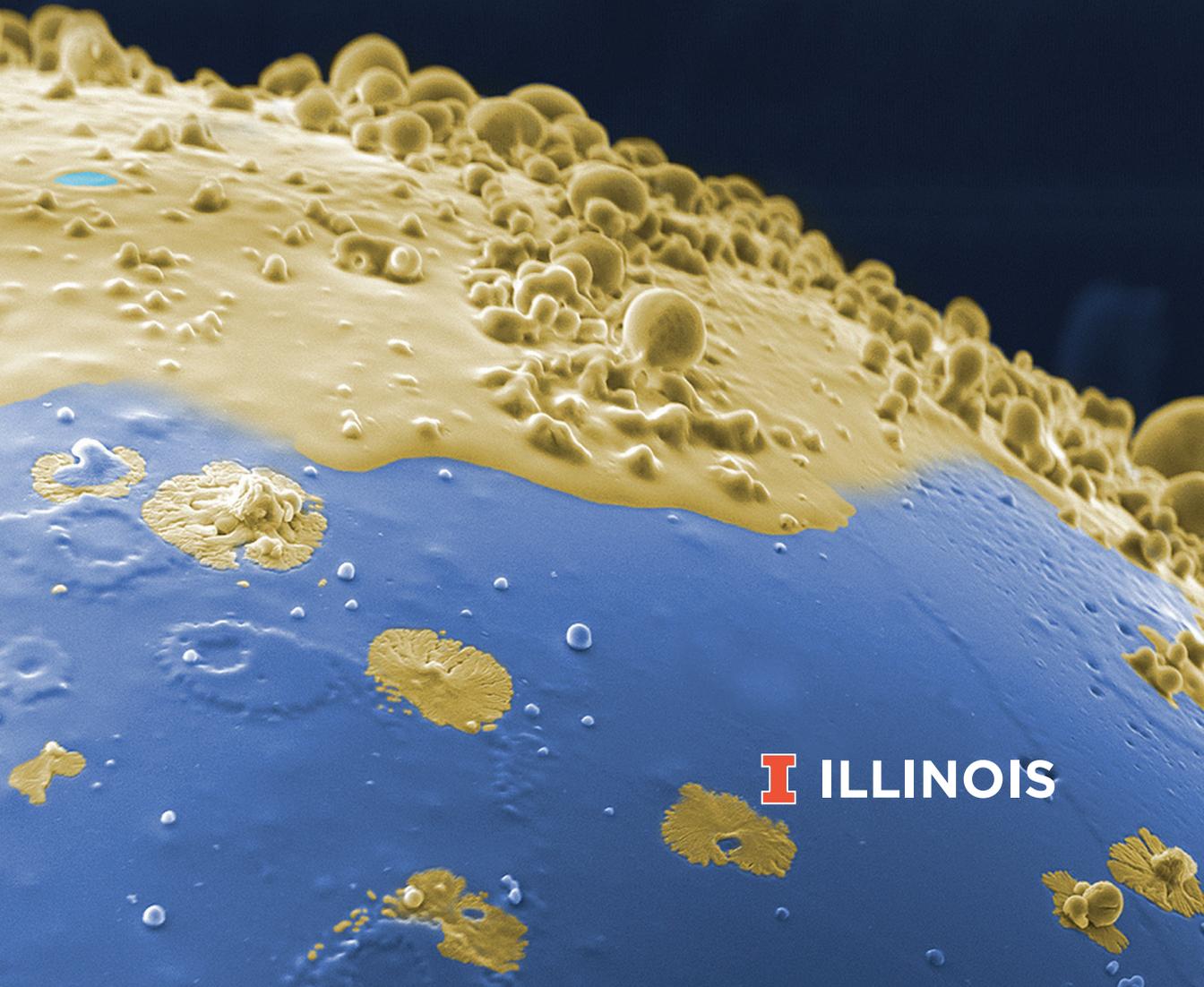




2017-18
ANNUAL
REPORT

Department of Chemistry



I ILLINOIS

CHEMISTRY AT ILLINOIS

We conduct **RESEARCH** with courage—willing to step outside the box and try something new.

We approach **EDUCATION** with curiosity—because sometimes questions are more important than answers.

We pursue **GREATNESS** with passion—confident that together we can achieve extraordinary things.

Building on a rich history of achievement, we aspire to an even brighter future. With you. With Illinois.

Visit www.chemistry.illinois.edu to learn more.

2017-18 HIGHLIGHTS

Image: Mikayla Yoder and Maggie Bridgewater

Sesquicentennial Celebration
(October 2017)



Michael J. Sofia (PhD, '84)
receives the College of Liberal
Arts & Sciences Alumni
Achievement Award
(October 2017)



Jinwoo Cheon (PhD, '93)
receives the Madhuri and
Jagdish N. Sheth International
Alumni Award for Exceptional
Achievement (April 2018)



Prof. Lisa Olshansky
and Prof. Liviu Mirica
accept offers to join our
inorganic chemistry area
(April-June 2018)



Andrew A. Gewirth
invested as the Peter
C. and Gretchen Miller
Markunas Professor
of Chemistry
(September 2017)

Scott E. Denmark
elected to National
Academy of Sciences
(May 2018)

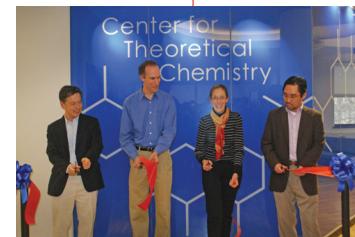


First study abroad
program to Costa Rica
(June 2017)

Catherine J. Murphy
invested as the Larry
Faulkner Endowed
Chair in Chemistry
(October 2017)



With Illinois campaign launch
and Quad festival
(October 2017)



Theory Center opens
(March 2018)



James A. Spudich (BS, '63)
receives the University of
Illinois Alumni Achievement
Award (May 2018)

Convocation, featuring
2018 ACS President
Peter Dorhout (BS, '85)
(May 2018)

9,345
ALUMNI

Image: Adina Badea

9,345 Alumni
55 Countries



TOP 5 U.S. METROPOLITAN AREAS FOR ALUMNI



| | # | % of US total |
|---------------------------------|-------------|---------------|
| Chicago-Naperville-Elgin | 2160 | 24% |
| Philadelphia-Camden-Wilmington | 327 | 4% |
| New York-Newark-Jersey City | 298 | 3% |
| San Francisco-Oakland-Hayward | 238 | 3% |
| Washington-Arlington-Alexandria | 203 | 2% |
| Total of Top 5 | 3226 | 36% |

TOP 5 COUNTRIES OUTSIDE U.S.

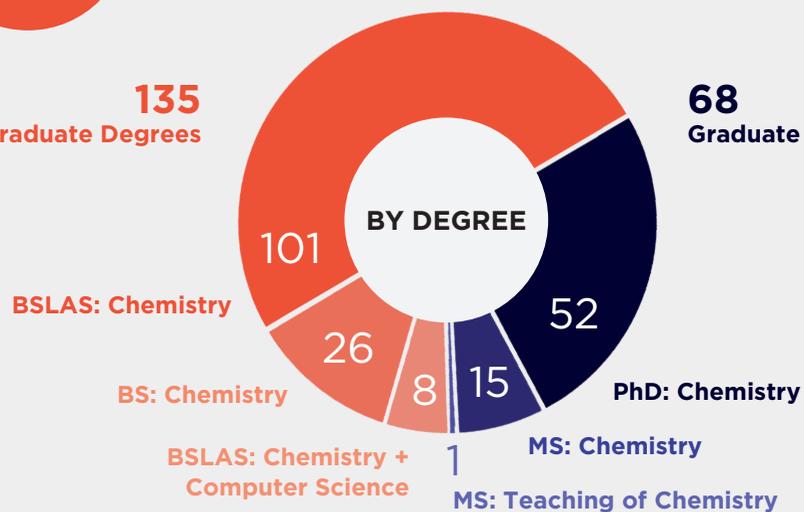
| | |
|---------------------------|----|
| Republic of Korea | 83 |
| Canada | 51 |
| China | 47 |
| Taiwan, Republic of China | 26 |
| India | 18 |

203
2018
GRADS

GET TO KNOW OUR NEWEST ALUMNI

135
Undergraduate Degrees

68
Graduate Degrees



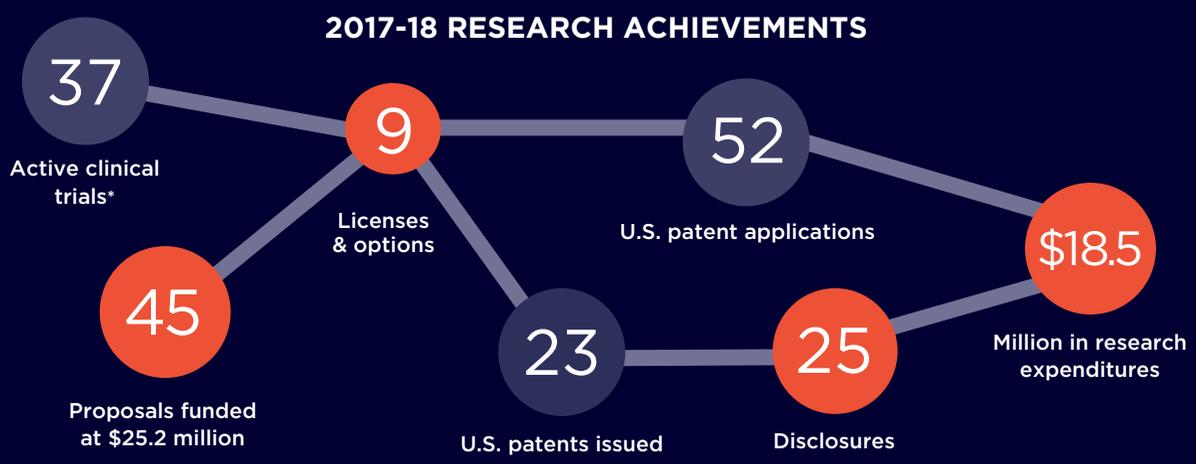
PLACEMENTS FOR 2018 GRADUATES*

| | Average Salary Non-Academia/Education | Employer | Top Industry | Top First Destination |
|----------------------|---------------------------------------|----------|---------------|--|
| Undergraduate | \$ 42,185 | Cargill | Software/tech | 57% graduate/professional school 43% industry |
| Graduate | \$ 100,376 | Intel | Software/tech | 32% postdoc 54% industry 11% academic 3% government/other |

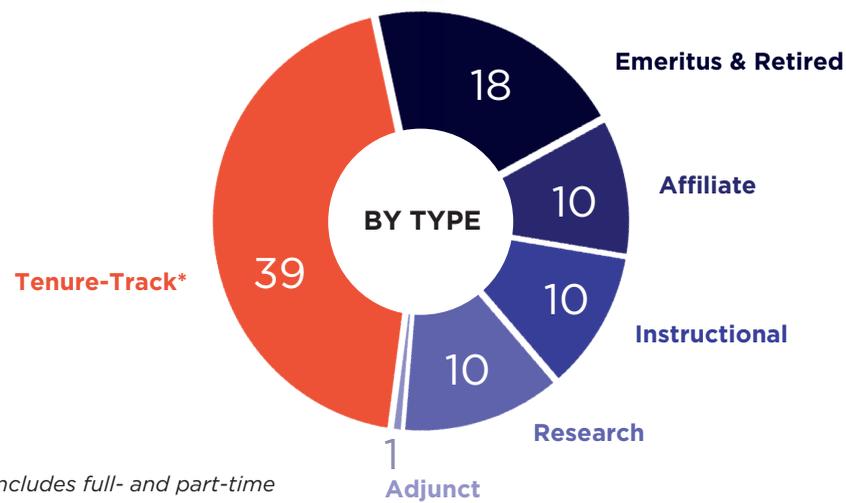
*Results provided by graduates who elected to report.

88
FACULTY

Image: Prapti Kafle



*some in conjunction with other universities



FUNDING SOURCE

| | Grants | Amount |
|------------------------------|-----------|---------------------|
| National Institute of Health | 9 | \$ 16,142,214 |
| National Science Foundation | 8 | \$ 3,605,895 |
| Private Funding | 20 | \$ 3,465,035 |
| U.S. Department of Energy | 5 | \$ 1,365,430 |
| U.S. Department of Defense | 3 | \$ 703,767 |
| Total | 45 | \$25,282,341 |

WORLDWIDE COLLABORATION



Visit www.experts.illinois.edu to learn more about our collaborative research output around the world.

TENURE-TRACK FACULTY BY RESEARCH AREA

| | |
|----------------------|----|
| Analytical Chemistry | 8 |
| Chemical Biology | 15 |
| Inorganic Chemistry | 7 |
| Materials Chemistry | 16 |
| Organic Chemistry | 12 |
| Physical Chemistry | 15 |

Several faculty conduct research in multiple areas.

AN INTERDISCIPLINARY APPROACH

- **31** (80%) of our tenure-track faculty have at least 1 appointment in another Illinois department, and **23** (59%) have 2 or more
- **6** (15%) hold administrative positions for major centers and institutes at Illinois and elsewhere, including the Beckman Institute and Carle Illinois College of Medicine

874
STUDENTS

294
GRADUATE
STUDENTS

Image: Nitya Sai Reddy Satyavolu and Yiming Wang

580
UNDERGRADUATE
STUDENTS

104

(18%) participated in research

31

(5%) received a departmental/donor-funded scholarship

\$155,000

awarded in departmental/donor-funded scholarships

Funding

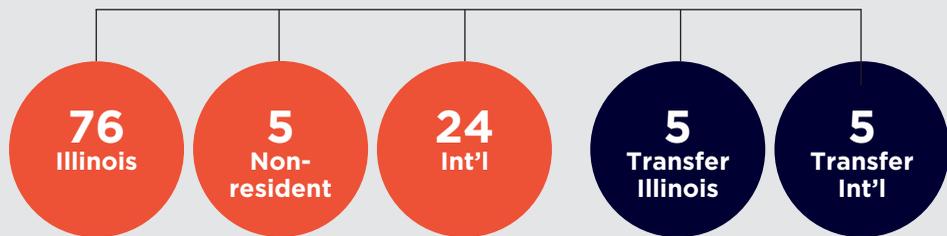
| | |
|------------------------|------------|
| Research Assistantship | 144 |
| Teaching Assistantship | 100 |
| Full Fellowship | 50 |
| Total | 294 |

Fellowships (full & partial)

| | |
|---------------------------|------------|
| Departmental/Donor-Funded | 131 |
| External - NSF | 20 |
| External - Other | 16 |
| Campus | 10 |
| Total | 177 |

GET TO KNOW OUR INCOMING STUDENTS

115 INCOMING UNDERGRADUATE STUDENTS



60 INCOMING GRADUATE STUDENTS



*Underrepresented Minority

2,772
INDIVIDUAL
DONORS

\$4.4

Million in gifts &
commitments*

244

Active Gift Funds
114 current use
130 endowed

The success of our teaching and research is possible because of the consistent support of our alumni and friends. We are currently raising support as a part of With Illinois, the university's largest philanthropic campaign to date. Whether your gifts benefit students, faculty, research, or facilities, you are making a difference! Thank you for your generosity.

Vision 2020, Chemistry Partnership, and LAS Annual Fund for Chemistry

These funds provide unrestricted support to meet the department's most pressing needs. In 2017-18, your gift went towards:

- Speakers for departmental seminars and lectures
- Programming for our graduate students, including recruiting and orientation
- Undergraduate student convocation awards
- Faculty and research support

We gratefully acknowledge these, and all, our donors for their generous support. The following list includes individuals who made gifts to the Department of Chemistry between July 1, 2017 and June 30, 2018.**

\$100,000+

Dr. Stephen J. Elledge and Mrs. Mitzi I. Kuroda
Dr. Ving J. Lee and Dr. May D. Lee
Mrs. Marlyn W. Rinehart and Prof. Kenneth L. Rinehart+

\$25,000 - \$99,999

Dr. Jiri Jonas and Dr. Ana M. Jonas
Dr. Charles W. Walton+ and Mrs. Genevieve M. Walton+
Dr. John Witt and Mrs. Margaret R. Witt

\$10,000 - \$24,999

Dr. Anthony W. Czarnik
Dr. Fred C. Falkner and Mrs. Josephine C. Falkner
Dr. Eugene P. Janulis and Mrs. Julianne V. Janulis
Dr. Jacob J. Plattner and Mrs. Jeanne A. Plattner
Dr. Michael J. Sofia and Mrs. Charleen Sofia

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Image: Prof. Hyunjoon Kong and Prof. Steve Zimmerman

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Dr. Richard H. Wieder and Mrs. Catherine L. Wieder

We also wish to thank the following individuals, whose gifts to the Office of the Chancellor, College of Liberal Arts and Sciences, and School of Chemical Sciences directly support the Department of Chemistry.

Dr. Ronald L. Amey and Mrs. Gail L. Amey
Dr. Victor C. Bastron and Mrs. Ellen K. Bastron
Mr. Oliver J. Bell
Dr. Larry A. Brey
Dr. Shun C. Fung and Mrs. Juliana S. Fung

*Does not include payments on major gift commitments made prior to FY18.

**Includes outright gifts and payments on major gift pledges made prior to FY18; does not include new major gift commitments.

+ Deceased

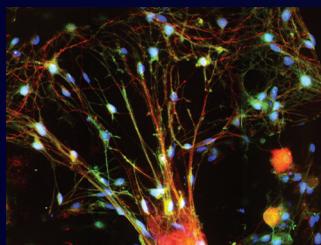
Science as art

The following images were created by students and faculty in the School of Chemical Sciences (SCS).



Mikayla Yoder and Maggie Bridgewater (Nuzzo Group)

Taken on an optical microscope, this image of a silicon solar microcell array was edited in ImageJ. Given the varying oxide thicknesses, the silicon dioxide layers are vibrantly colored when viewed under the microscope, and this image attempts to abstractly re-create that which is lost upon rendering into a black-and-white snapshot.



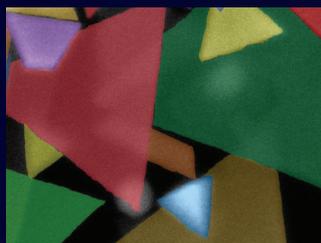
Adina Badea (Nuzzo Group)

Confocal fluorescence micrograph of primary dorsal root ganglion cells cultured on a Silicon 3D scaffold coated with a custom cell-adhesive protein. The neurons (red) and supporting glial cells (green) form complex intertwining networks with increased time in culture that abide by the geometric cues of the scaffold.



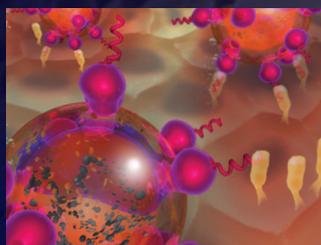
Prapti Kafle (Diao Group)

Cross-polarized microscopy image of multilayered film consisting of alternate layers of an anti-cancer drug ellipticine and an edible polysaccharide polymer, pullulan. The nanothin film, produced by successive shearing of the drug and polymer solutions on silicon, embraces a magnificent morphology with needles and spherulites, that evokes colorful elements of nature unique to the spectator's imagination.



Nitya Sai Reddy Satyavolu and Yiming Wang (Lu Group)

A false-colored SEM image of gold nanoprisms. The 2D gold nanostructures were synthesized using iodide as the capping agent which allows the final nanoparticles to be only a few nm thick and hundreds of nm in size. Excess gold precursor results in nanoprisms of different sizes.



Prof. Hyunjoon Kong and Prof. Steve Zimmerman

Vascular diseases are a major health problem in the United States. SCS faculty are exploring ways to better control the delivery of medicine through nanoparticles and improve transport of stem cells to repair damaged tissue. In this image, cells are coated with bioactive nanoparticles that guide stem cells to inflammatory vascular walls.

On the cover:

Sizhu You (Suslick Group)

This is a false-colored SEM image showing the morphological features developed on the surface of a sucrose crystal that is caramelized under ultrasonic irradiation.

I ILLINOIS
Chemistry

SCHOOL OF CHEMICAL SCIENCES

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