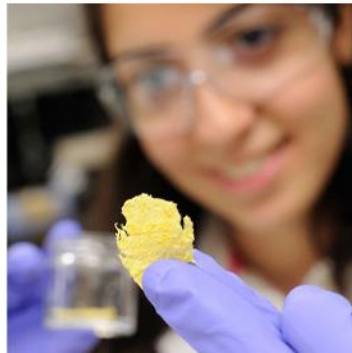


# Akron Master's Program in Polymer Science and Polymer Engineering



The University of Akron  
**College of Polymer Science  
and Polymer Engineering**

# Where is Akron?



The University of Akron – College of Polymer Science and Polymer Engineering

# The University of Akron



## The University of Akron

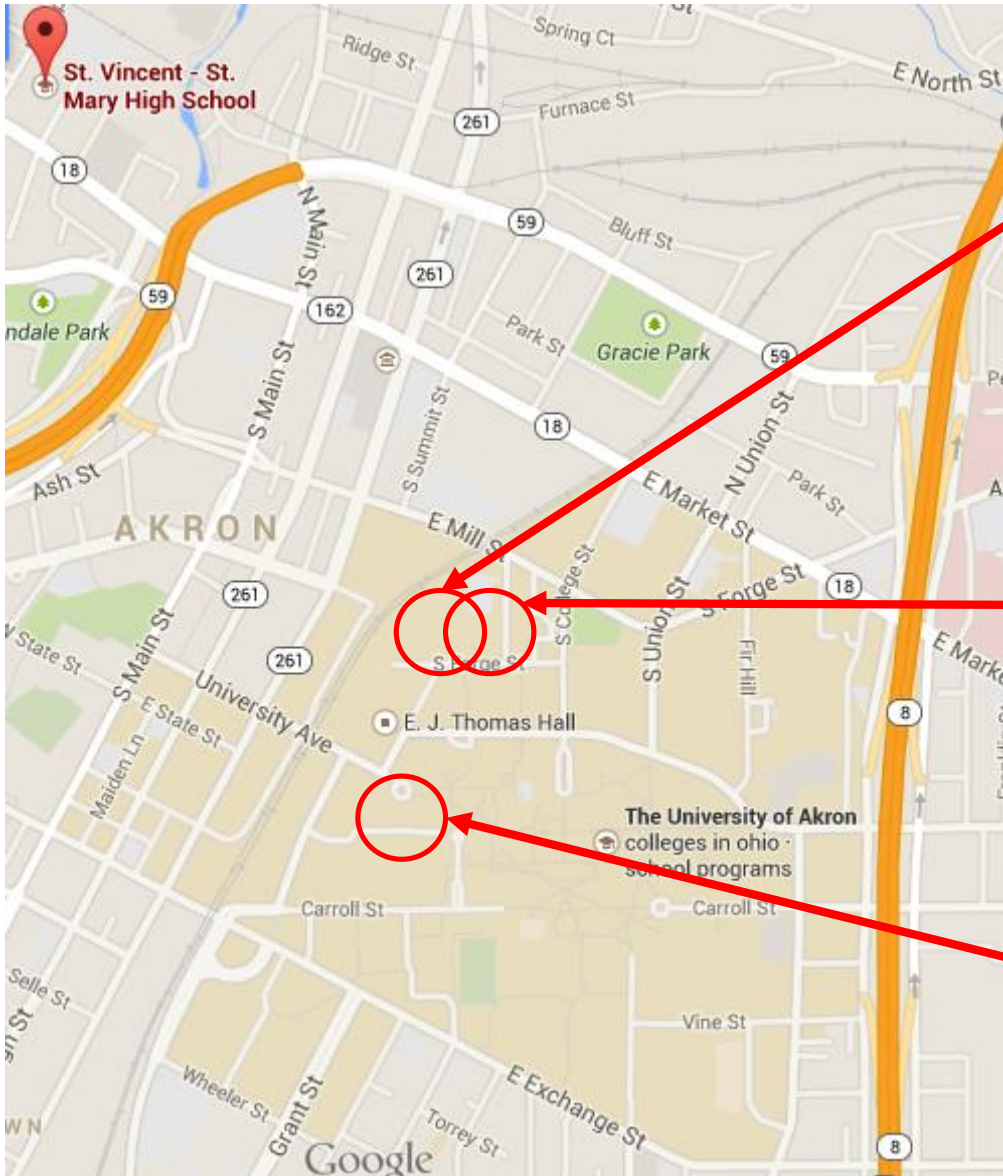
Founded 1870

19,500 undergraduate  
3,000 graduate

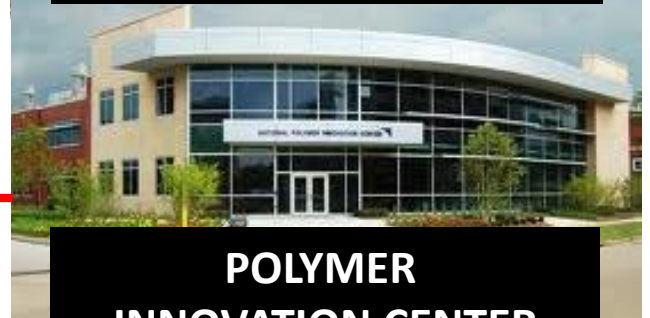
from 80+ countries

**Located in Akron, OH**  
population: 200,000





**POLYMER ENGINEERING**

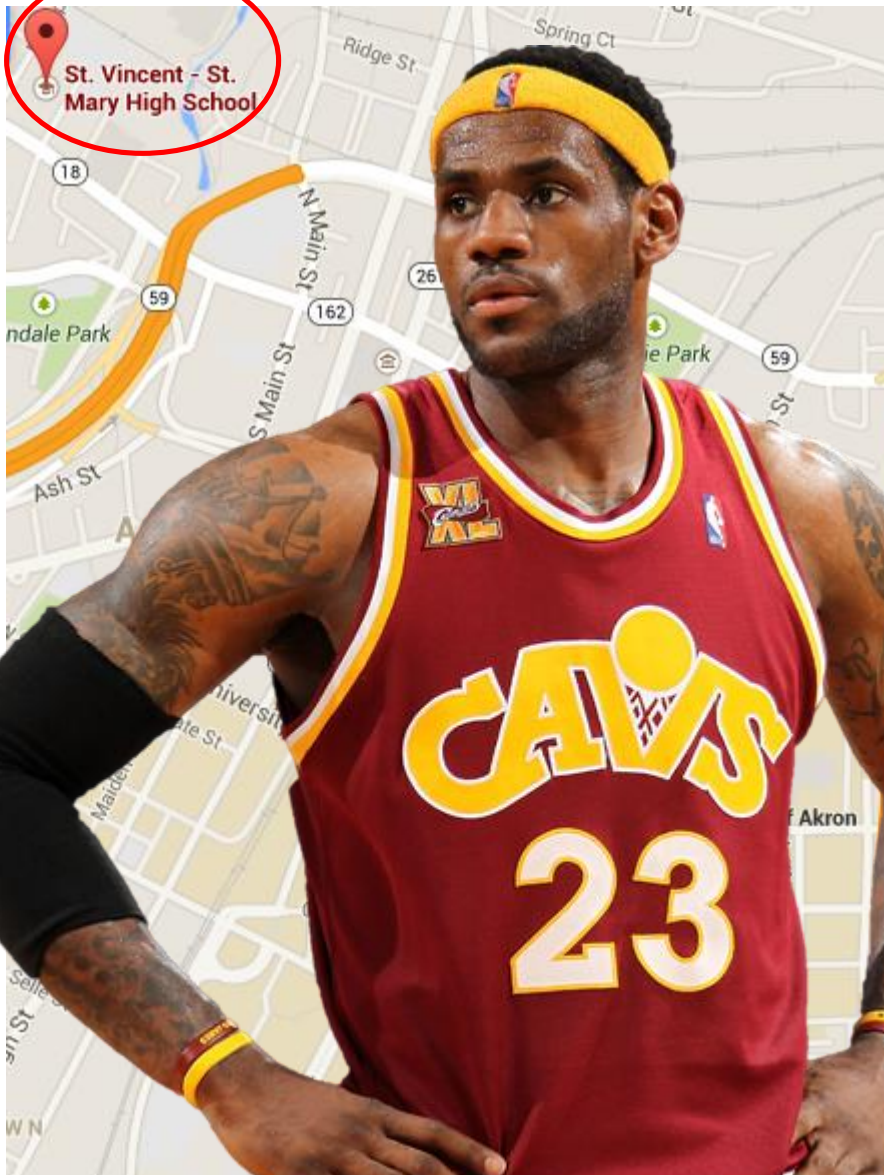


**POLYMER INNOVATION CENTER**



**POLYMER SCIENCE**

The University of Akron – College of Polymer Science and Polymer Engineering



**LeBron James** ✓  
@KingJames



Follow

Man I'm just a kid from Akron Ohio! Can't believe alot of the things that happens for me. My own... [instagram.com/p/lxGGTHiTPk/](https://www.instagram.com/p/lxGGTHiTPk/)

Reply Retweet Favorite More

RETWEETS 793 FAVORITES 1,664



7:04 AM - 20 Mar 2014

# Legacy of Discovery, Innovation, Talent

From the 1880's, students at the precursor to UA worked in the early rubber industry

**GOODYEAR**  
Founded 1898

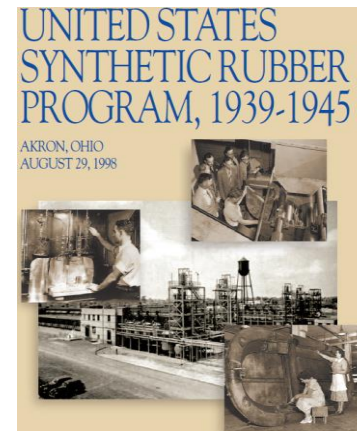
**BFGoodrich**  
Founded 1870

**Firestone**  
Founded 1900

**GENERAL TIRE** Founded 1915



Dr. Charles Knight:  
World's first semester-long  
class on polymers in 1910,  
"Chemistry of India Rubber"



Today strong, lightweight, impact resistant, functional, inexpensive, and reliable polymers represent a trillion dollar industry world-wide.  
UA research touches all areas of modern polymer science and engineering.



# Why Should You Choose UAkron?

- ◆ Polymer research and teaching center: Largest in the United States and the best in the world
- ◆ Accelerated path to a highly recognized polymer science or engineering program
- ◆ Strong Faculty across all fields of polymers and advanced materials, committed to the best education and research training of scientists and engineers in the 21<sup>st</sup> century
- ◆ Carrying out cutting-edge research and creating new fields internationally
- ◆ A gateway to worldwide highly recognized graduate programs



# COLLEGE OF POLYMER SCIENCE AND POLYMER ENGINEERING



**Established** 1988

Polymer Science Faculty 20

Polymer Engineering Faculty 11

**Graduate Students**

Polymer Science 234

Polymer Engineering 147

**Buildings**

Goodyear Polymer 1991

Polymer Engineering Center 2001

Olson Engineering Research 1979

Akron Polymer Training 1993

National Polymer Innovation 2010

## Statistics for Faculty Scholarly Work

35 Fellows of Professional Societies

5 Journal Editors

42 Members of Editorial Boards

211 Peer-Reviewed Papers in 2016

206 Invited Presentations in 2016

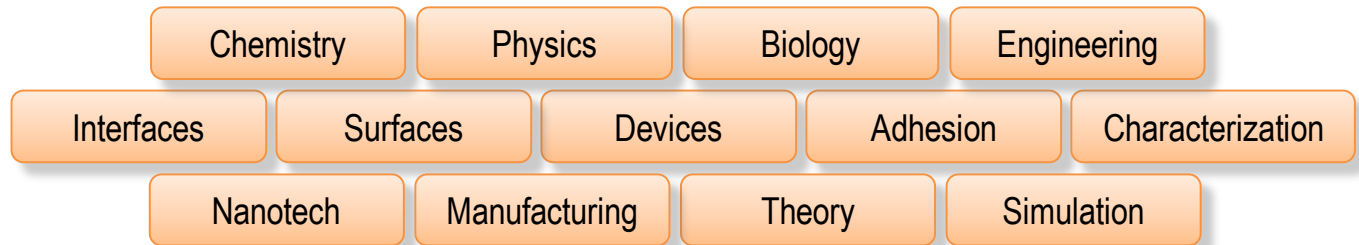


# Advanced Polymer Materials at UAkron

***World Needs***



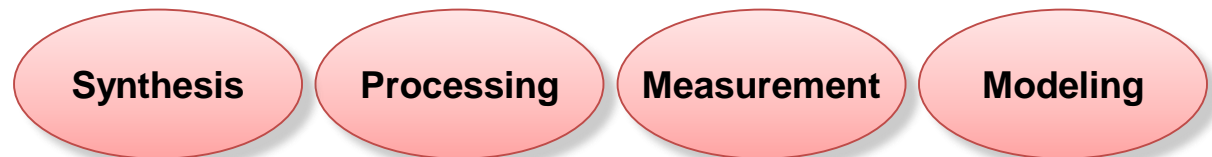
***Science and Technology***



***Collaborative Teams***

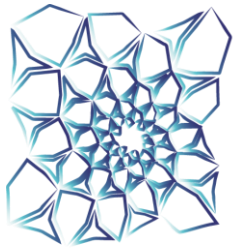


***Foundational Infrastructure***



# Bio-Inspired Structural Colors

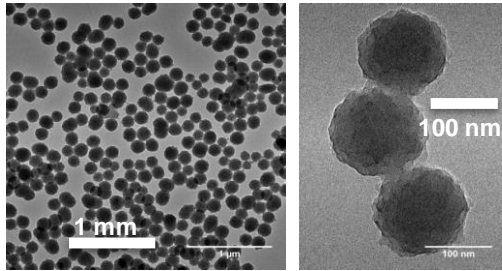
Department of Defense MURI (\$8.75M); Ali Dhinojwala, \$1.25M  
Unraveling the Biology, Chemistry and Nanoscience of  
Natural and Synthetic Melanins



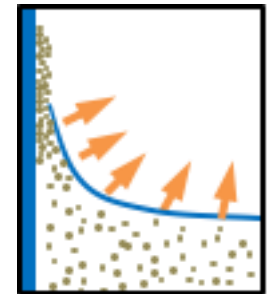
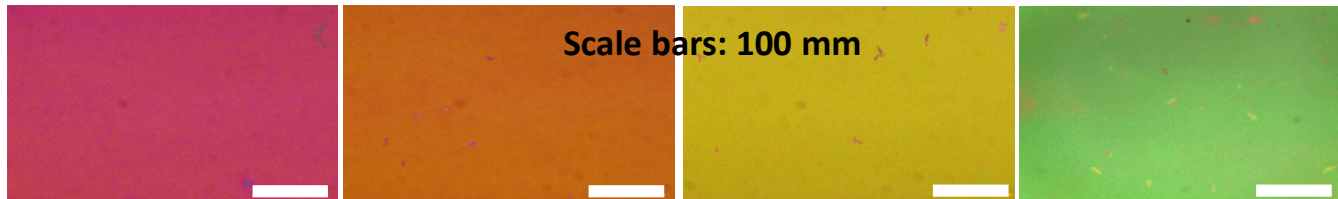
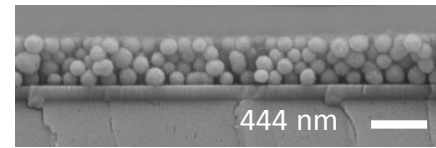
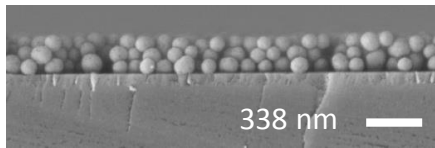
BIOMIMICRY  
RESEARCH  
INNOVATION  
CENTER



## Synthetic Melanin



Evaporation induced assembly: Spectrum of colors

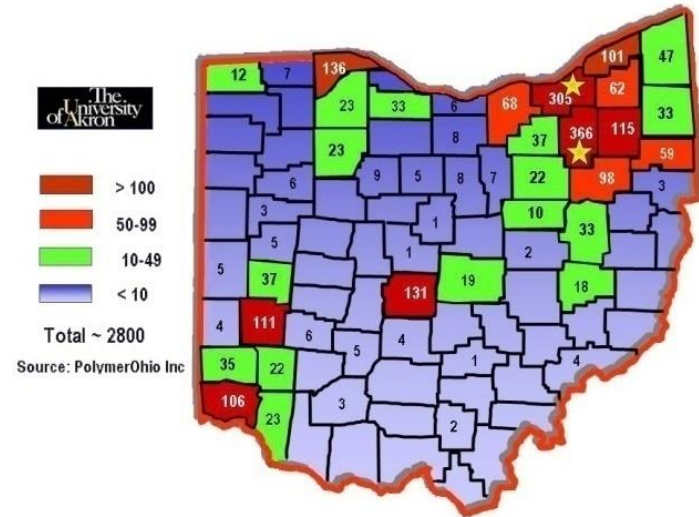


# Ohio's Largest Manufacturing Sector

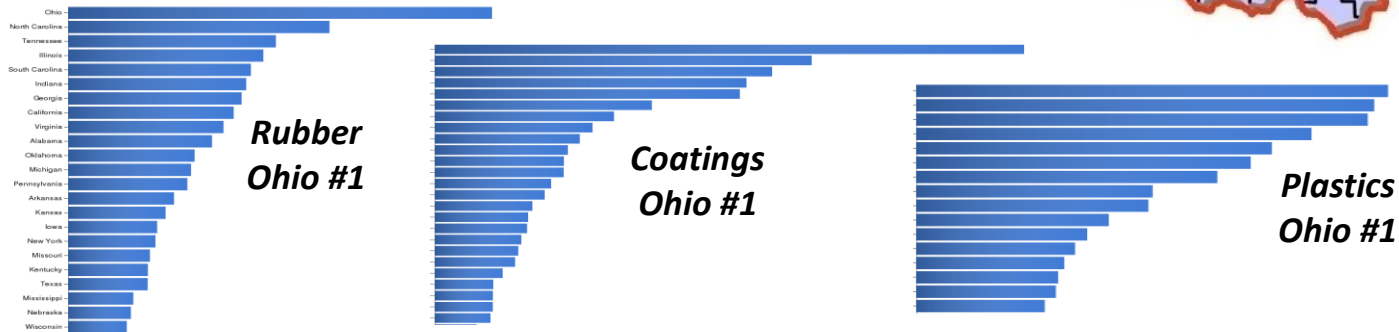
For Ohio the polymer industry has over 130.000 iobs

**Polymer Valley of Northeast Ohio has 2,400 polymer related companies**

**50% of North American plastics processing is within a 250 mile radius of Akron**



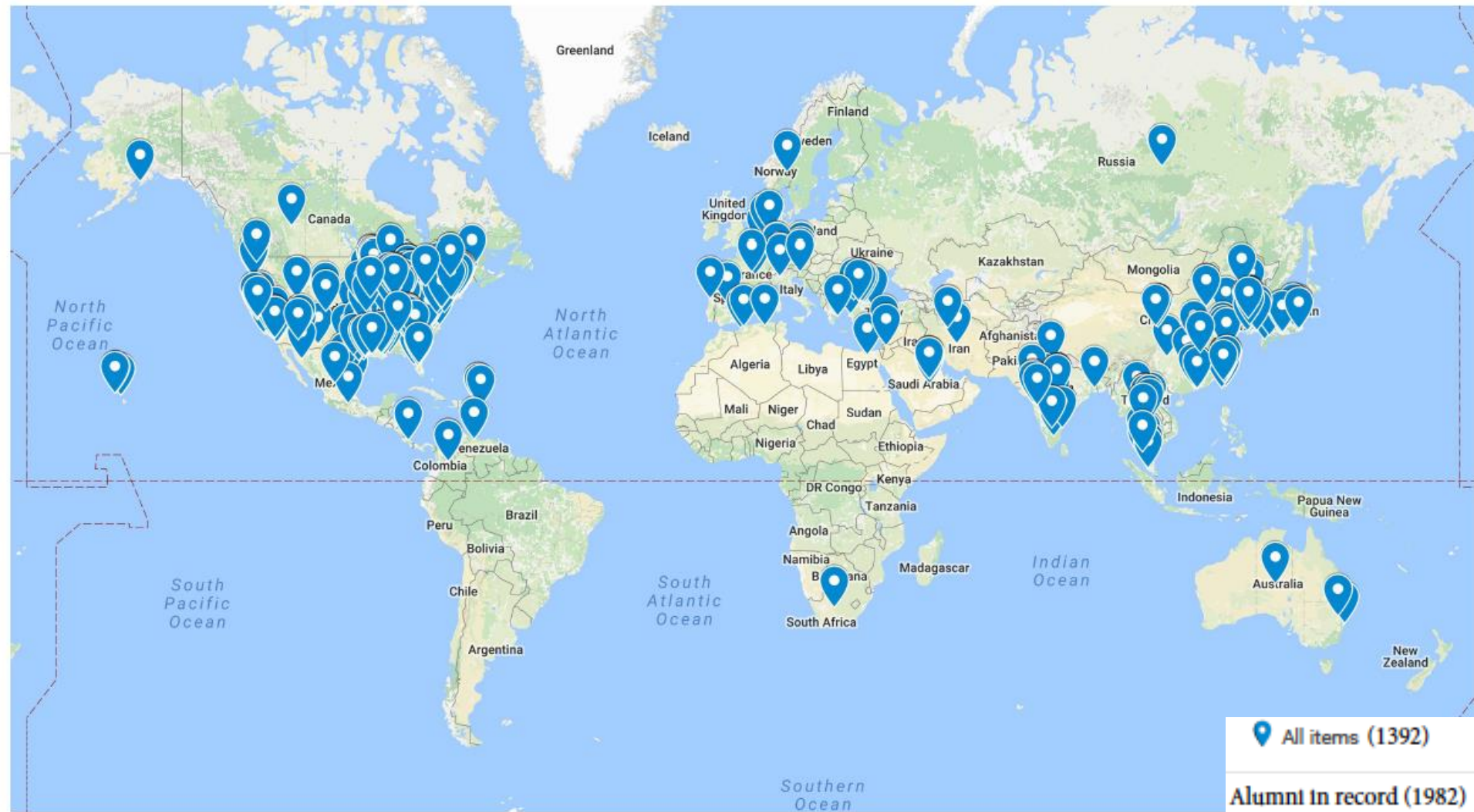
## Polymer Employment Ranked by State



## Ohio is consistently in the top five states in polymer industry market segments:

Coated and Laminated Paper Manufacturing, Inorganic Dye and Pigment Manufacturing, Synthetic Inorganic Dye and Pigment Manufacturing, Plastics Material and Resin Manufacturing, Synthetic Rubber Manufacturing, Adhesive Manufacturing, Printing Ink Manufacturing, Custom Compounding of Purchased Resins, Unlaminated Plastics Film and Sheet (except Packaging) Manufacturing, Unlaminated Plastics Profile Shape Manufacturing, Plastic Pipe and Pipe Fitting Manufacturing, Laminated Plastics Plate, Sheet (except Packaging) and Shape Manufacturing, Polystyrene Foam Product Manufacturing, Urethane and Other Foam Product (except Polystyrene) Manufacturing, Tire Manufacturing (except Retreading), Tire Retreading, Rubber and Plastics Hoses and Belting Manufacturing, Rubber Product Manufacturing for Mechanical Use, Plastics and Rubber Industry Machinery

# Beyond Ohio: National and International Reach



- Graduates contribute to the “Polymer Valley” of Northeast Ohio and to the polymer industry nationally
- Alumni are active internationally in Taiwan, Korea, China, and India

# What Is the Program?

## GENERAL STRUCTURE

- 3 Years Undergraduate Study at home institution
- 2 Years at UA in Polymer Science OR Polymer Engineering
- Complete BS and MS in 5 years
- Students pay all tuition and fees and living expenses

# Master Degree Requirements

## DEPARTMENT OF POLYMER ENGINEERING

### **30 Total Course Credits**

24 Lecture Credits

6 Research Credits

The M.S. degree is awarded for the successful completion of a prescribed program of courses and a thesis

#### Course Requirements for MS of PE

- 12 Credits of Core Courses:  
Fundamentals of Polymer Structure  
Characterization, Rheology of Polymeric Fluids,  
Polymer Chemistry and Thermodynamics,  
Introduction to Polymer Engineering
- 12 Credits of Electives
- 6 Credits of Master's Research

## DEPARTMENT OF POLYMER SCIENCE

### **30 Total Course Credits**

24 Lecture Credits

6 Research Credits

The M.S. degree is awarded for the successful completion of a prescribed program of courses, a formal seminar, passage of an cumulative exam, and a thesis

#### Course Requirements for MS of PS

- 16 Credits of Core Courses:  
Polymer Chemistry, Polymer Physics, Introduction  
to Biomacromolecules, Seminar in Polymer  
Science, Polymer Science Lab, Polymer  
Characterization
- 8 Credits of Electives
- 6 Credits of Master's Research

# Application Requirements

1a: Minimum 3.0 GPA, (75/100)

1b: Test of English as a Foreign Language (TOEFL)

550 (pbt), 79 (ibt) or 6.5 (IELTS)

Cannot enroll in Masters Program at UA without passing score.

Best to pass before June 15<sup>th</sup>.

2. Interview (15 minute with PE and PS faculty)

interested in general knowledge, research experience, English fluency

3. Submit an online application with fee to the University's Graduate School

<https://www.uakron.edu/gradsch/apply-online/mastersdegr.dot>

*\* Application guidelines in English and in Chinese will be sent to admitted students*

## UAKRON-CHINA ALLERATED MASTER PROGRAM APPLICATION GUIDANCE

1. Go to the following web address:

<http://www.uakron.edu/gradsch/apply-online/mastersdegr.dot>

Scroll down the webpage and find the "Apply Online". Then click the link "Apply Online".

## Akron大学硕士直通项目申请指南

1) 进入网址: <http://www.uakron.edu/gradsch/apply-online/mastersdegr.dot> 进入网页后下拉, 点击 "Apply online"如下图所示。

### Admission validity

Students are admitted for the term for which they seek admission as indicated on the graduate application. Admission for graduate studies is valid for one year, thus students

# Application Process

## Minimum requirements:

GPA  $\geq$  2.8

Test of English as a Foreign Language (TOEFL):  $\geq$ 550 (pbt),  $\geq$ 79 (ibt)

## Flow chart:

Nov. 2017

Interviews  
at BUCT

Early Dec.  
2017

Skype  
Interview\*  
with UA PE  
and PS  
professors

Starting from Jan.  
2018

Invited applicants  
submit online  
application to the  
University's  
Graduate School  
with guidelines\*\*

w/ TOEFL  
By mid April 2018

Receive full  
admission letter

By mid June  
2018

Pass TOEFL and  
email score or  
arrange ETS to  
send the score  
to Graduate  
School

By mid July  
2018

Receive full  
admission  
letter and I-20

By mid Aug.  
2018

Receive F-  
1 visa

\* *interested in general knowledge, research experience, English fluency*

\*\* *Application guidelines in English and in Chinese will be sent to admitted students*



# Cost

## Tuition and fees (current fees as of 10/11/2017)

Tuition+ fees (technology, library)/credit hour: \$735.38 + \$55.25

Fees/semester (administrative, parking): \$205

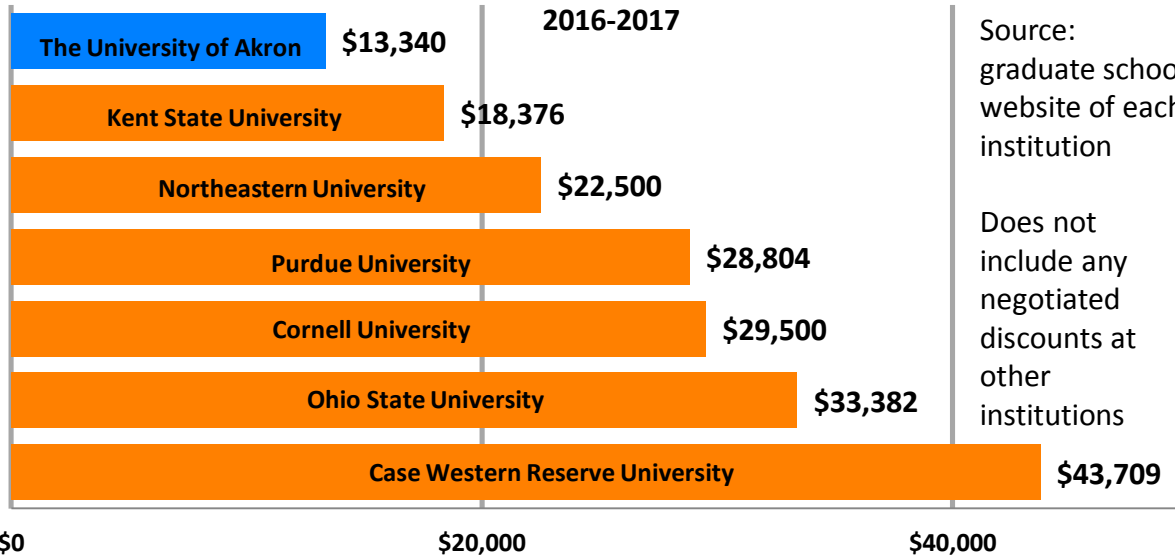
Semester	Registered credit hrs.	Tuition and fees	Intl. Student Insurance
1 <sup>st</sup> yr. Fall	10	\$8111	\$387
1 <sup>st</sup> yr. Spring	9	\$7321	\$387
1 <sup>st</sup> yr. Summer	1	\$996	\$387
2 <sup>nd</sup> yr. Fall	9	\$7321	\$387
2 <sup>nd</sup> yr. Spring	1	\$996	\$387
Estimated Tuition/Fees Total for 2 yrs.			\$26,680

Living	On-campus housing	Off-campus housing	Utilities/phone/Internet	Meals & Incidentals
/Month	\$870-\$1233	\$300-\$400	\$110	\$600-800
Estimated Living Total for 2 yrs.				\$24,240-\$31,440

**Estimated total cost for 2 year study and living: \$51,000-\$59,000, approximately ¥400,000**

# Affordability

## Estimated Annual Tuition/Fees for Masters Programs



Source: graduate school website of each institution

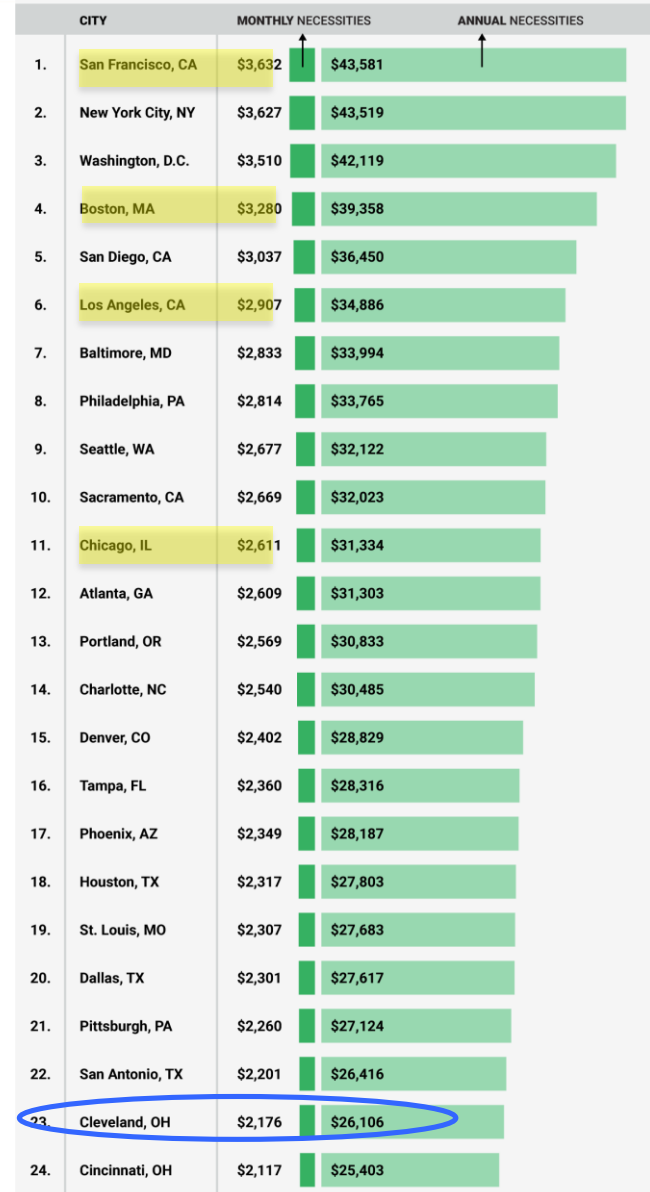
Does not include any negotiated discounts at other institutions

### The 10 most affordable places to live

1	Akron, OH
2	Dayton, OH
3	Louisville, Kentucky
4	Kansas City, Missouri
5	Wichita, Kansas
6	Little Rock, Arkansas
7	Cleveland, Ohio
8	Toledo, Ohio
9	Syracuse, New York
10	St. Louis, Missouri

Source: CNN Money 2015

## HOW MUCH IT COSTS A SINGLE PERSON TO LIVE IN 24 MAJOR US CITIES



SOURCE: The Economic Policy Institute (EPI)

BUSINESS INSIDER

# Student Success: Facts and Figures since 2011

## Collaborative Akron Masters Program between BUCT and the CPSPE-UA

### General structure

- 3 Years Undergraduate Study at Beijing University of Chemical Technology
- 2 Years at UA in Polymer Science OR Polymer Engineering
- Complete BS and MS in 5 years

### Facts and Figures from 2011

- **110** BUCT students came to CPSPE-UA
- **27** students are currently pursuing their Master degrees
- **83** students graduated with Master degrees from Akron
- **57** out of 83 graduated students (**69%**) have been recruited to Ph.D. programs in **24** different universities

