percent for 2020/21.

Deferred Maintenance and Facility Renewal

The budget provides $27,288,000 for facility renewal, deferred maintenance, and emergency reserves. Annual maintenance includes items such as roof replacement, plumbing repair, elevator maintenance, furniture, painting, equipment, and technology and security upgrades.

Capital Assessment

Housing and Food Services will enter the eighth year of the residential capital renewal plan. The Board of Trustees approved the multi-year capital assessment which is applied to all room rates for a ten-year period. For 2020/21, the assessment will remain at 2.0 percent, and will generate an additional $2,754,000 to support the capital plan.

Debt Service

Sproul and Geary residence halls will re-open for Fall 2020, increasing annual debt service by $3,842,000 to $51,260,000.

INCOME

The proposed rate increases will generate $4,769,000 to maintain progress with our capital plan, support the University's initiatives on affordability, and maintain operations. The room and board rate for a student living in a standard double room, and choosing the mid-level meal plan, will increase in 2020/21 by 3.52 percent over the prior year.

Expense Increases for 2020/21

Proposed Budget Increase
HFS Annual Room and Board Rate Planning

	2019/20 Approved Budget	2020/21 Proposed Budget	2020/21 Increase	2020/21 % Change
Revenue	$252,786,000	$257,555,000	$4,769,000	1.89%
Food	28,483,000	29,050,000	567,000	1.99%
Payroll and Related	58,969,000	61,198,000	2,229,000	3.78%
Utilities	17,991,000	18,135,000	144,000	0.80%
Maintenance, Supplies, Services	26,236,000	26,573,000	337,000	1.28%
Residence Life Programming	13,562,000	13,997,000	435,000	3.21%
Subtotal	$145,241,000	$148,953,000	$3,712,000	2.56%
Operating Margin	$107,545,000	$108,602,000	$1,057,000	
University Administrative Fee	12,300,000	12,000,000	(300,000)	-2.44%
Deferred Maintenance & Capital	47,827,000	45,342,000	(2,485,000)	-5.20%
Debt Service	47,418,000	51,260,000	3,842,000	8.10%
Subtotal	$107,545,000	$108,602,000	$1,057,000	0.98%
Net Margin	$0	$0	$0	

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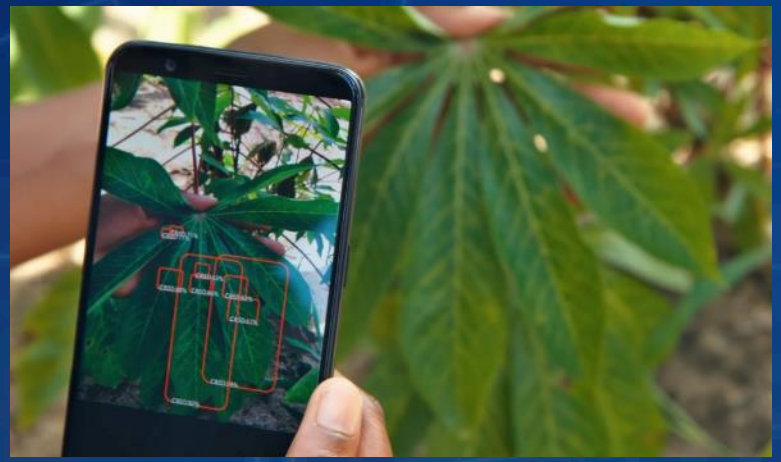
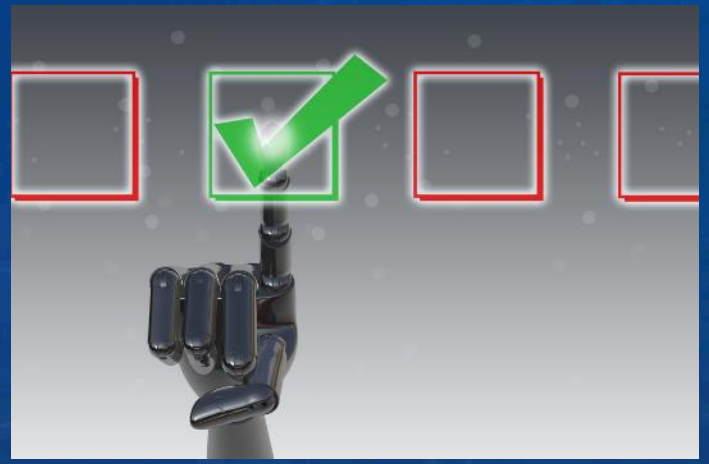
Penn State Directions: Technology and the Future of Higher Education





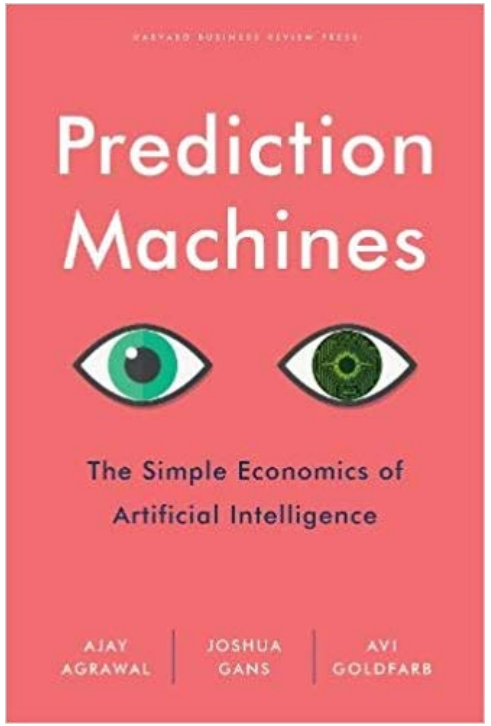
A Discussion with the Board of Trustees

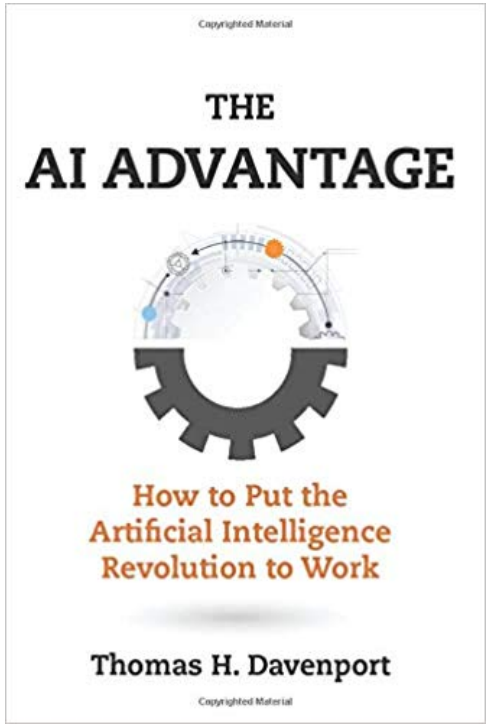
February 21, 2020

PennState

The Promise:

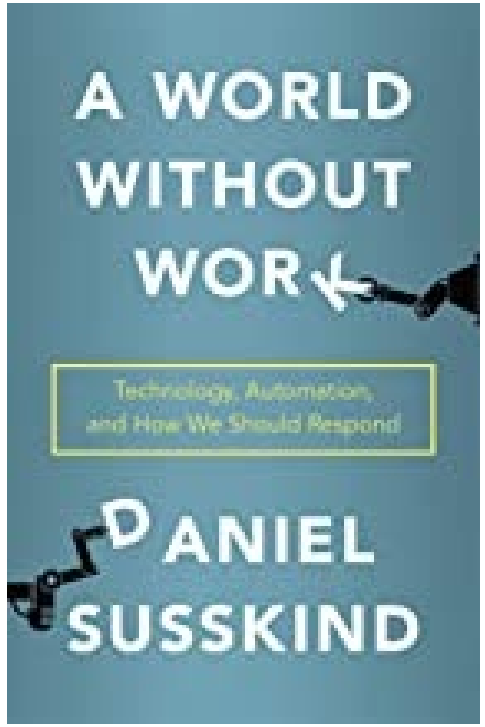
More Efficiency and Efficacy

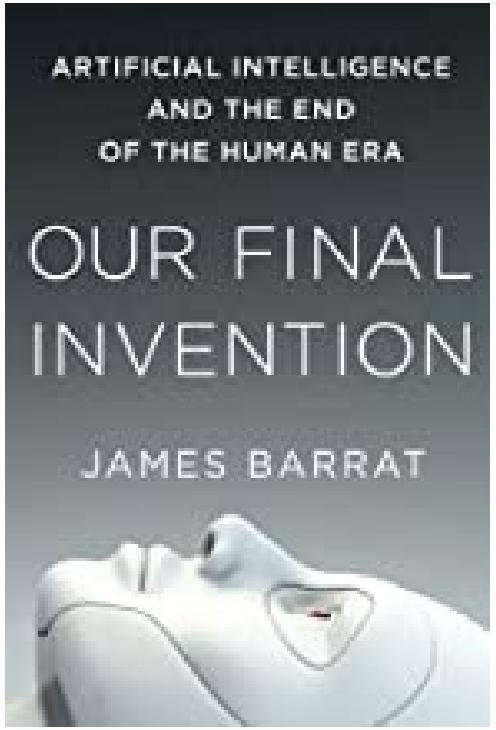




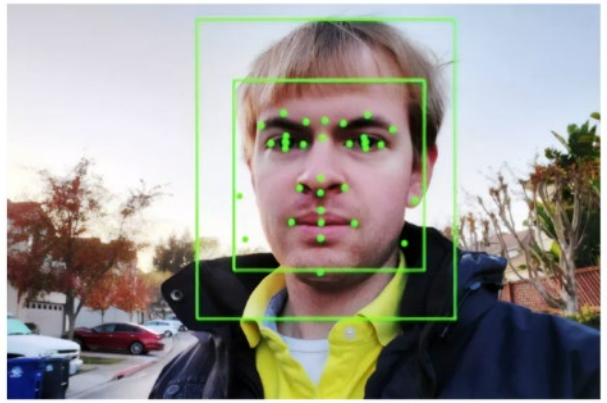
The Peril:

Ethical Breaches and No Work





Artificial Intelligence in the World

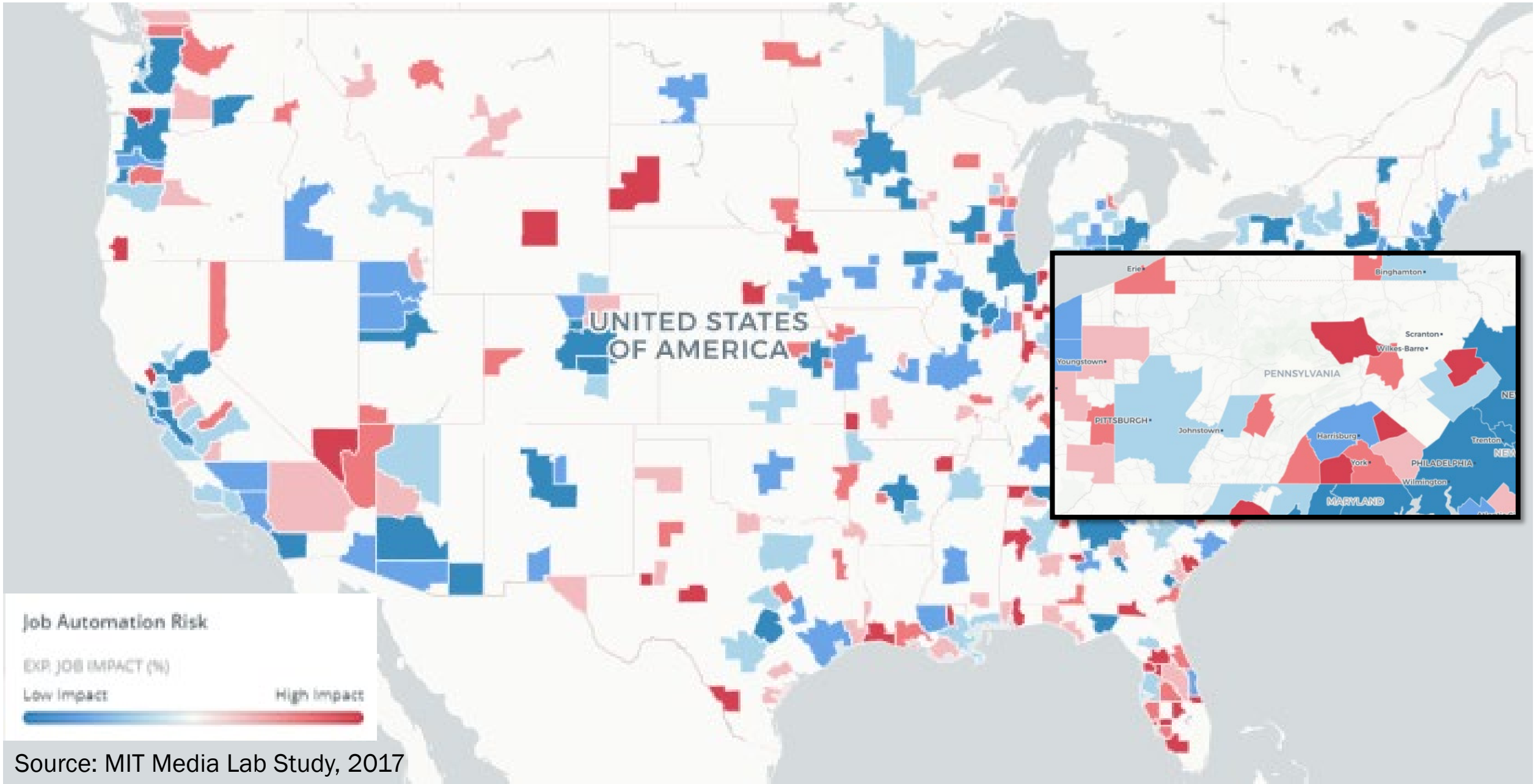


Output of an Artificial Intelligence system from Google Vision, performing facial recognition on a photograph of a man in San Ramon, California on November 22, 2019. | Smith Collection/Gado/Getty Images

Output from an AI system from Google Vision, performing facial recognition.

Creepy AI-Created Portrait Fetches $432,500 at Auction at Christie's.

Expected job impact from automation



Source: MIT Media Lab Study, 2017

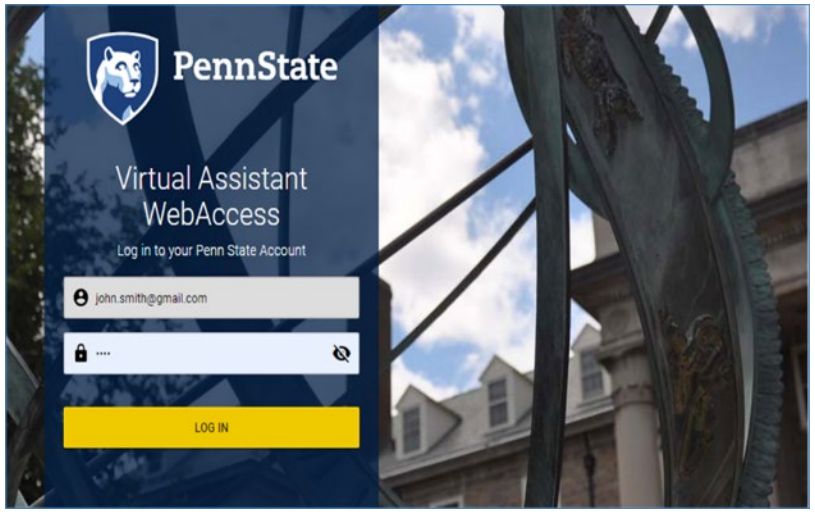
Education Tech Trends: Opportunities

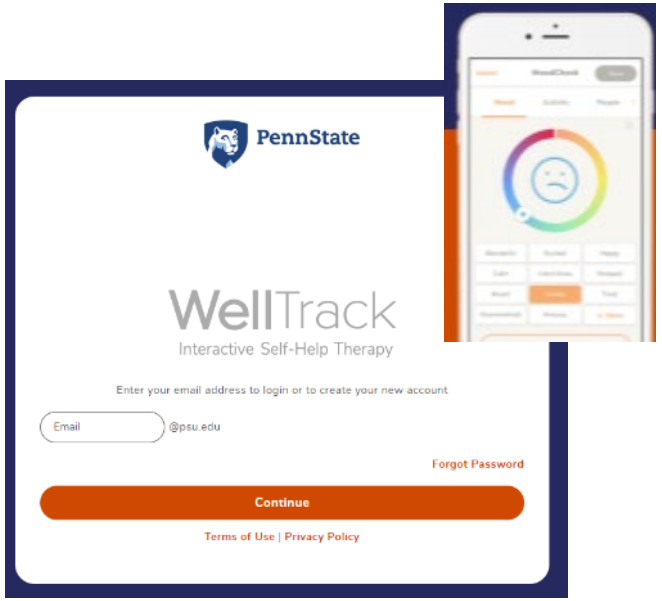
- Realize full potential of One Penn State 2025.
- Provide a personalized and seamless education;
  - AI can complete routine tasks to free up faculty and advisers to work more closely with students.
  - AI can adapt to behavior to better respond to student needs.
- Create unique learning experiences anywhere, anytime through Virtual and Augmented Reality;
- Give students a home base for their education <u>and</u> access to a larger higher education marketplace;
- Offer students a competitive advantage upon graduation.

The Future of Technology at Penn State

- Student Support Projects include:
  - Advising, early warning, counseling and psychological services, engagement, and career services.
- Instructional Projects include:
  - Technology classrooms, immersive experience labs, AI-enhanced course materials, and research.
- Institutional Projects include:
  - Admissions, development, strategic communications, and HR.

Student Support Projects





Advising Goal: Improve response times and one-on-one advising by reducing time spent on routine tasks

- Advising Capacity Scaling with Artificial Intelligence pilot for World Campus.
- Uses AI to automate manual processes; allows advisers to spend more individualized time with students.
- Standardized tasks take 6,000+ hours annually, and that number is growing as enrollment increases.
- 86% accuracy in testing phase; system will be tracked for one year.

Early Intervention Goal: Enhance advising by predicting student performance based on past students' performance

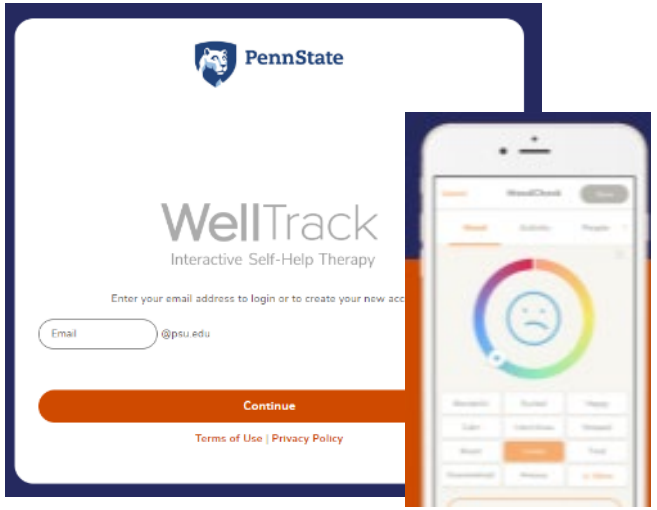
- Project LIFT leverages historical student data, and applies it to current, similar students to help advisers identify potential areas of concern.
  - AI flags at-risk students so the adviser can investigate further and follow up with personal contact.
- LIFT was tested last fall with 12 advisers from DUS, EMS, Science, and Lehigh Valley with 650+ student schedules.

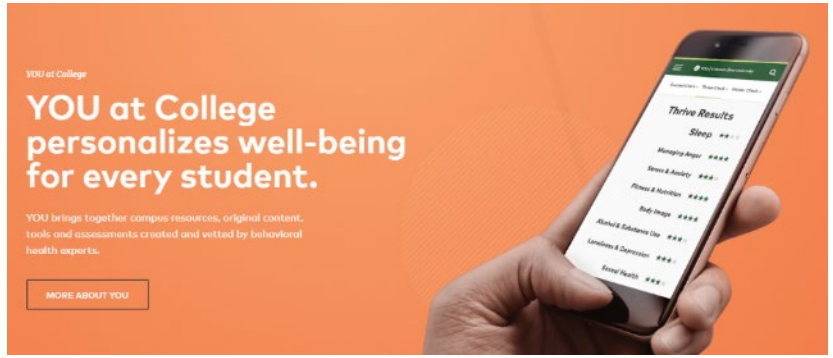
Counseling and Psychological Services Goal: Serve more students with existing resources

Challenge: CAPS is operating at maximum capacity, and the highly-customized and high-risk nature of mental health treatment limits the benefits of tech solutions.

CAPS is testing these tech options:

- WellTrack, a self-guided app that offers self treatment tools and coping strategies.
- CCAPS Screen (self-assessment)
- Penn State Crisis Line, Crisis Text Line
- ThrivingCampus (off-campus referrals)
- YOU at College Wellness Portal (coming this summer)



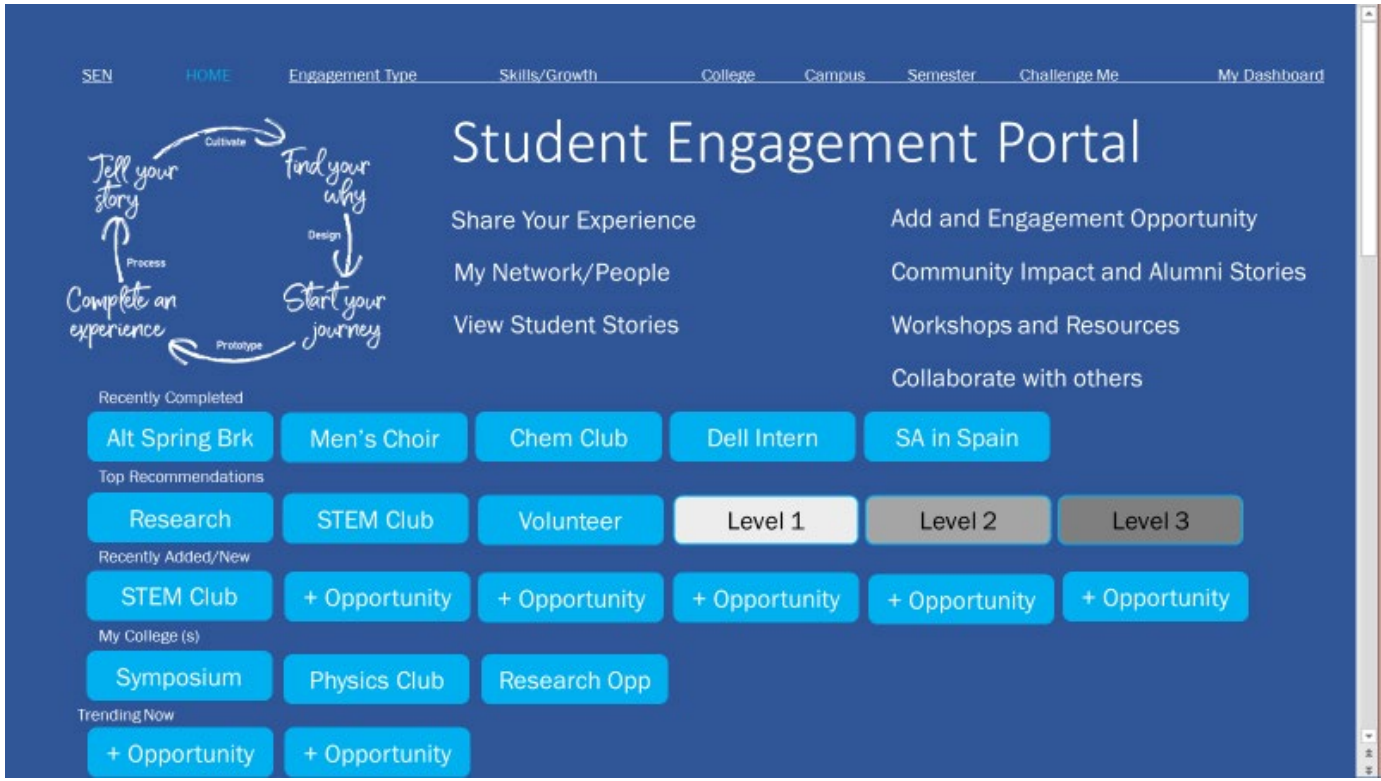


CAPS Future Possibilities: Tele-Services

- Tele-psychiatry: Commonwealth Campus Student Fee Board is considering increasing fees to fund this service (undecided).
- Tele-counseling: CAPS is exploring a pilot for University Park to evaluate the value of this service.
  - Some vendors make use of AI to "supervise" and "flag" interactions.
- Future funding for a university-wide contract has potential to offer same-day support to every student with oversight by CAPS.

Engagement Goal: Help students find opportunities related to their interests and activities

- Challenge: Students are overwhelmed with choices: 1,200 clubs, countless international experiences and engagement opportunities.
- Student Engagement Portal will use AI to refine options and make suggestions based on past activities (like Netflix).



Career Services Goal: Improve students' resumes to pass AI screening processes

- As recruiters increasingly use AI for screening resumes/candidates, Career Services is leveraging AI to pinpoint the top resume criteria for selecting students for interviews.
- Educating students on the resume criteria that employers value most offers a competitive advantage.

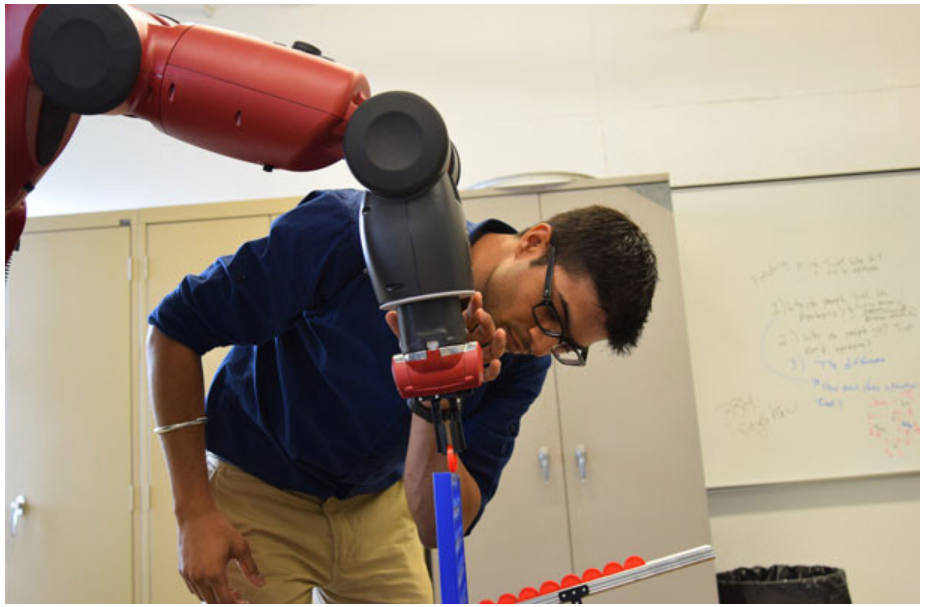
Penn State Berks Resilient Resumes team built a web app to help students create better resumes.

Ethical Considerations: A critical part of all projects

- New Penn State Center for Socially-Responsible Artificial Intelligence.
  - Promote the thoughtful development and application of AI and study its impact on all areas of human endeavor.
  - Support research focused on AI for social good and mitigate against threats from the misuse of AI.
  - Encourage that all AI R&D activities consider social and ethical implications as well as intended and possible unintended consequences.
- Through co-hires with the Rock Institute, IST has hired two faculty focused on ethical issues in data science and AI.

Instructional Projects

Teaching and Learning with Technology (TLT) Collaborations



TLT Goal: Discover and explore innovative ideas that advance student learning

- 1,484 faculty engagements every year.
- $6,278,382 in faculty research support over the past 4 years.
- Initiatives include learning spaces, professional development, teaching and learning research, competitions, and innovation.
- Represents Penn State in the Unizin Consortium, which provides solutions for critical issues facing higher ed.

Annual Open Innovation Challenge (March 21, 2020)

- Faculty compete to win support for their transformative ideas involving education and technology.
- Finalists are chosen from the pool of proposals and given 5 minutes to present their ideas to an audience of 500+.
- Audience votes online for the winner.

Open Innovation Challenge Examples

- **2019 Winner Rodney Trice**, professor, graphic design. His “Walk a Mile…” project is an immersive virtual reality experience designed to build empathy.
- **Penn State Beaver IST instructor Ashu Kumar** created a voice-enabled classroom assistant that takes attendance and keeps track of participation points.
- **Penn State Mont Alto assoc. prof. Angela Hissong** presented NittanyPause. Building & Sustaining Mindful Teaching-Learning Experiences.

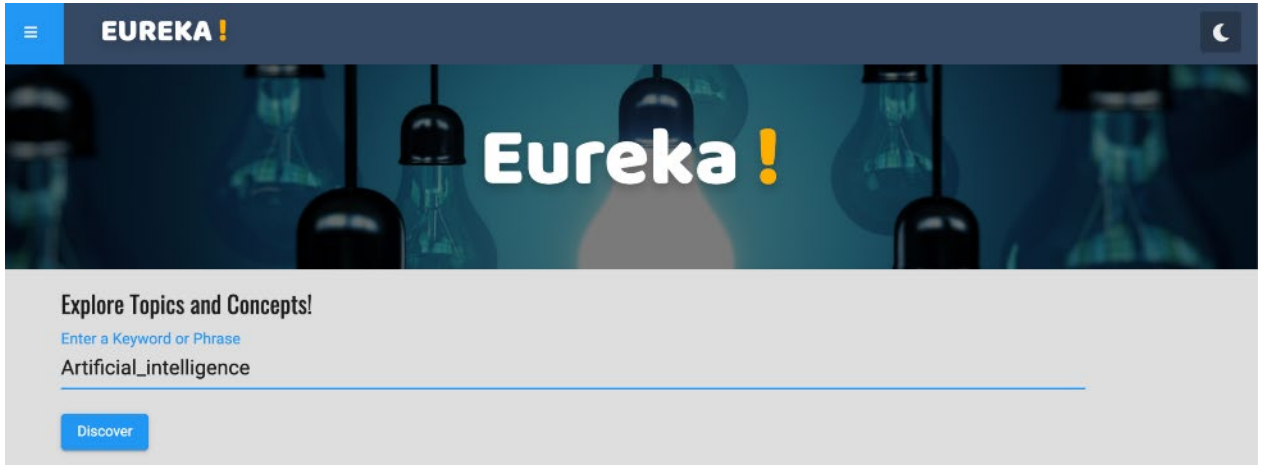
Immersive Experiences Labs

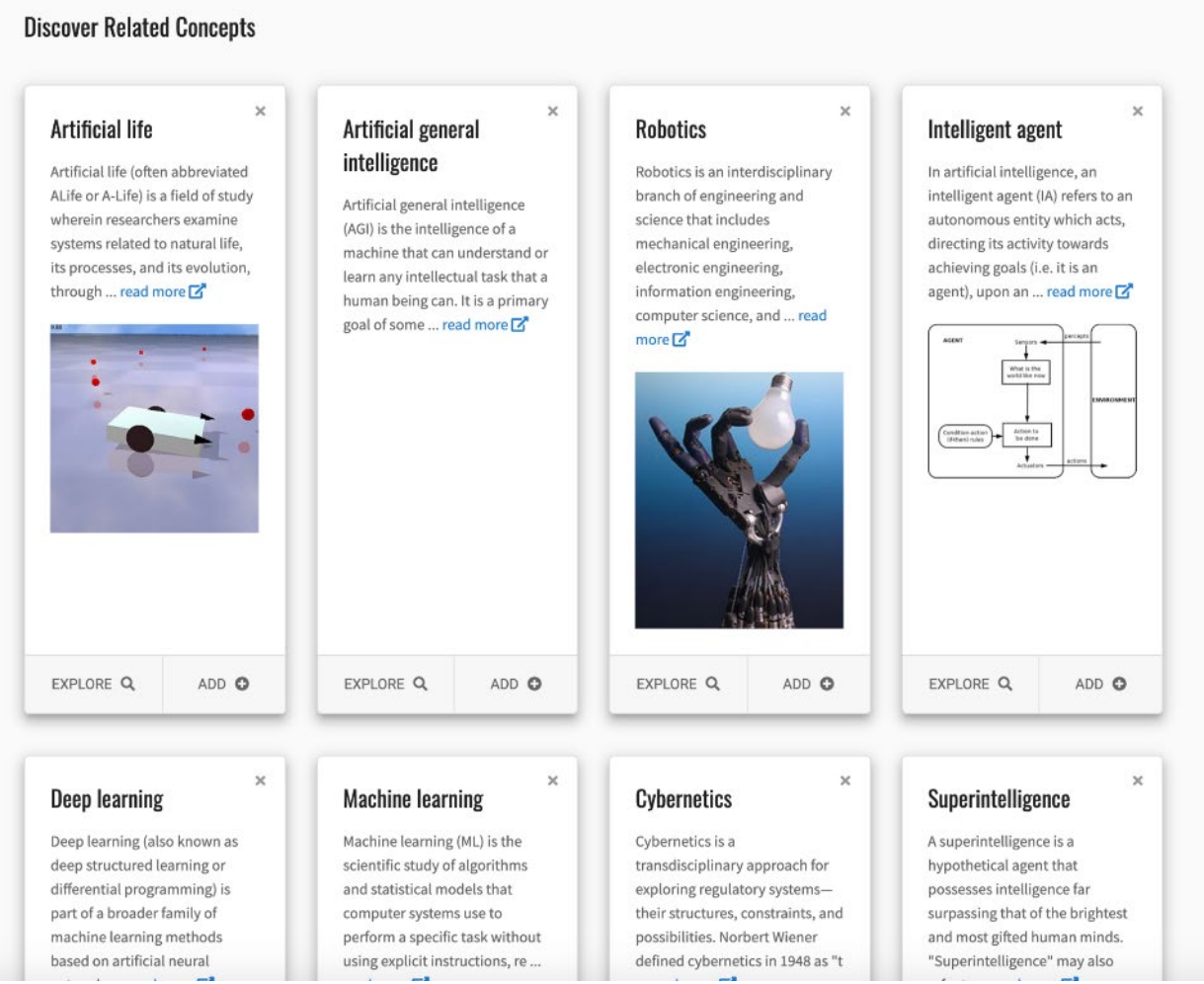
- Labs across colleges and campuses where students, faculty and staff can explore virtual reality and immersive technologies.
- Encourages cross-disciplinary collaboration, research, and student engagement.

Artificial Intelligence: Making Free Textbooks

- Developed by IST Professor Lee Giles, this uses open source material to create textbooks and specialized materials.
- Relevant resources can be combined, remixed, and re-used to support specific learning goals.
- Has saved over $200K in IST and hotel and restaurant management courses.
- Joins the University's open, affordable textbook effort that has saved students $4.8M in potential expenses on textbooks over 3 years.

Eureka: Improving Course Content

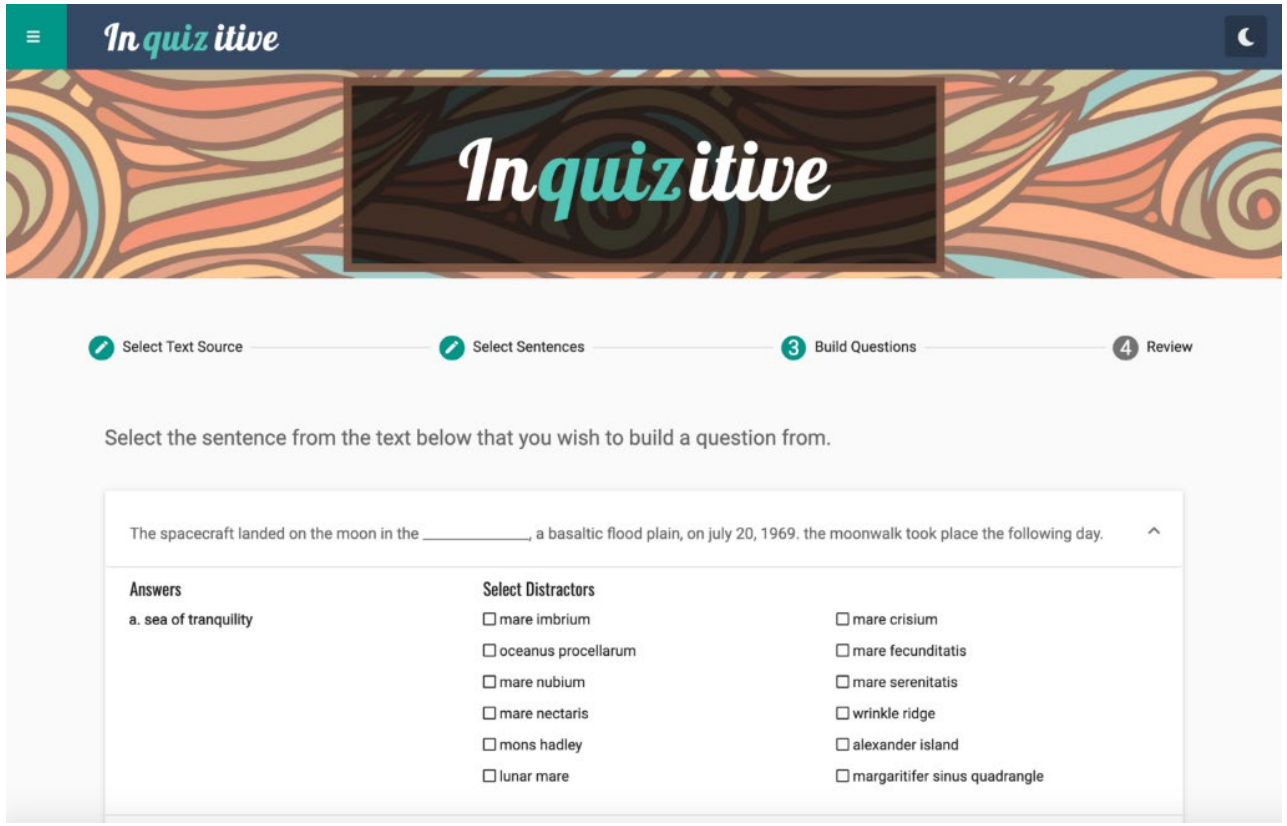




- Recommendation engine to help faculty discover new information relevant to their coursework.

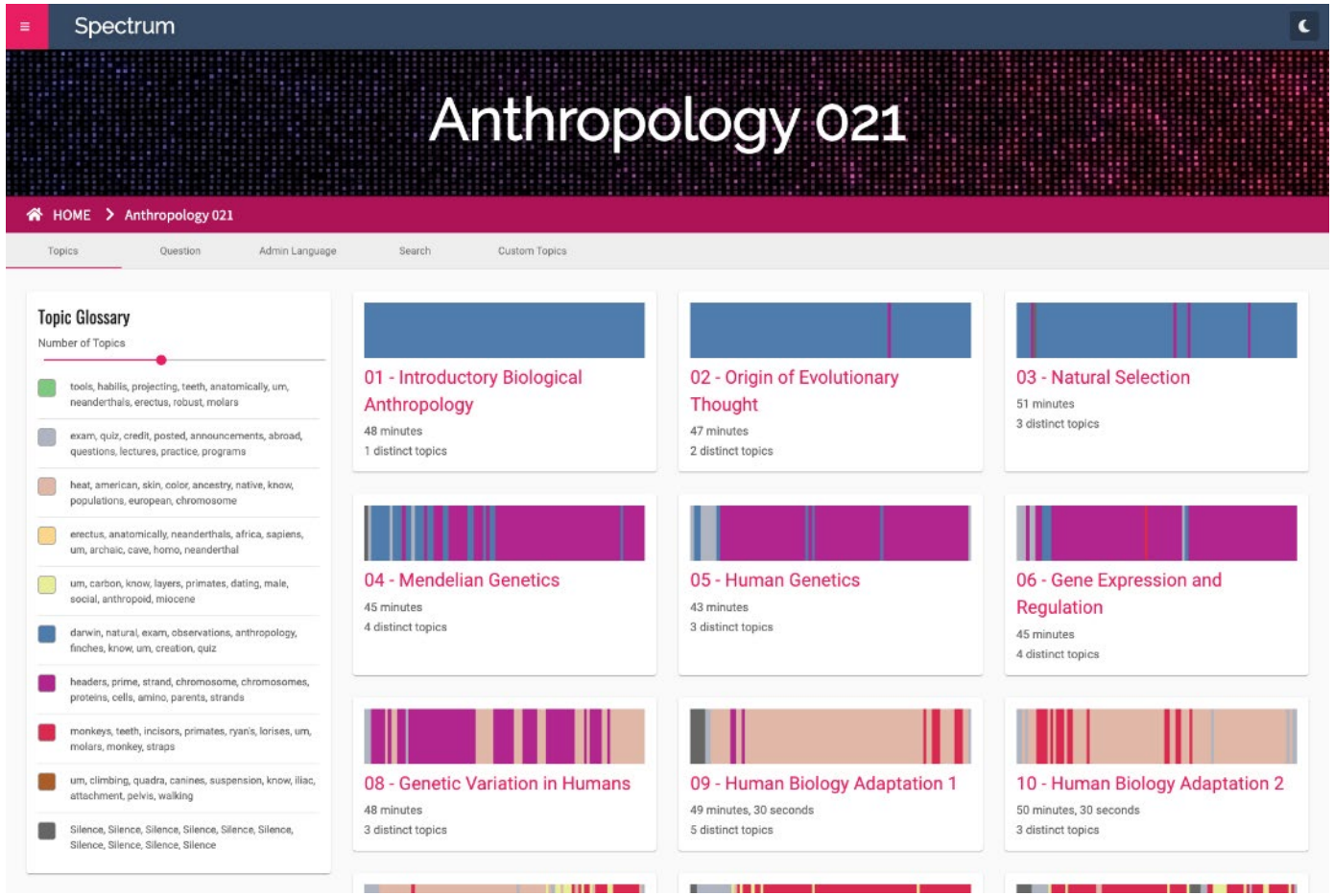
Inquizitive: Building Test Question Banks

- Developed by Computer Science Professor Rebecca Passonneau, this helps faculty come up with plausible distractors (wrong answers).
- Allows faculty to efficiently develop large question banks.



Spectrum: Improving Course Evaluations

- Provides an overview of teaching and learning over the course of a semester.
- Enables teachers to understand their areas of strength and weakness class by class.



Invent Penn State

- Gov. Tom Wolf has announced a proposal to provide $2.35M in funding for Invent Penn State as part of a $12.35M spending initiative focused on technology and innovation programs.
- Invent Penn State is accelerating the transfer of new ideas into useful products and building new businesses in PA.

Student companies at the Startup Showcase.

Annual Nittany AI Challenge

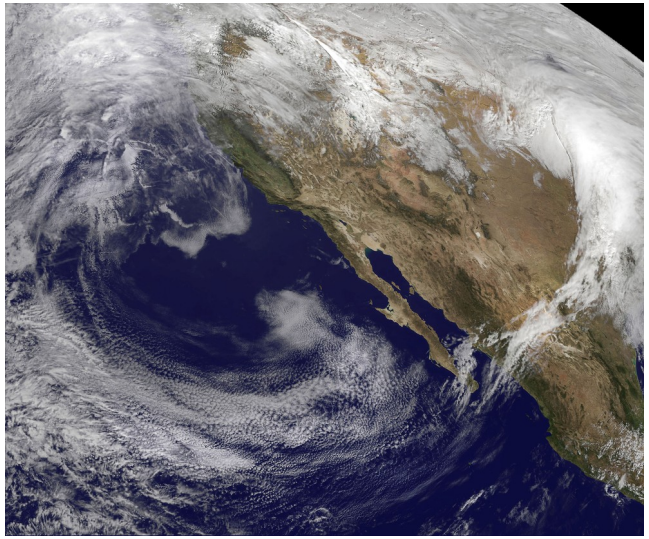
- Teams develop AI-based solutions to improve the world.
- Three phase process with a $50K prize pool.
- Interest areas for 2020 AI Challenge include:
  - AI in Education
  - AI in Health
  - AI for Humanitarianism
  - AI for Sustainability and Climate Change

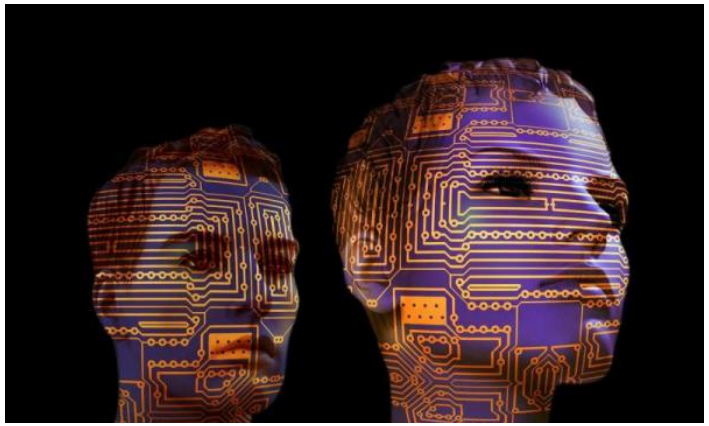
AI in Healthcare Symposium held last fall in Hershey

- Focused on clinical applications, challenges and opportunities of AI in healthcare at the College of Medicine and Penn State Health.
- Promoted collaboration between campuses in areas of machine learning, AI, and the study of biological structure.

Teaching and Research

- Collaborations, seminars, and other advances are transforming research possibilities.
- IST research includes: AI for Suicide Prevention among College Students; AI Based Intelligent Tutoring Systems for Children with Autism; Using AI to Detect Discrimination; and Using AI to Detect Severe Weather.
- IST is hiring multiple new faculty in AI to build on the College's existing strengths in AI, data sciences, biomedical informatics, and other interdisciplinary research areas.





Institutional Projects

Nittany Ai Alliance projects all engage current students in the process.

Nittany Ai Associates

Admissions Goal: Streamline submission of 85,000 high school transcripts received annually

- The challenge: there's no standardized high school transcript format, so high school students manually type in transcript info.
- Nittany Ai Alliance student team is working on an AI-Driven Transcript and Processing tool.
- AI will parse the data and present it back to the student for validation and submission.

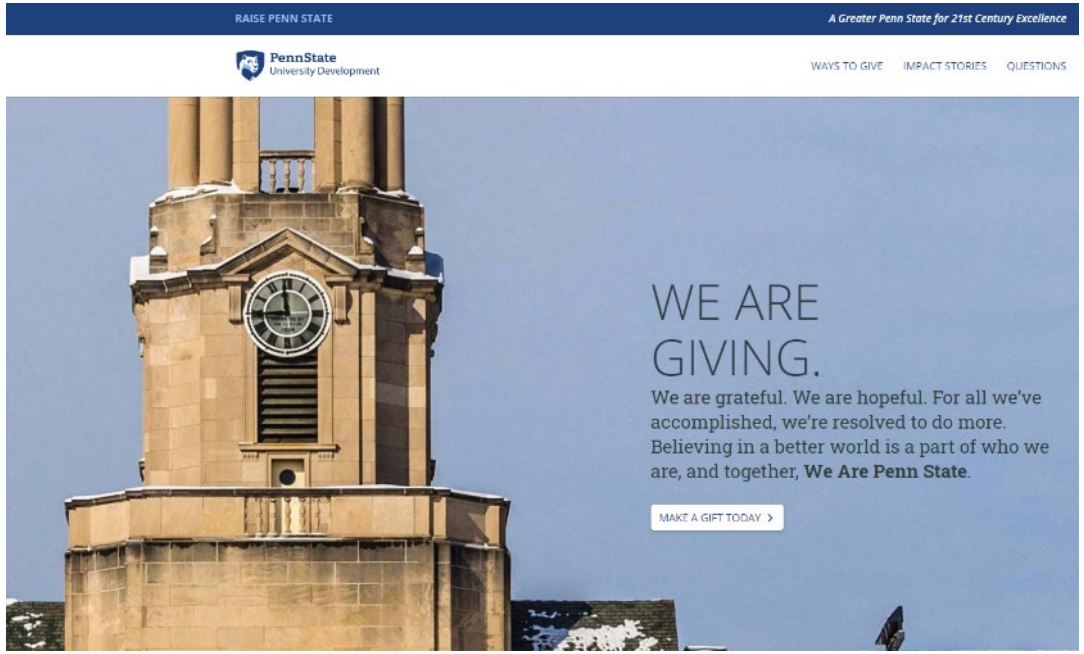
Transfer Admissions Goal: Enable prospective transfer students to easily calculate transferable credits

- Building on the 2018 AI Challenge winner Lion Planner, the team is working on a smart recognition tool to allow students to scan/key in their courses to get an instant preliminary estimate of their transferable credits.
- Before they apply, they'll have an accurate estimate of their progress toward a Penn State degree.

2018 Lion AI Challenge winner: The LionPlanner team

Development Goal: Generate more online giving

- Intelligent Matching Tool can tap into donors' passions and interests and make the online environment more engaging and fun.
- New process will narrow options based on donors' search history.
- The more donors who participate, the stronger the alignment between interests and designations.



Development Goal: More accurately identify prospects

- Leverage readily available big data to inform predictive analytics strategy.
- Sophisticated modeling tools will use data-driven insights, variables and their synergies to better understand which donors are inclined to engage with Penn State.

A GREATER PENN STATE FOR 21ST CENTURY EXCELLENCE

Recruitment Advertising Goal: Optimize the effectiveness of enrollment ads

- AI determines which creative assets perform best for different audiences.
- Takes basic components (image, video, title, description) and creates a series of variations; then tests options to determine the best combinations.
- The result: more relevant, higher performing ads in Google paid search and social media.

Human Resources Goal: Talent Acquisition

Penn State is in the early stages of investigating:

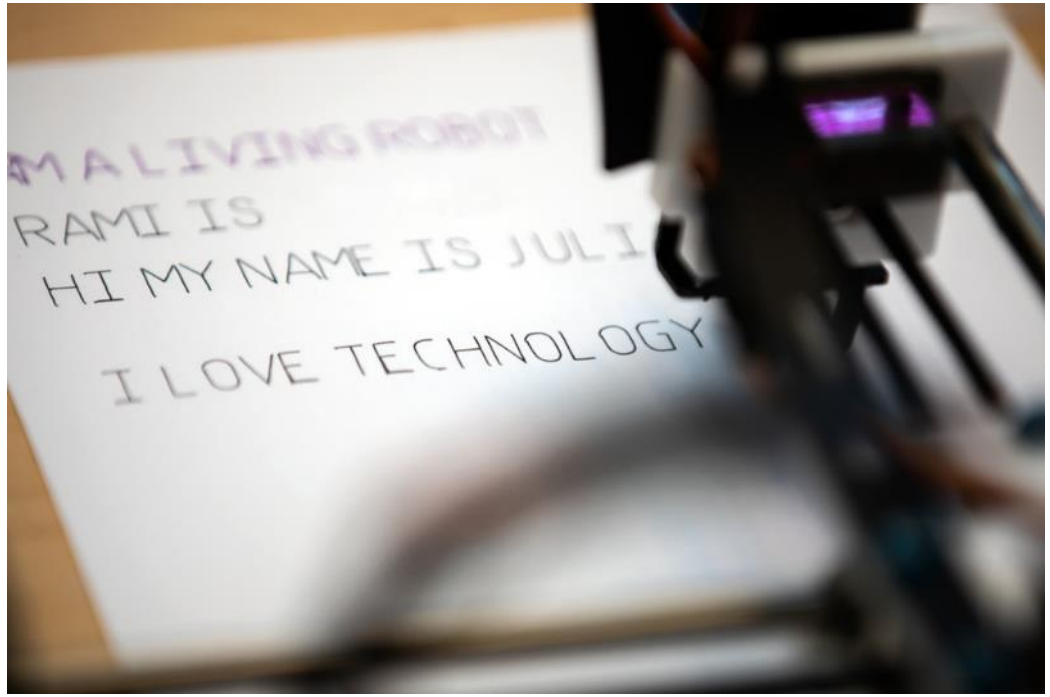
- Automated Candidate Sourcing
  - Analyzes talent profiles from professional social channels simultaneously.
  - Automates and personalizes candidate engagement (text, emails, chat bots).
- Automated candidate pool screening
  - Analyzes candidate data to screen/shortlist candidates.
  - Analyzes existing candidate database (Workday Recruiting) for strong past candidates.
- Video/Digital Interviews
  - Provides structured interviews and consistent decisions.
  - Flexibility allows candidates to interview anytime, on any device.

Blue Band Goal: Enhance recruitment

- Blue Band Director Greg Drane has created a thrilling virtual reality experience that allows people to go from the Blue Band Building to the stadium on game day.
- Project was student-planned and executed with a 360° camera mounted on a hat during the white-out game. Students used a 3-D printer to create the camera mount.

Summary:

- Penn State is using technology to transform institutional, student support and instructional areas at our institution and around the world.
- Potential impacts include retention, financial aid, pedagogy, workforce development, business processes, and delivery systems.
- Consideration of ethical implications a priority.
- Technology is a key area of investment with innovation dollars.



The "Draw Assist" device converts speech into text written by a machine through machine language code. It won the top overall prize at HackPSU 2019.