



**ENGINEERING  
RESEARCH**

*Speed Research 2021 Annual Report  
Kevin Walsh and Jacqui Smith*

# FY21/CY21 BY THE NUMBERS

## ***FY21 New Proposals and Awards Data***

- Total of \$20.4M in New Awards (based upon Speed School PIs), which is a **record for Speed School and the 1<sup>st</sup> time we have exceeded \$20M!**
- 62 New Awards (with Speed PI and CoPIs) and 168 Submissions
- Strong number of NSF CAREER submissions resulting in **Speed School's 5th NSF CAREER award in the past 6 years (easily a school record)!**

## ***FY21 Research Expenditures Data***

- \$12.94M in FY20 (based on % collaboration), **second highest** year in expenditures for the past six years.

## ***CY21 Publications and Patents Data***

- Journals – 231
- Conference Proceedings – 103
- Book Publications – 15
- Chapter Publications – 12
- Patents - 19

# 2021 ADR OFFICE RESEARCH SUPPORT INITIATIVES

- **Research Opportunities**

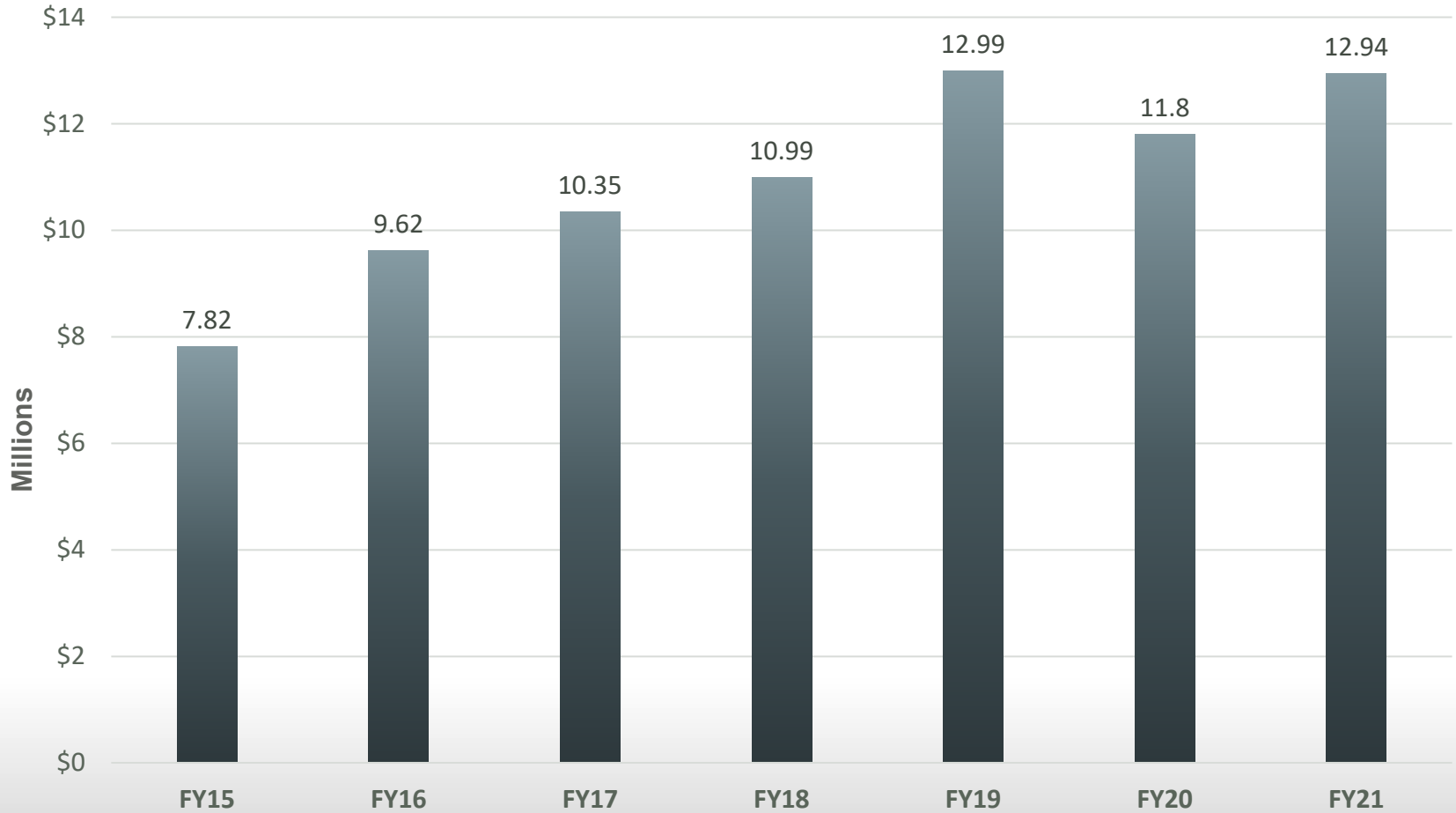
- **NSF CAREER Submission Workshop** – open to entire university
- **Lunch and Learn Series** – with Research Administration Specialists Kelly Jackson and Amy Mock
- **Professional Grant Writing Program** – available to all researchers at Speed School
- **Research Interests Website** – created to facilitate collaboration opportunities and expertise research. <https://engineering.louisville.edu/research-interests/>
- **Pivot Research Portal** – included a new source of research opportunities
- **Postdoc Research Workshop** – Two-part series hosted by Susan Day

- **Reporting**

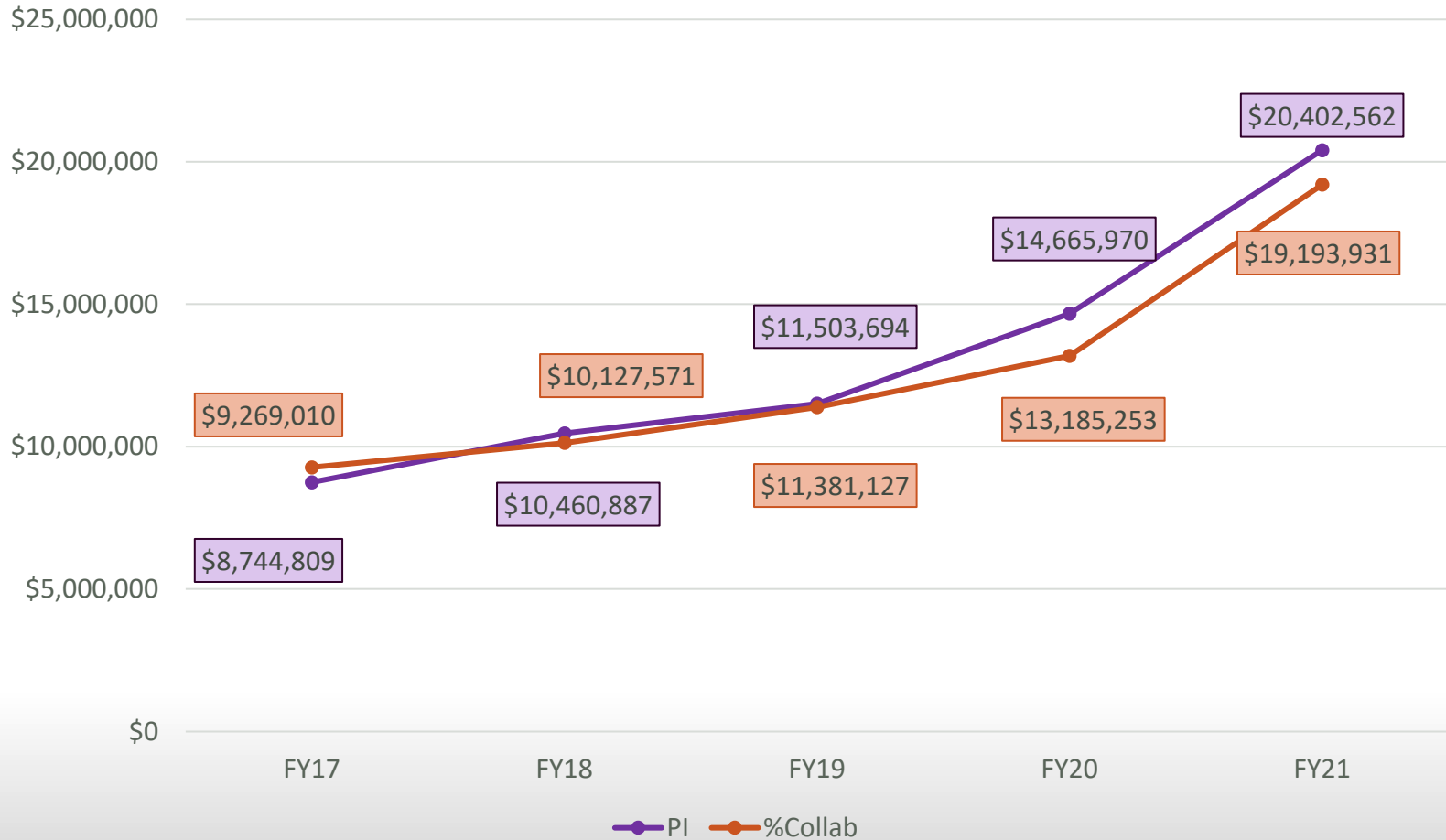
- **Speed Research Annual Report** - <https://engineering.louisville.edu/research-administration/researchproductivity/>
- **Individual Research Productivity Reports** - Each faculty and staff were notified of awards and expenditures to ensure accuracy.
- **Active Research One Sheets** - <https://engineering.louisville.edu/research-administration/researchproductivity/>

# Speed School Research Trends

# Research Expenditures Trend (based upon % Collab)

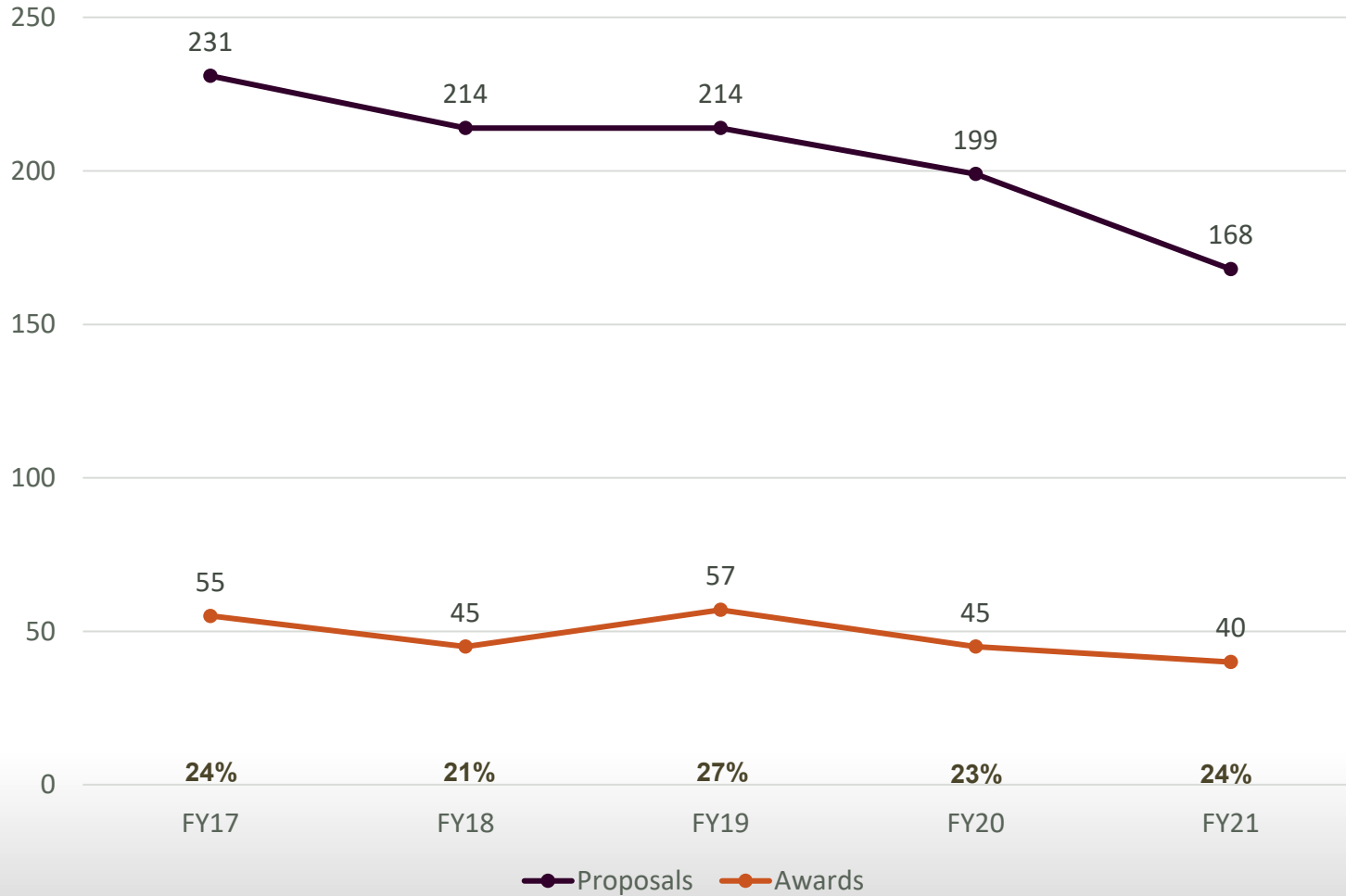


# Speed New Awards by Fiscal Year\*



NOTE - \*Based on amount currently guaranteed to UofL

# Speed Proposal Success Rate FY17-FY21



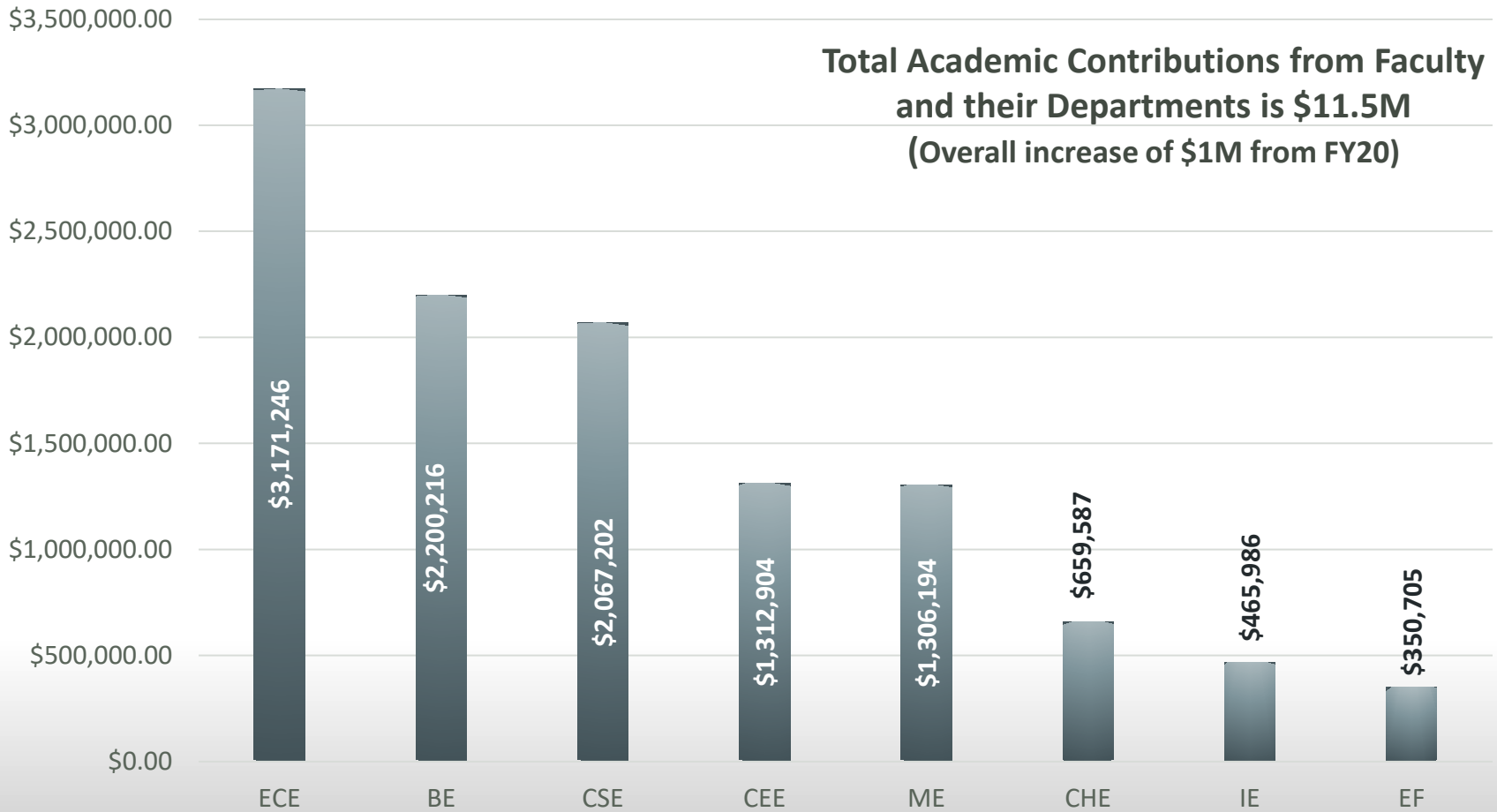
NOTE - FY21 submission numbers affected in part by COVID. FY21 data are totals to date...awards and % success will increase as additional awards are announced in FY22.

# Research Expenditures FY21

---

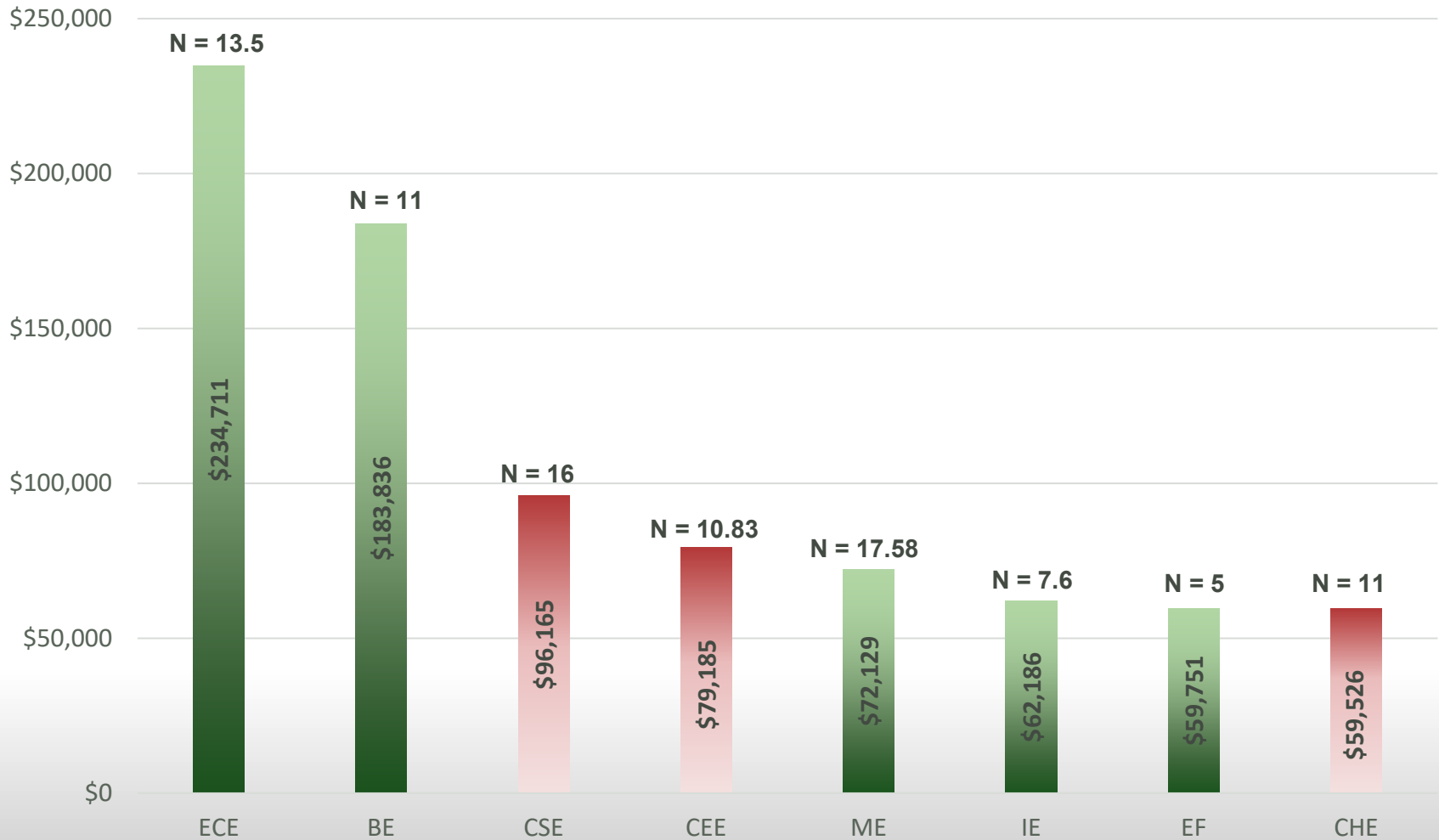


# Research Expenditures by Academic Dept (based on % Collab)



NOTE - Includes TTT faculty, term faculty, and staff in each academic unit

# TTT Faculty Average by Dept (based on % Collab)

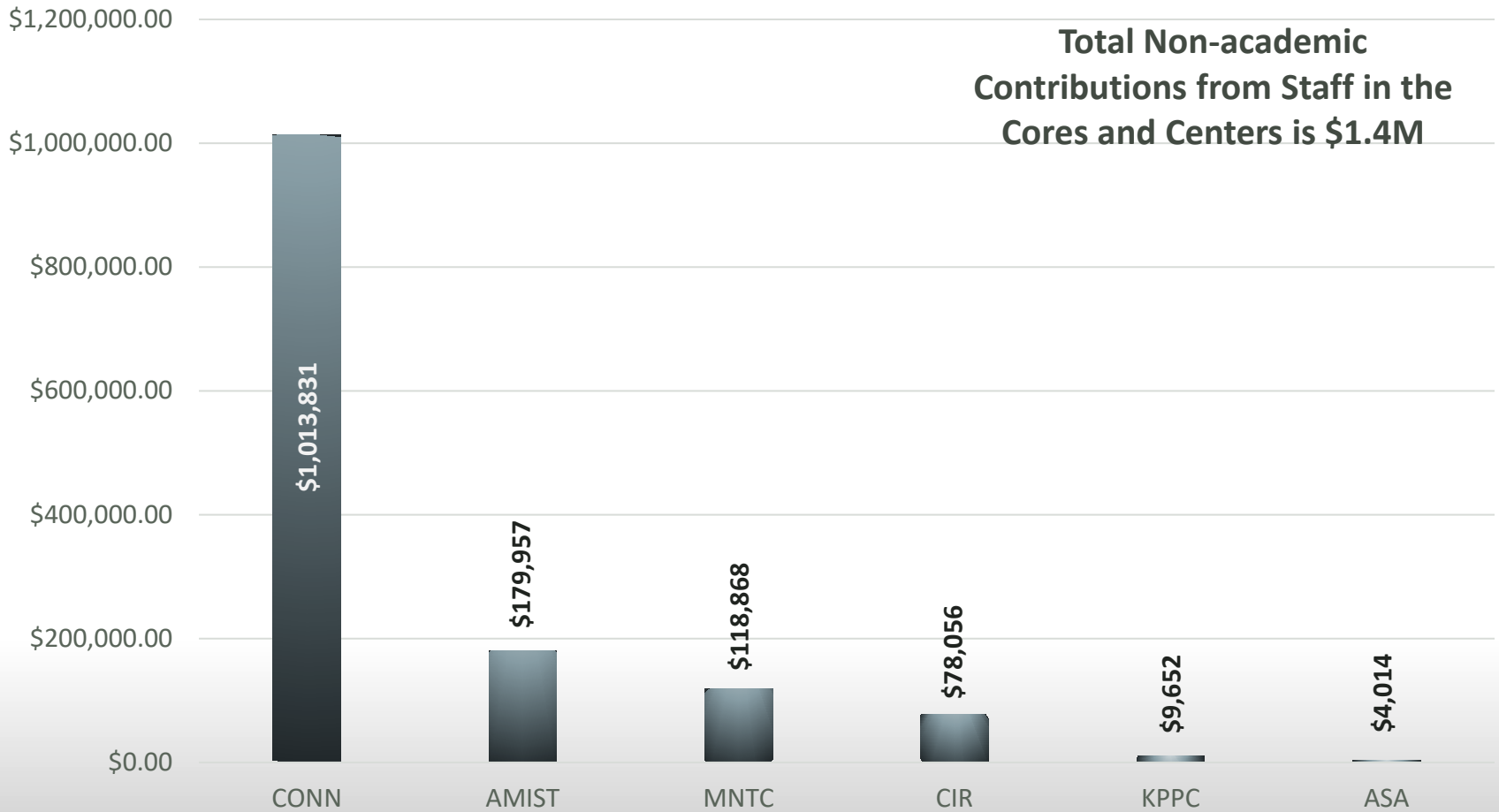


NOTE - TTT refers to Tenured and Tenure Track (Term faculty and staff are not included)

Increased from FY20: ECE, BE, ME, IE, and EF

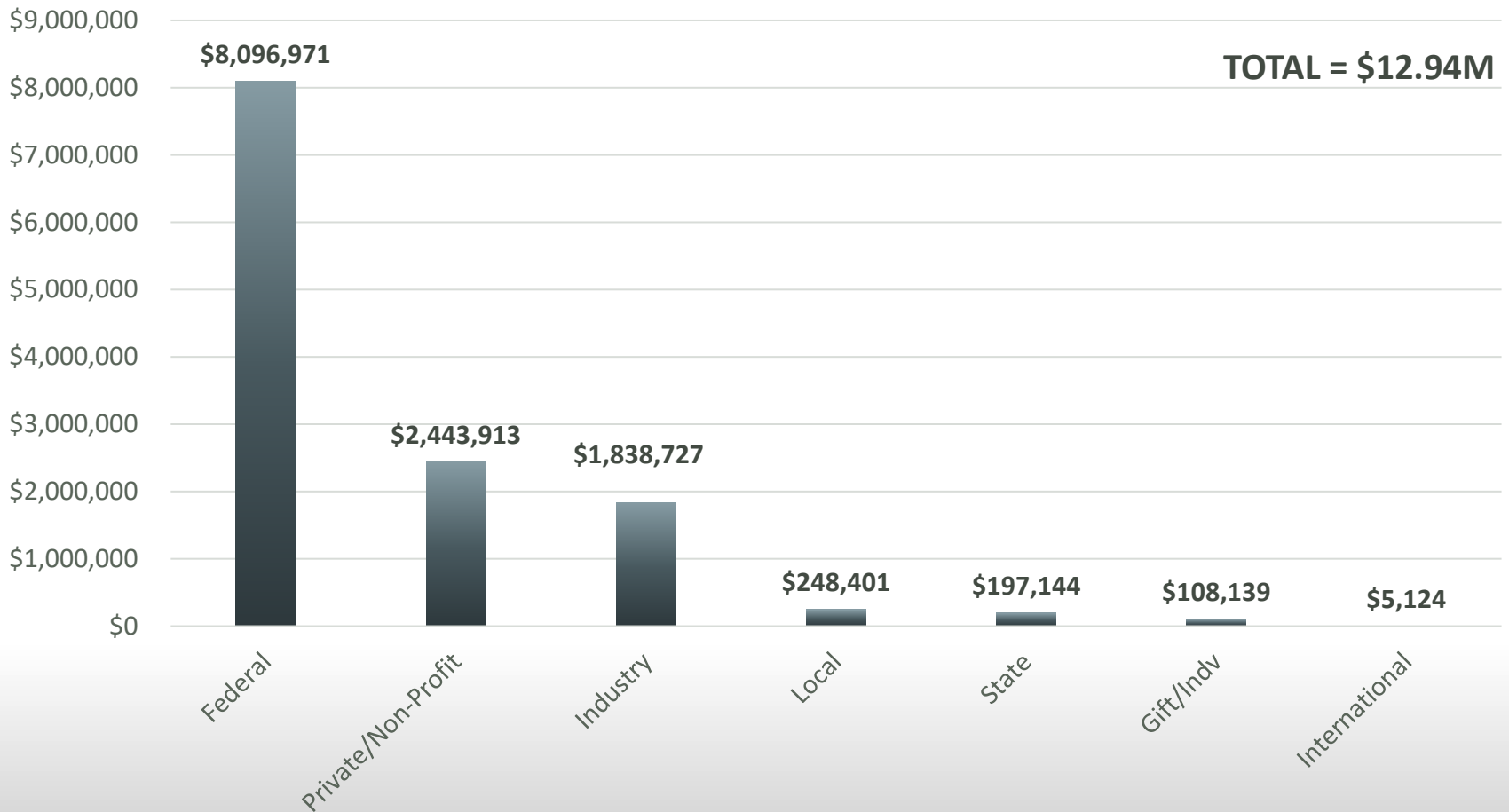
Decreased from FY20: CSE, CEE, and CHE

# Research Expenditures by Centers and Non-Academic Departments (based on % Collab)



NOTE - Includes contributions from associated research staff only. Associated faculty expenditures are reported in their home academic department.

# Research Expenditures by Funding Source (based on % Collab)



# Research Expenditure Trend by Funding Source (FY17 – FY21)

Funding Source	2017	2018	2019	2020	2021
Federal	\$4,335,632	\$5,448,989	\$6,350,397	\$6,512,144	\$8,096,971
Industry	\$2,093,121	\$2,461,589	\$3,615,376	\$2,172,460	\$1,838,727
Gifts	\$501,409	\$521,384	\$248,235	\$197,152	\$108,139
International	\$122,139	\$30,747	\$7,589	\$0	\$5,124
Local	\$333,929	\$362,466	\$331,572	\$390,537	\$248,401
Private Non-Profit	\$2,402,782	\$1,768,568	\$1,867,518	\$2,054,992	\$2,443,913
State	\$565,764	\$419,896	\$572,291	\$470,499	\$197,144
<b>Total</b>	<b>\$10,354,779</b>	<b>\$11,013,643</b>	<b>\$12,992,981</b>	<b>\$11,797,785</b>	<b>\$12,938,417.38</b>

NOTE - Highest expenditures for past 5 years in green

# Research Expenditure Trend by Academic Department (FY17 – FY21)

Department	2017	2018	2019	2020	2021
BE	\$1,529,655	\$1,220,573	\$1,887,747	\$1,566,238	\$2,200,216
CEE	\$1,093,857	\$1,034,264	\$1,418,662	\$1,603,025	\$1,312,904
CHE	\$1,324,133	\$937,828	\$1,261,123	\$823,952	\$659,587
CSE	\$1,145,750	\$1,649,501	\$2,027,103	\$2,141,615	\$2,067,202
ECE	\$1,907,240	\$2,516,088	\$2,549,665	\$2,905,234	\$3,171,246
EF	\$307,758	\$284,181	\$305,234	\$167,938	\$350,705
IE	\$556,969	\$635,012	\$758,741	\$443,345	\$465,986
ME	\$769,901	\$1,018,599	\$1,191,410	\$843,394	\$1,306,194
<b>Total</b>	<b>\$8,635,263</b>	<b>\$9,296,046</b>	<b>\$11,399,685</b>	<b>\$10,494,740</b>	<b>\$11,534,039</b>

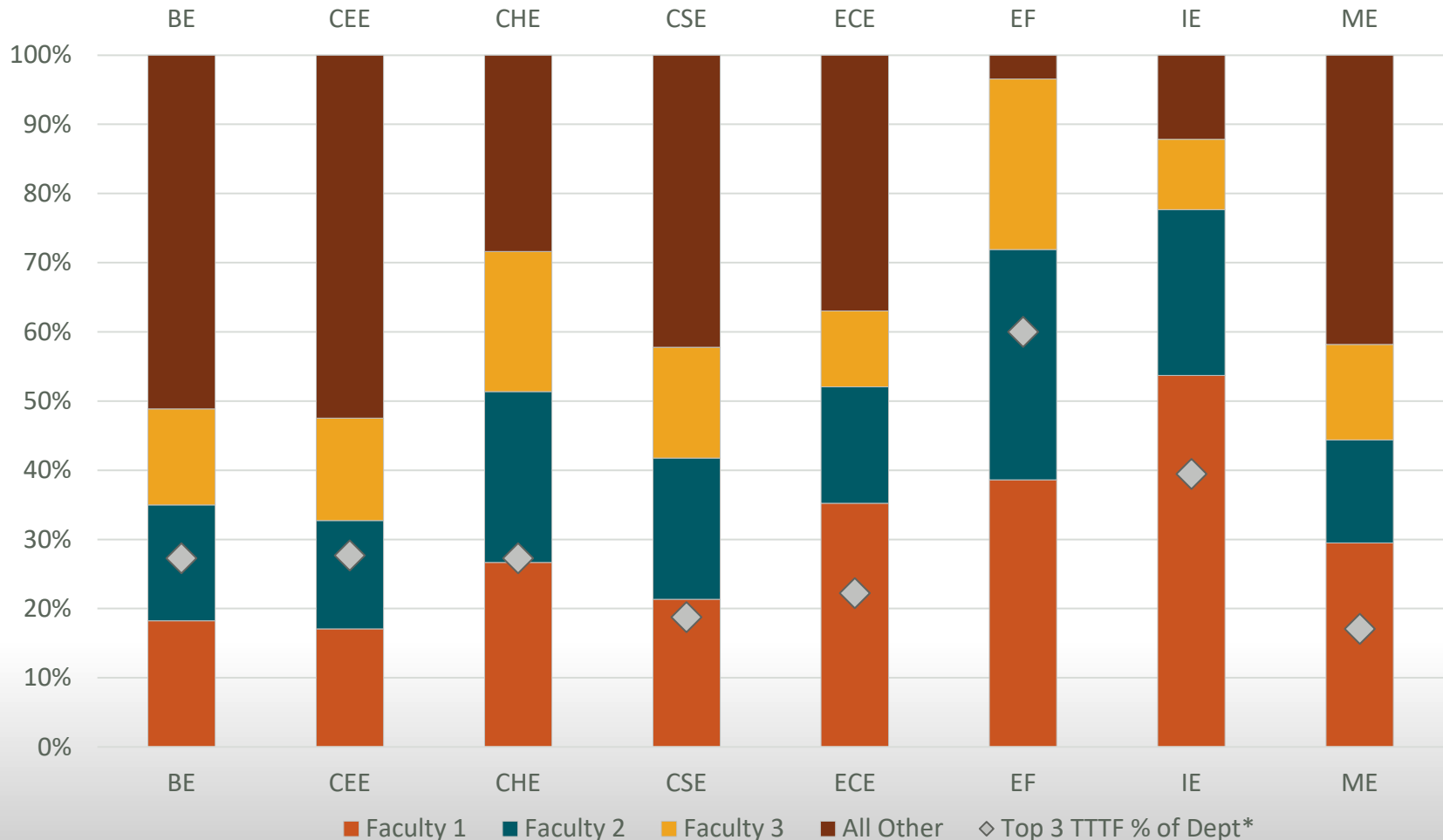
NOTE - Highest expenditures for past 5 years in green

# Research Expenditure Trend by Centers and Non-Academic Departments (FY17 – FY21)

Department	2017	2018	2019	2020	2021
AMIST	\$465,776	\$310,905	\$484,467	\$375,133	\$179,957
ASA	\$4,011	\$3,084	\$84,243	\$27,983	\$4,014
CIR	\$173,820	\$228,083	\$80,721	\$85,188	\$78,056
CONN	\$683,387	\$619,761	\$557,178	\$641,018	\$1,013,831
KPPC	\$266,158	\$345,364	\$191,489	\$37,198	\$9,652
MNTC	\$124,373	\$209,952	\$195,196	\$136,526	\$118,868
<b>Total</b>	<b>\$1,717,525</b>	<b>\$1,717,149</b>	<b>\$1,593,294</b>	<b>\$1,303,045</b>	<b>\$1,404,379</b>

NOTE - Highest expenditures for past 5 years in green

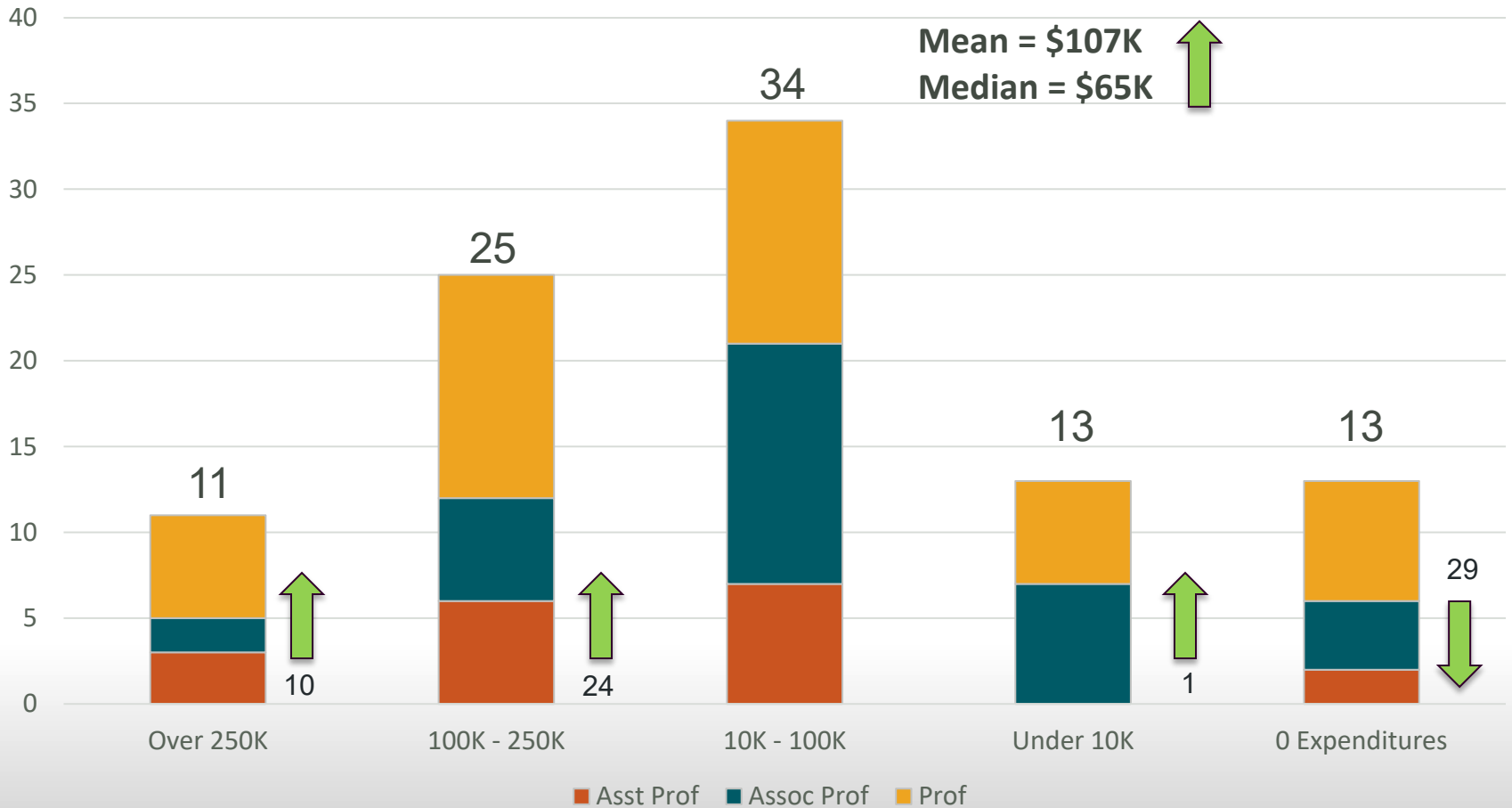
# Research Expenditures by Academic Department with Top 3 TTF Stacked (based on % Collab)



NOTE – Represents the ratio of the top 3 faculty to the total number of TTF in the department. For example, the top 3 BE faculty represent 27% of the department faculty and are responsible for 49% of the faculty research expenditures.



# Distribution of TTT Faculty by Research Expenditures (based on % Collab)

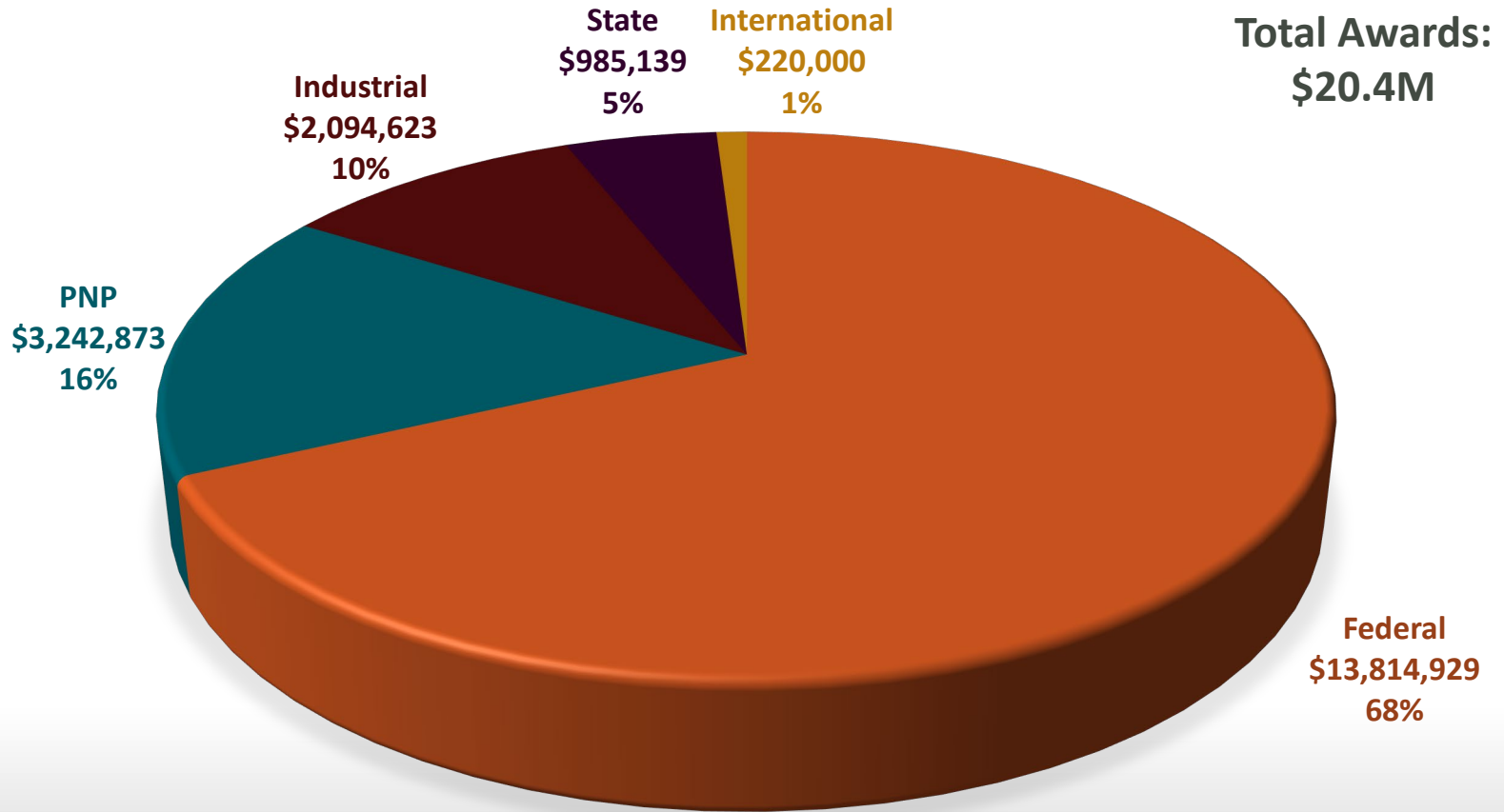


NOTE - TTT refers to Tenured and Tenure Track. Arrows with number indicates the number from the previous year and the type of change.

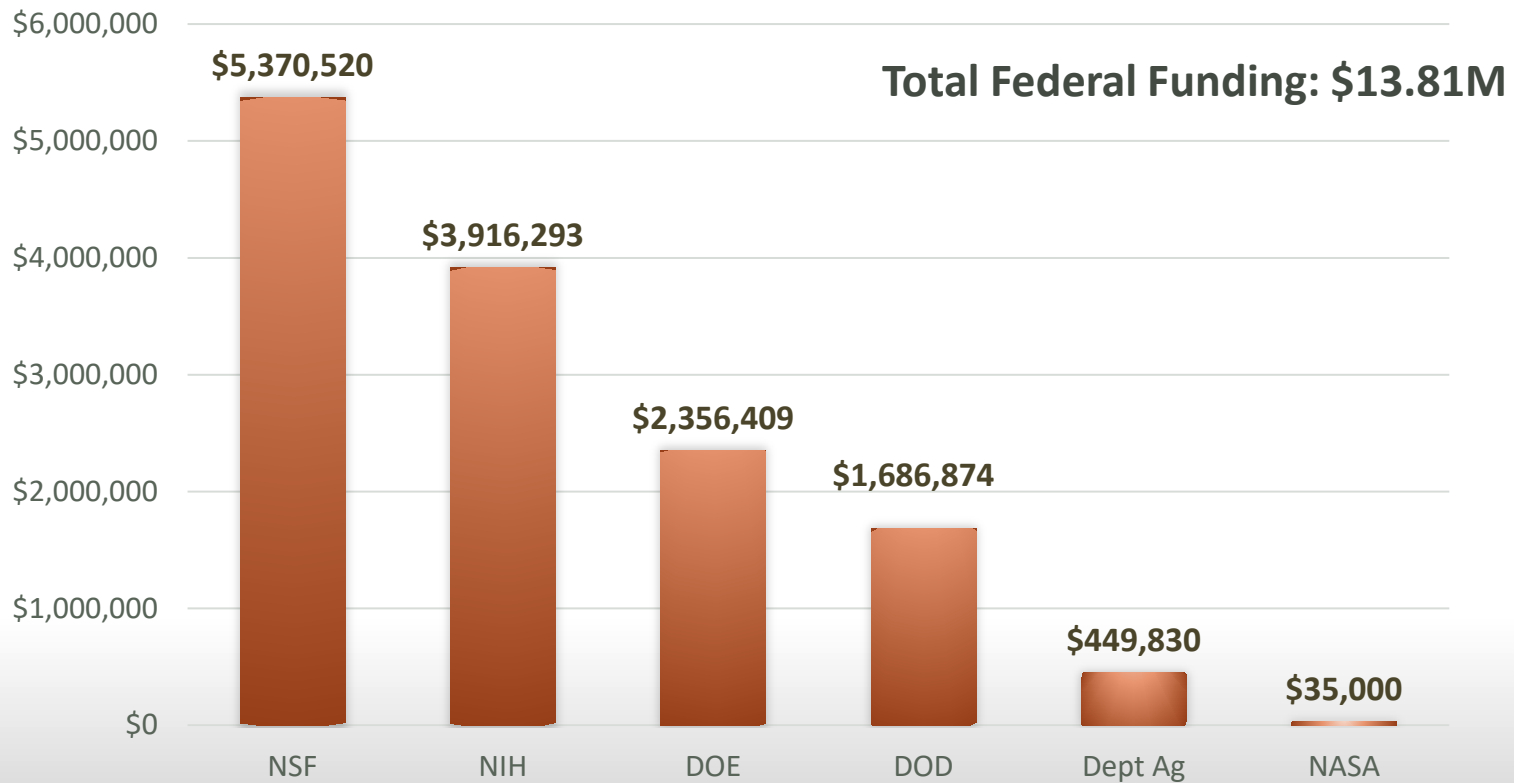
# Awarded Grants FY21

---

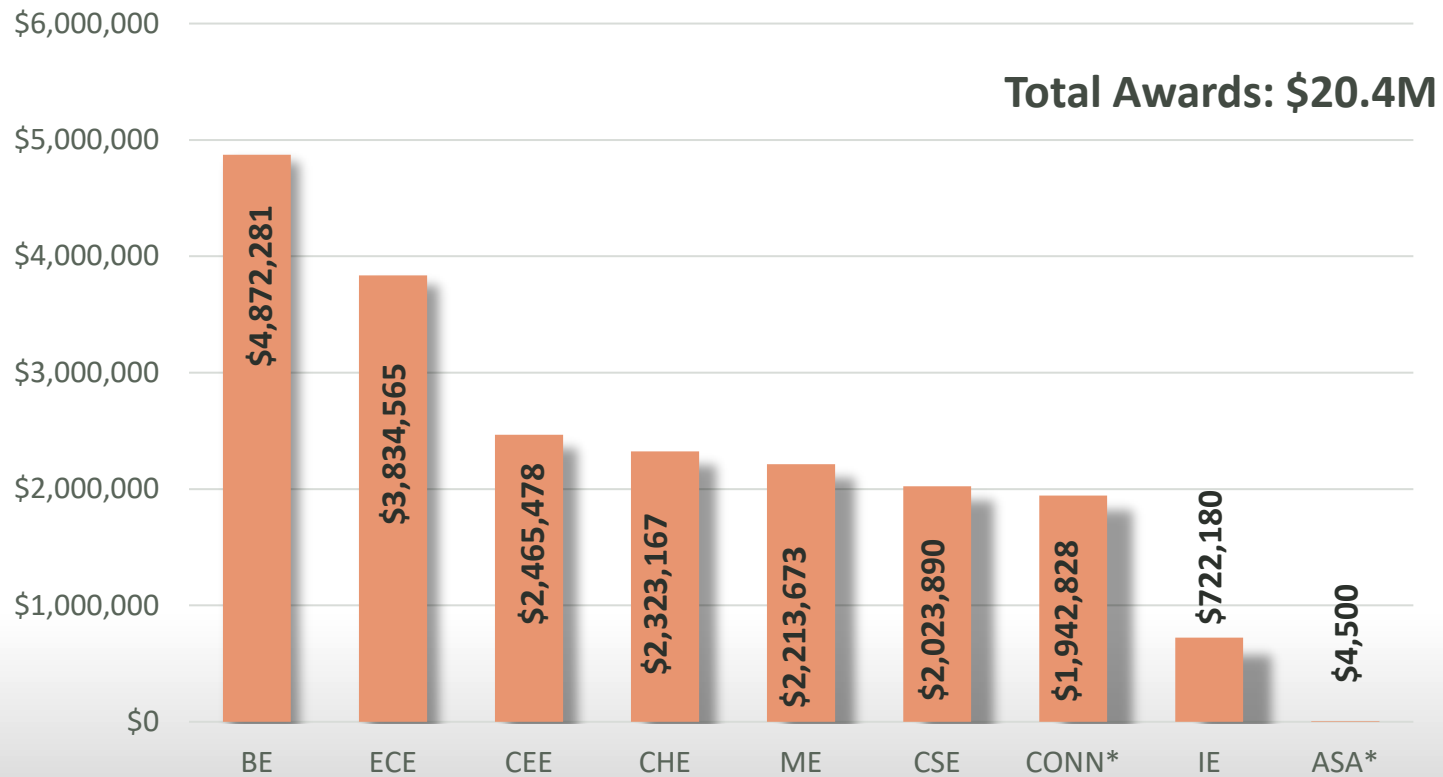
# AWARDS BY FUNDING SOURCE (BASED ON PI)



## TOP FEDERAL FUNDING SOURCES (BASED ON PI)



## AWARDS BY DEPARTMENT (BASED ON PI)

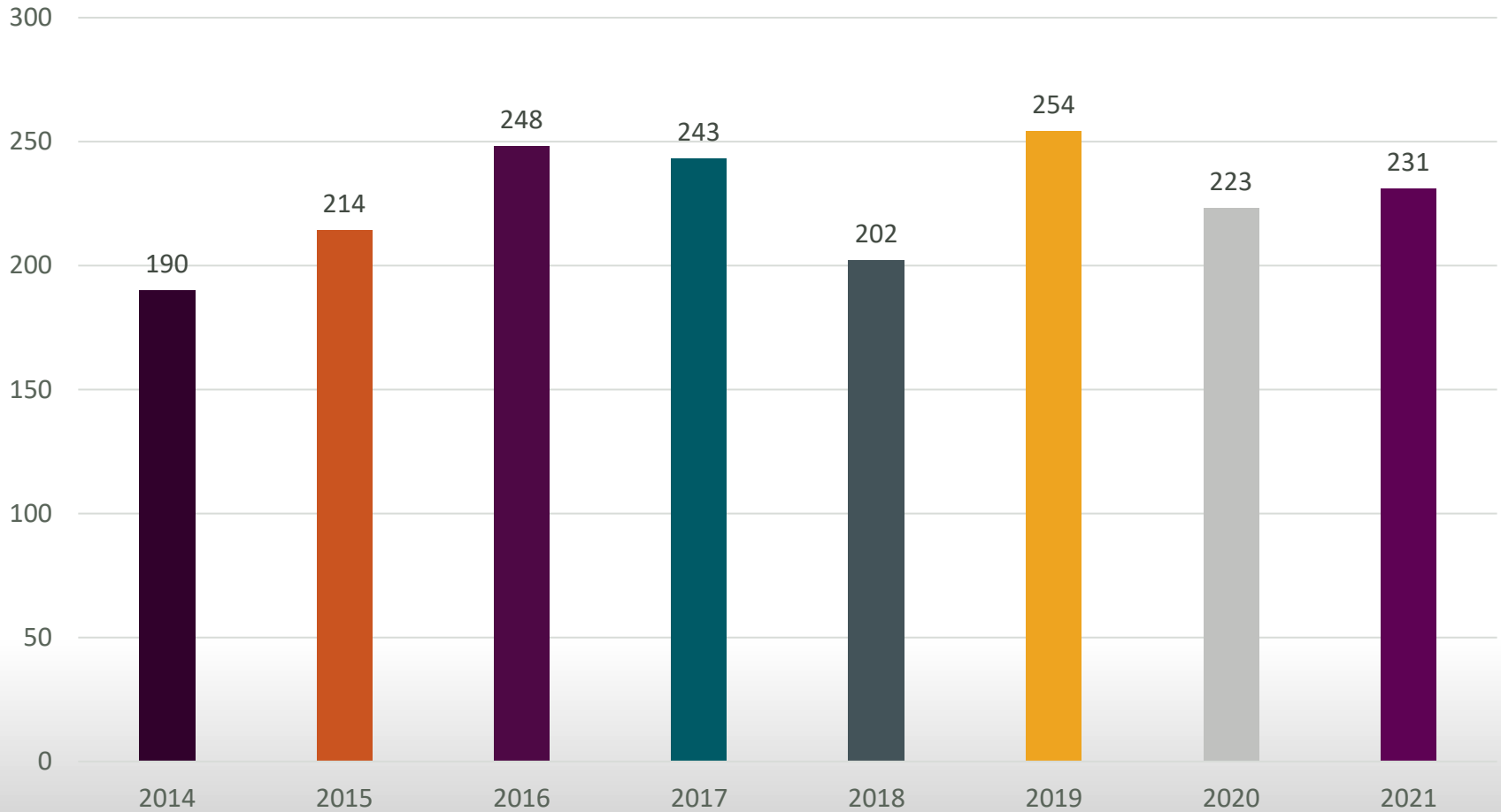


NOTE - \*Includes contributions from associated research staff only. Associated faculty expenditures are reported in their home academic department.

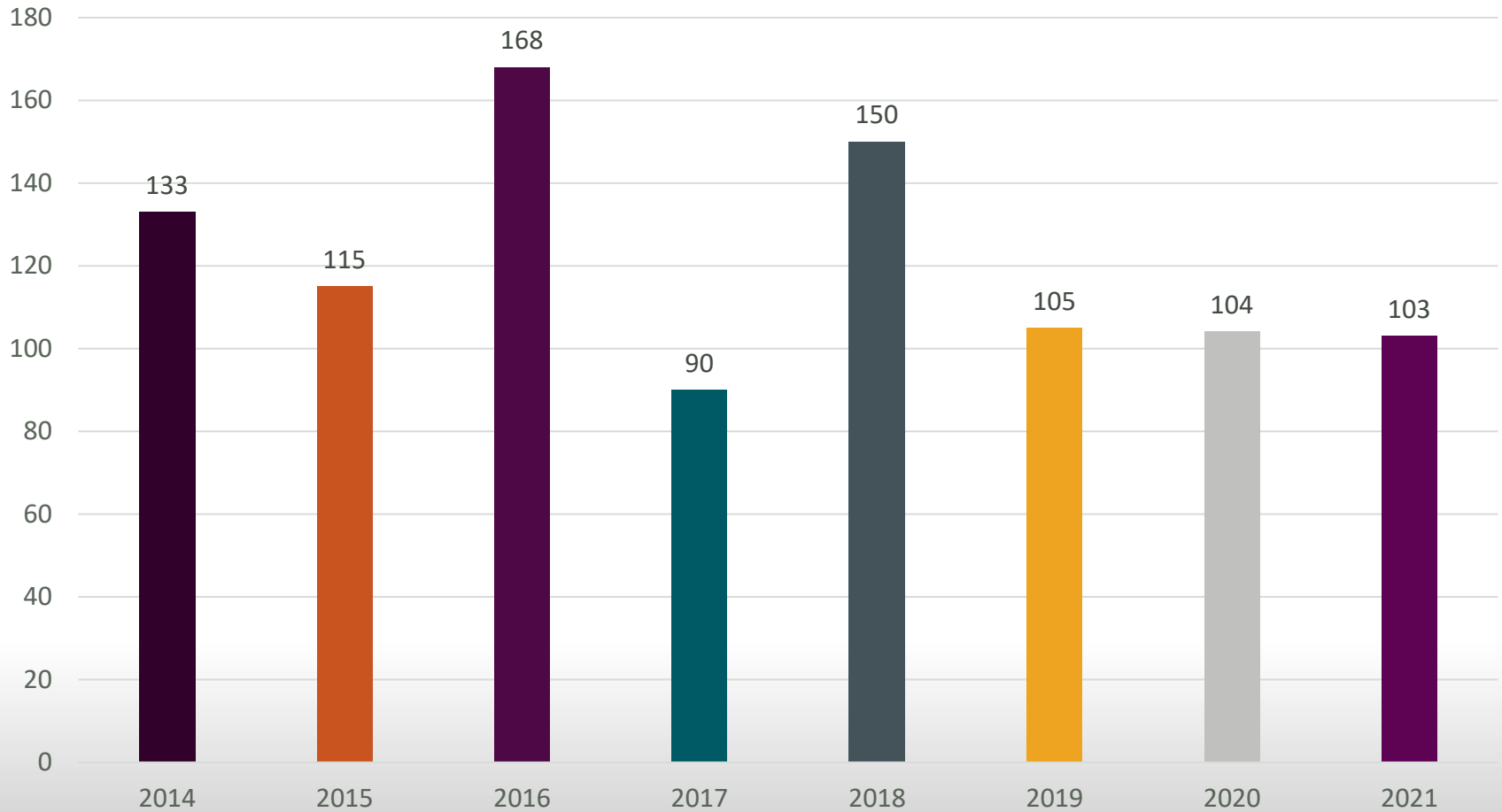
# **CY21 Publications Information**

---

# Speed School Journal Publications

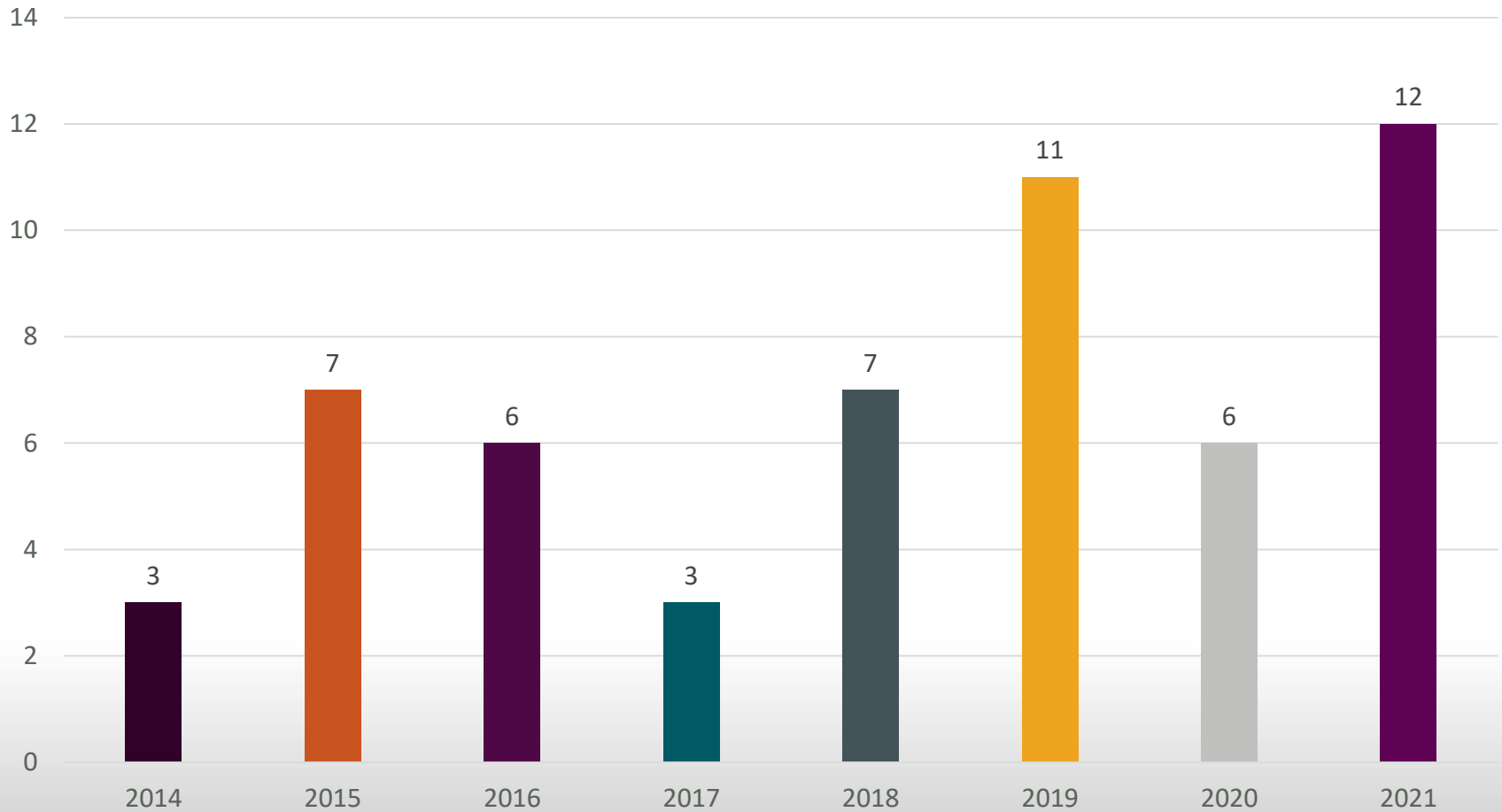


# Speed School Conference Proceedings

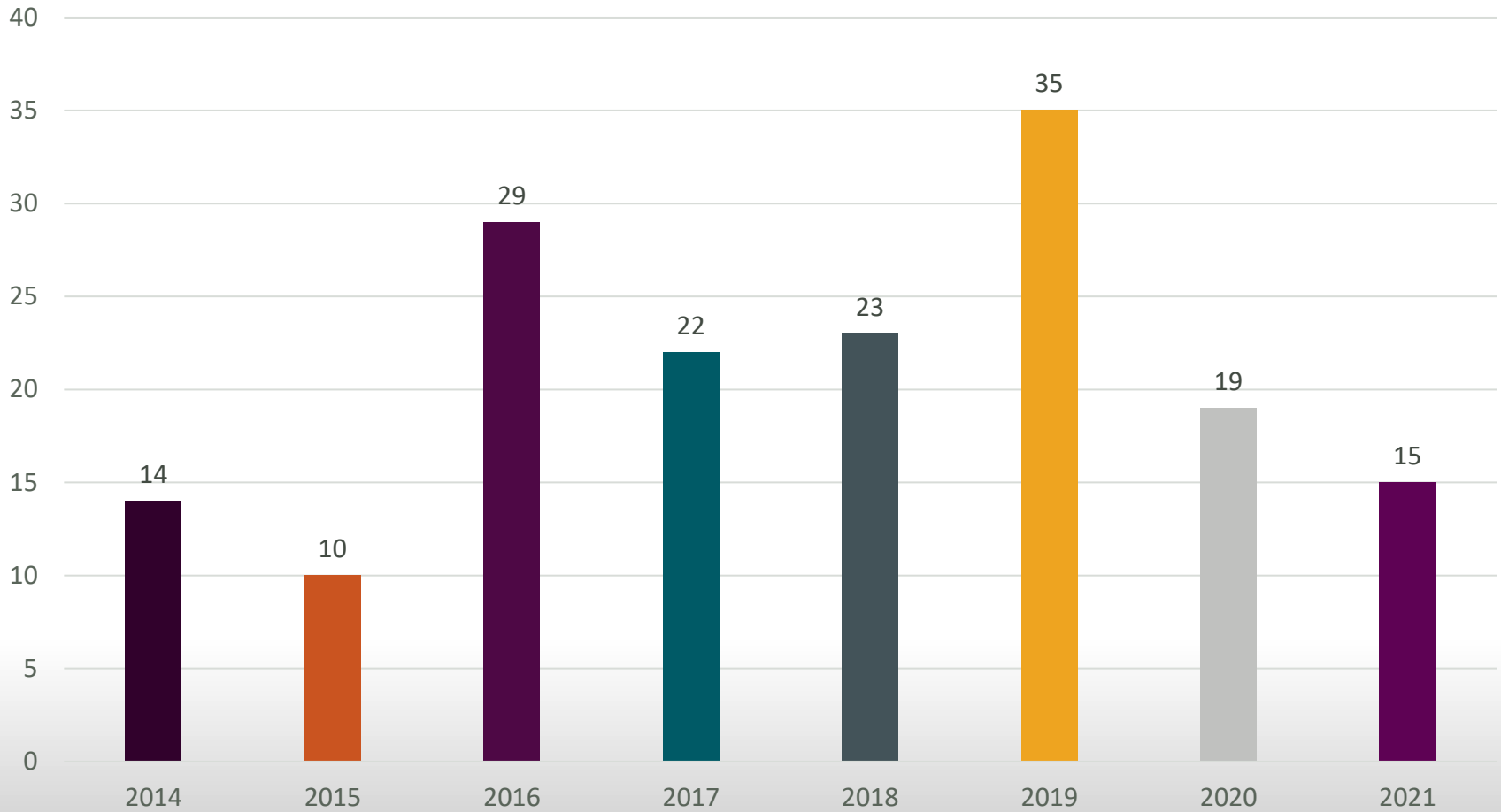




# Speed School Books Published



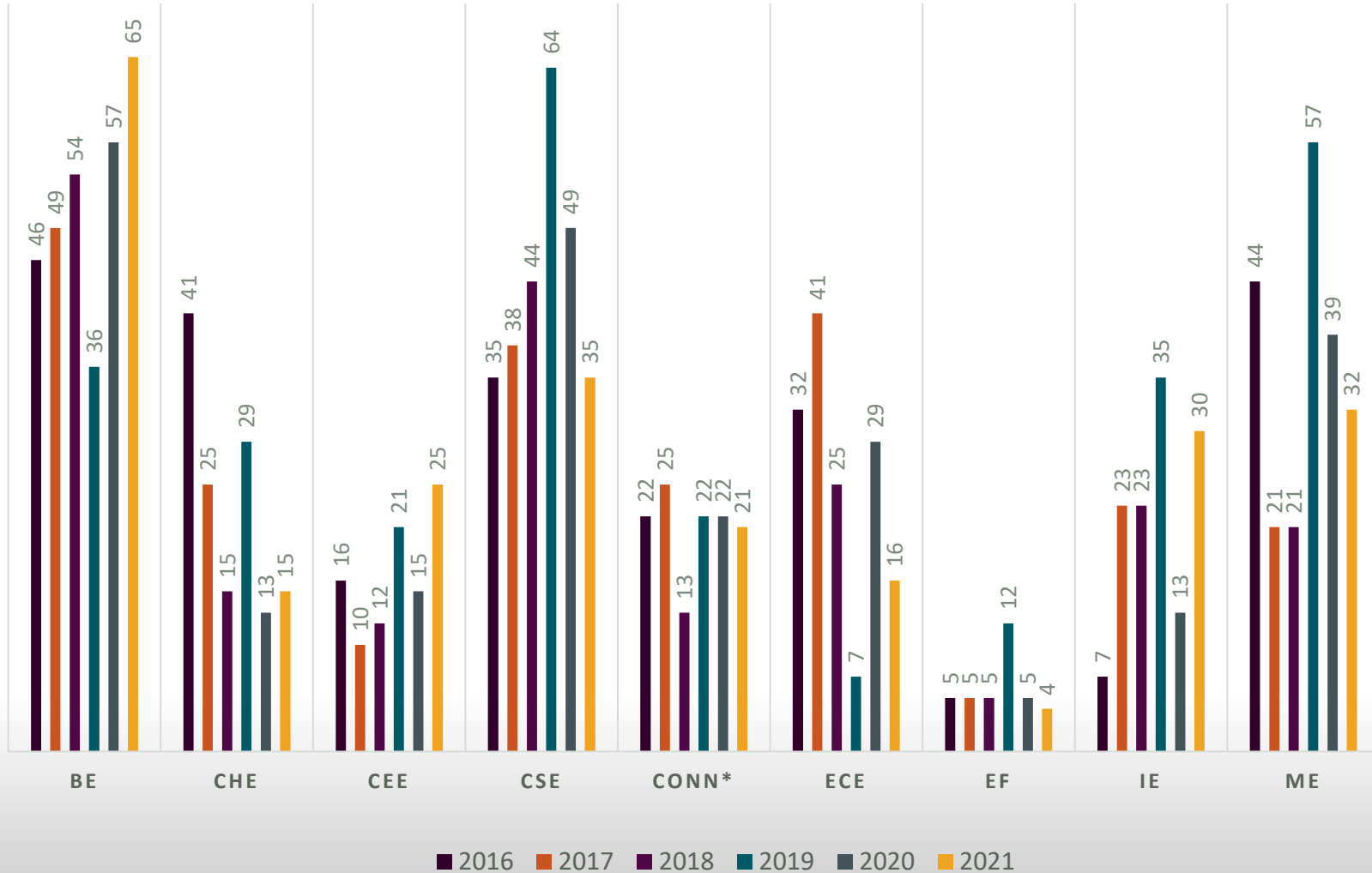
# Speed School Book Chapters



# **CY21 Publications By Department**

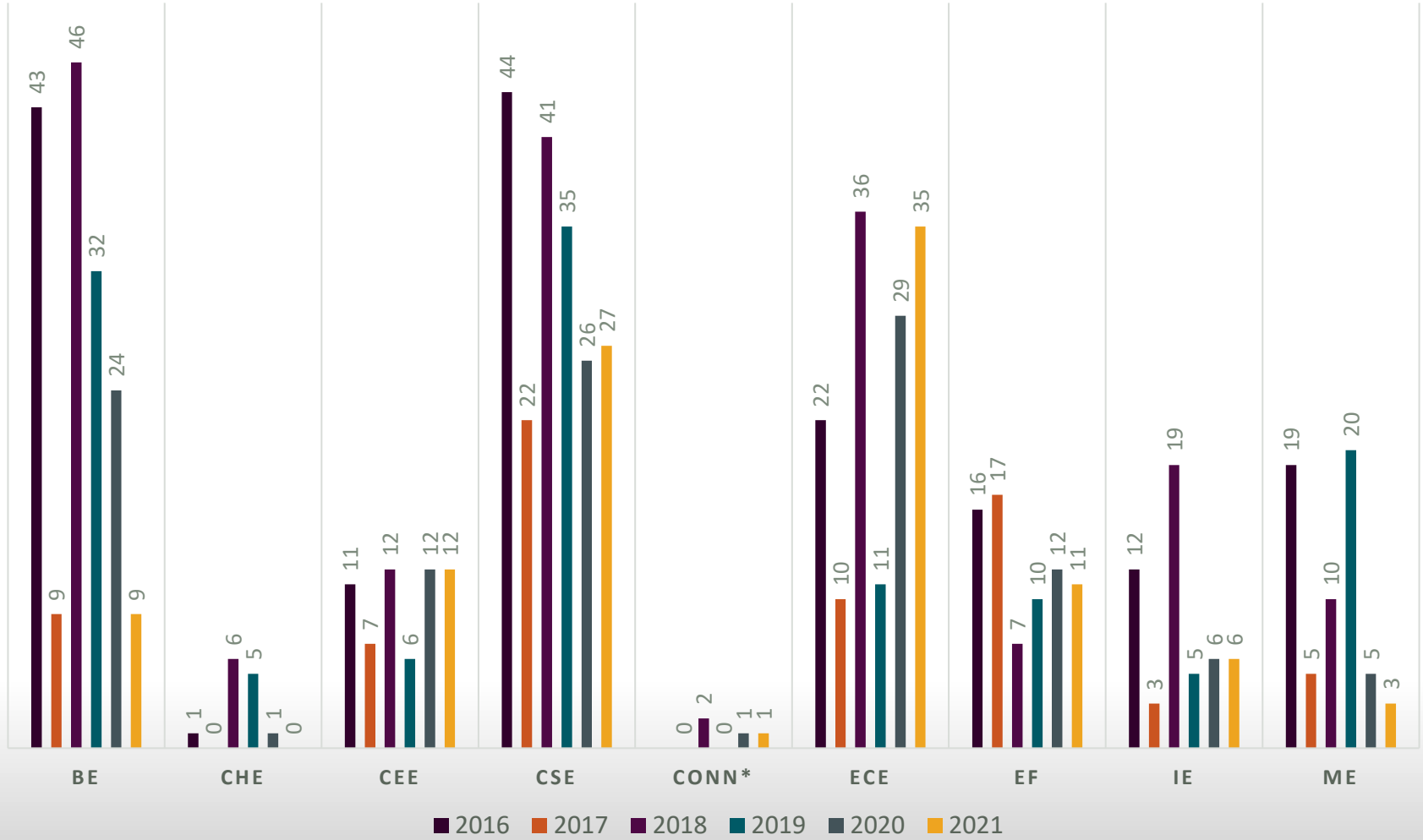
---

# Journal Publications



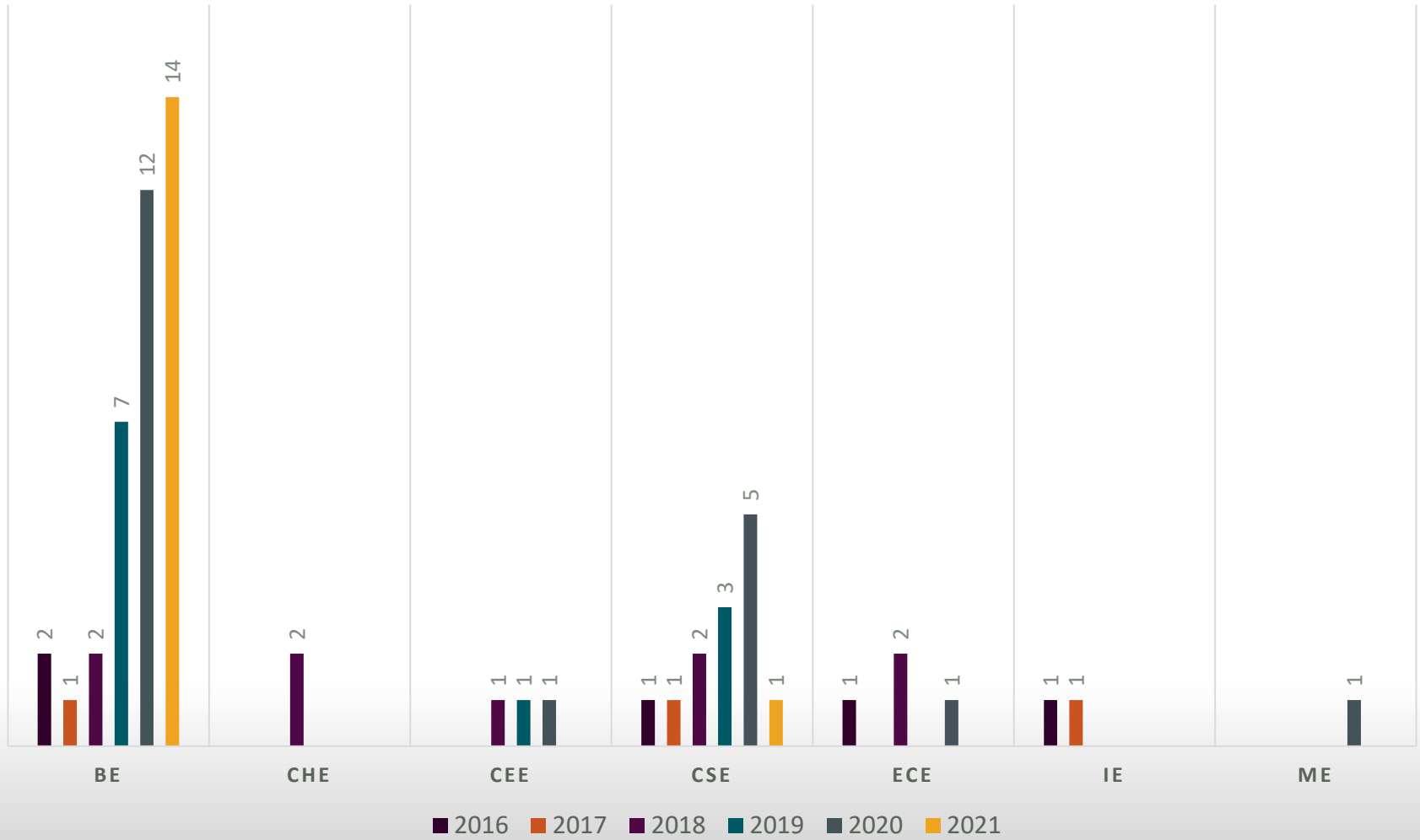
NOTE - \*Includes contributions from associated research staff only. Associated faculty expenditures are reported in their home academic department.

# Conference Proceedings



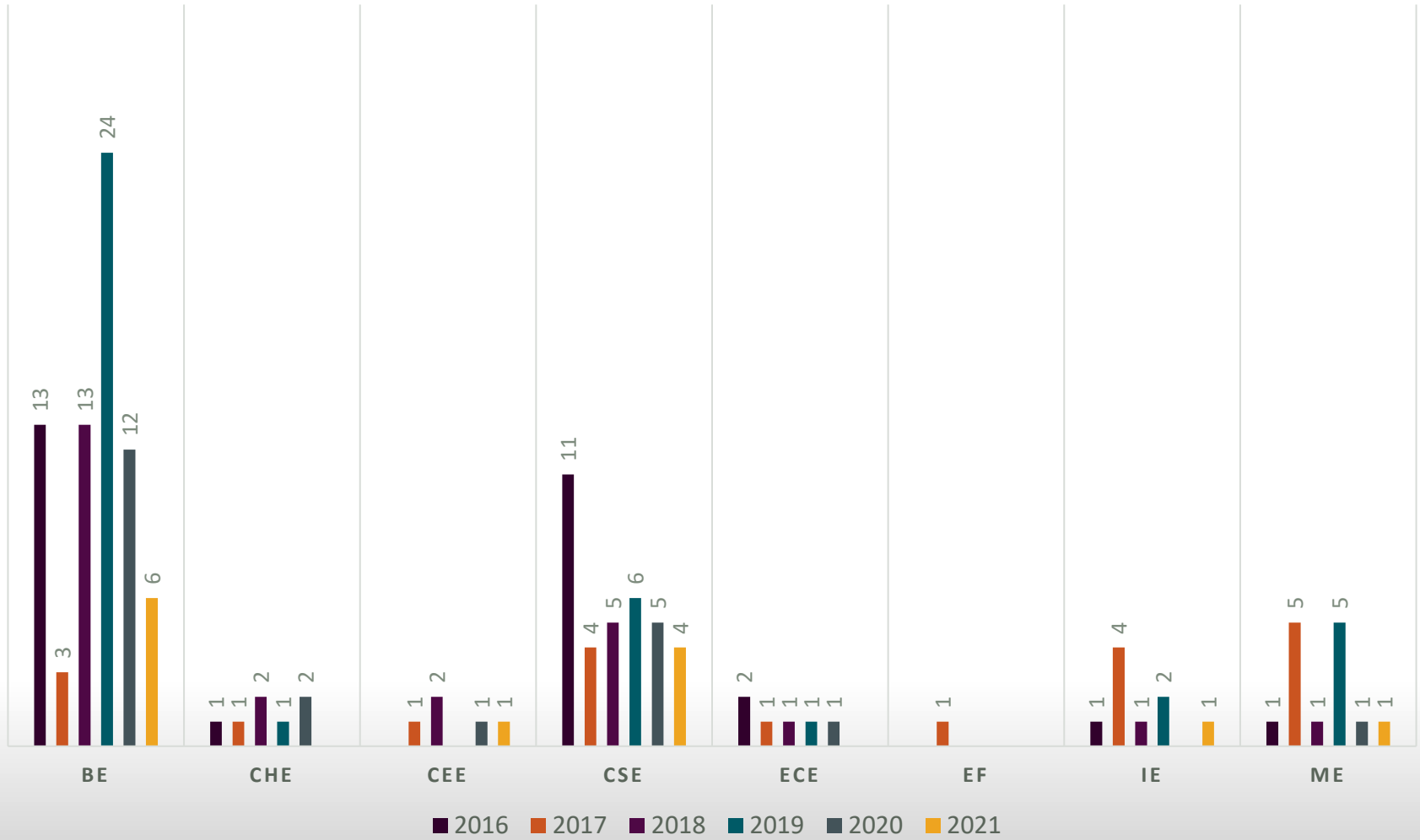
NOTE - \*Includes contributions from associated research staff only. Associated faculty expenditures are reported in their home academic department.

# Books Published



NOTE - \*Includes contributions from associated research staff only. Associated faculty expenditures are reported in their home academic department.

# Book Chapters

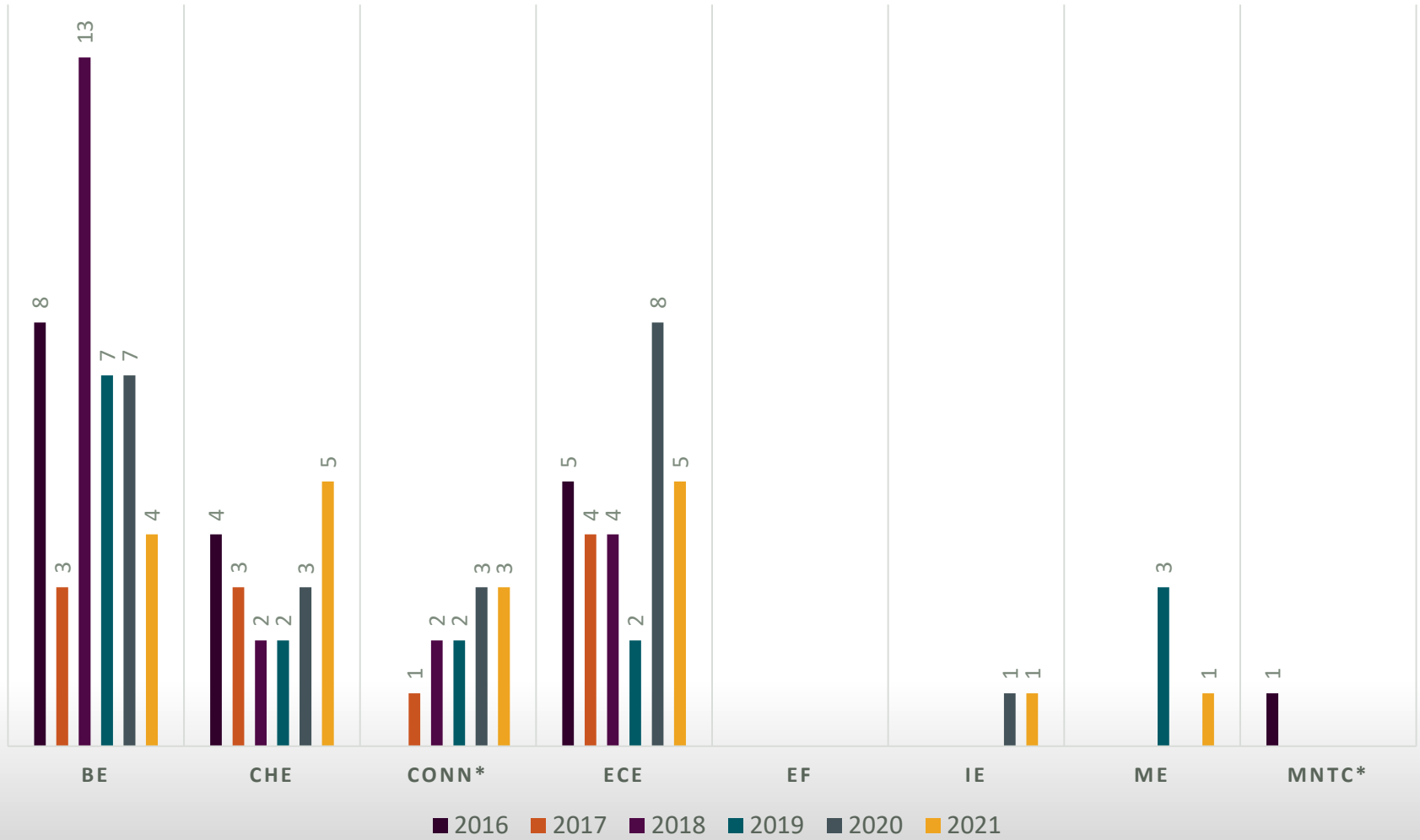


NOTE - \*Includes contributions from associated research staff only. Associated faculty expenditures are reported in their home academic department.

# CY21 Patents



# Awarded Patents



NOTE - \*Includes contributions from associated research staff only. Associated faculty expenditures are reported in their home academic department.