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Each year as I write this letter, I’m gifted the opportunity to reflect on the past year and our collective accomplishments. It’s no secret the last three years have been a challenge – though one we have not only survived, but thrived within.

Because of this constant dedication, we have managed to accomplish something I’m not sure anyone believed was possible – our reclassification as a Doctoral/Very High Research university (or “R1”) by the Carnegie Classification of Institutions of Higher Education.

Our path to R1 was unlike the other eight institutions that made the transition. We had no university-wide strategic plan that called for this goal; no doubling of faculty; no infusion from a large donor to finance labs, endow chairs, or doctoral fellowships. We didn’t buy new areas of excellence; instead, we unleashed what was already here. We built it never sacrificing our brand and grew it from the ground up.

Simultaneously, DU’s research and scholarship shone brightly. Our research expenditures topped $43 million in FY 22 – the highest value our institution has ever achieved. Our dedicated faculty received 120 new awards totaling nearly $26 million. The backlog of unexpended awards has continued to grow, fueled by new awards, to $50 million.

Faculty and their research drove revenue of $14 million in earned media. Courses solely focused on research collected $6 million. And another $6 million in facilities and administration fees provided critical revenue supporting infrastructure, the now #1 ranked library according to The Princeton Review, grant administration personnel, and so much more.

Our transition to R1 is a phenomenal collective achievement and our attention must turn to creating supports to faculty and staff in research aligned to our new designation. In January, the University made immediate and substantial investments recognizing the rapid growth in research has out paced our infrastructure. You can read more about this in this annual report.

The University does not achieve such growth and recognition without total engagement of our employees. Research does not progress without our librarians. We struggle to keep afloat and in-line without our grant administrators. Headway is not made if problems aren’t being solved efficiently and creatively in the middle of the night. Money is not spent and talented employees are not hired without Deans offices, ORSP, HRIC, and Shared Services. These are the people that make things happen.

Our students are the work engine and our fuel. Their endless energy and passion drives us when we need it most. DU hosted the annual Research & Scholarship Showcase online via Zoom, where 70 undergraduate students participated. DU also awarded 387 doctoral degrees, 2,808 master’s degrees, 35 undergraduate summer research grants, and 23 Undergraduate Partners in Scholarship (PINS) grants in FY 22.

Contrary to some common perceptions, research doesn’t cost money – we drive revenue, visibility, and rank and we create long lasting impact. We are no longer a diamond in the rough – we are unstoppable and here to stay. Now, we rewrite what R1 can look like – together.

Corinne Lengsfeld
Senior Vice Provost for
Research & Graduate Education
RESEARCH OVERVIEW

Despite the impact of COVID-19, FY 2022 was a record-breaking year with over $43 million in expenditures.

$43M

RESEARCH EXPENDITURES

In FY 2022, research expenditures continued it’s incline after a slight decrease in FY 2021. Over the past 10 years, expenditures have increased 123%.

$6M

FACILITIES & ADMINISTRATION COST REIMBURSEMENT

DU collected $6 million in F&A cost reimbursement, of which $1.5 million was returned to divisions.

*Note: All Others includes SCOL, Grad Tax, UCOL, DCB, Grad Studies, Iliff & OTL (<1% each).
NEW GRANT AWARDS

Even with the continued disruption of COVID-19, DU’s principal investigators did not let it deter them from securing new grant funding.

120 NEW GRANT AGREEMENTS

Of the 120 new grant agreements awarded in FY 2022, 14 were funded at more than $500k.

$25.9M NEW AWARD FUNDING

Throughout FY 22, DU received $25.9 million in new award funding.
In FY 22, DU was one of only nine universities recognized as a new Doctoral/Very High Research university (or “R1”) by the Carnegie Classification of Institutions of Higher Education, joining the ranks of 137 universities currently recognized as engaging in highest research activity.

To continue to support our teacher-scholars across the university, DU announced the following new multi-year investments in research.

**Pre-Award Unit**
Creation of a pre-award unit serving faculty for prospecting, proposal preparation, and training of new PIs and division grant managers. Staffing for multi-disciplinary large proposal writing and coordination also included.

**PI Support**
Expanded support for principal investigators to focus on their research by streamlining the accounting and management of awards.

**Post-Doc Support**
- Expanded support for post-docs to work with our faculty researchers
- Post-doc salary matching program (10 in the first year) plus training: $150k plus $30k = $180k

**Applicant Fee Waiver**
Expanded fee waiver for graduate applicants

**PROF Funding**
Increased PROF funds from $20k per award to $27k per award -- total increase in PROF award funding to $625k

**GRA Stipends**
Increased grant-funded GRA stipends 6%, mirroring GTA/GSA increase

**Facilities**
$150k investment in research facilities and space to support research growth

**Technology**
- Technology improvements: $65k
  - Human subject research (IRBNet): $30k
  - COI module (InfoEd): $35k

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**DU R1 RESEARCH INVESTMENTS**
CAMPAIGNS & INITIATIVES

STAT CONFERENCE

Purpose
Held in January 2022, this virtual event was hosted for the second time to explore the ways in which institutions, researchers, and academics have pivoted in real time to respond to the unprecedented challenges of the day. Focusing on lessons from COVID-19, panelists explored the impacts of COVID-19 on all aspects of life.

PUBLIC IMPACT FELLOWS

Purpose
In FY 2019, in collaboration with Marketing & Communications and the Office of the Provost, DU created the Public Impact Fellows program. This program was designed to increase faculty reach and impact of the University’s faculty thought leaders.

USNWR CAMPAIGN

Goal & Strategy
Currently listed as number 97 in “National Universities” by U.S. News & World Report (USNWR), the purpose and goal of this campaign is to increase top-of-mind awareness and perception of DU’s unique value propositions and relevance. It utilizes a multi-channel marketing campaign, combining targeted email communications with robust paid, earned and owned media touchpoints.

CONFERENCES

Conference
- Virtual via Zoom, Facebook Live & YouTube
- 14 speakers from 9 colleges, universities, and private organizations
- 1100+ viewers via Zoom, Facebook Live & YouTube

Conference Summary
- Media
  - Solid engagement through website and ads
  - Targeted emails/display advertising with Inside Higher Ed: 99,981 impressions & 281 clicks
- Social media: 63k impressions; 2k engagements
- Website (www.du.edu/stat): 1,763 views
- Next STAT Conference will be held January 2023

2022 PIFS

Purpose
- Anamika Barman Adhikari, GSSW
- Nazneen Barma, JKSS
- Ryan Elmore, DCB
- Michael Gibson-Light, CAHSS
- Kerstin Haring, RSECS
- Travis Heath, GSPP
- Jennifer Hoffman, NSM
- Cecilia Orphan, MCE
- Sarah Schindler, SCOL
- Christopher Whitt, ODEI

FY 2022 Summary
- 28 individual fellows featured from all 4 cohorts
- 98 total mentions in elite, national, and local media
- Most hits: Govind Persad (SCOL) & Alex Huffman (NSM)

FY 2022 Fellows

Anamika Barman Adhikari, GSSW
Naazneen Barma, JKSS
Ryan Elmore, DCB
Michael Gibson-Light, CAHSS
Kerstin Haring, RSECS
Travis Heath, GSPP
Jennifer Hoffman, NSM
Cecilia Orphan, MCE
Sarah Schindler, SCOL
Christopher Whitt, ODEI

Campaign
- Quarterly newsletter sent with a 20% open rate
- Paid Advertising: Inside Higher Ed, Chronicle of Higher Education, LinkedIn & Facebook
- Owned Content: RadioED podcast & video series
- Good exposure & high engagement throughout campaign

Campaign Results
- Inside Higher Ed impressions: 150,113
- Chronicle of Higher Education metrics
  - Newsletter ad clicks: 1,212
  - Digital display: 55,300 impressions
  - Email blast: 34.9% open rate (25% average)
- Social Media (LinkedIn & Facebook)
  - LinkedIn impressions: 285,248
  - Facebook boosted post engagements: 2879
FACULTY REPORT

287 PRINCIPAL INVESTIGATORS
funded for FY 2022

39 PRINCIPAL INVESTIGATORS
with $350k + in research expenditures

509 FACULTY AUTHORS

36,686 FACULTY CITATIONS

822 ARCHIVAL PUBLICATIONS

858 MEDIA PLACEMENTS
local (612) & national (246) media during FY 2022

TOP PRINCIPAL INVESTIGATORS
BASED ON FY22 EXPENDITURES

$4,000,000 +
Nancy Lucero, Butler

$2,000,000 +
Jonathan Moyer, JKSIS

$1,000,000 +
Douglas Clements & Julie Sarama, MCE
Galena Rhoades, CAHSS
Robin Leake, Butler
Phillip Strain, MCE
Elysia Davis, CAHSS
Amy Roberts, Butler

$500,000 +
Elaine Belansky, MCE
Michele Hanna, GSSW
Kristin Klopfenstein, CEAL
Paul Rullkoetter, RSECS
Ashley Hamilton, CAHSS
Elysia Clemens, CEAL
Pilyoung Kim, CAHSS
Lena Lundgren, GSSW
Kevin Shelburne, RSECS
Norma Hafenstein, MCE
Amin Khodaei, RSECS

$350,000 +
Kevin Morris, GSSW
Charmaine Brittain, Butler
Schuyler Van Engelenburg, NSM
Meredith Silverstein, Butler
Carole Wilcox, Butler
Gareth Eaton & Sandra Eaton, NSM
Daniel Paredes, KIHA
Sarah Watamura, CAHSS
James Blankenship & Dinah Loerke, NSM
Eric Kushner, NSM
Robin Tinghitella, NSM
John Latham, NSM
Scott Horowitz, NSM
Kingshuk Ghosh, NSM
Yan Qin, NSM
Kimberly Gorgens, GSPP
Daniel Linseman, NSM
GARETH EATON, NSM

*Preclinical Electron Paramagnetic Resonance Tumor Imager*
*National Institutes of Health, $2.67m*

Revolutionary methods of acquiring electron paramagnetic resonance (EPR) spectra of free radicals create a paradigm shift in application of EPR to understanding the role of radicals in cancer and in other diseases. Lung damage, stroke, myocardial infarction, brain injury, wound healing, other trauma, and peripheral vascular limitations may similarly benefit from EPR imaging of redox status. This project will test the imager in applications to redox equilibria in mouse tumors, reactive oxygen species related to cancer in mice, and acute lung injury.

ERICH KUSHNER, NSM

*Polarized Protein Trafficking and Angiogenesis*
*National Institutes of Health, $1.8m*

During angiogenic development, endothelial cells create a hollow cavity called a lumen. The mechanisms underpinning the morphodynamic changes in endothelial architecture and signaling leading to vascular lumen formation, or tubulogenesis, are incompletely understood. In this proposal we will investigate a protein called synaptotagmin-like protein 2 (syt12) that we believe is responsible for defining the luminal surface by directing protein transport to the apical membrane during blood vessel development.

SCOTT HOROWITZ, NSM

*Targeting Quadruplex Binding in ALS*
*National Institutes of Health, $1.8m*

Many of the proteins that have been implicated in ALS aggregation are nucleic acid binding proteins, and even more specifically, bind a particular structure of nucleic acid called a G-quadruplex. G-quadruplexes can form from RNA and DNA in the cell. Our laboratory recently found that G-quadruplexes are particularly efficient at modulating protein oligomerization and aggregation. We will therefore exploit this facet of G-quadruplex biology to develop treatments targeting protein aggregation in ALS.
**DANIEL LINSEMAN; BRADLEY DAVIDSON & KIM GORGENS**

*Exosome Biology in Alzheimer’s Disease and Concussion*
*National Institutes of Health, $1.5m*

Concussion or mild traumatic brain injury (mTBI) is a leading cause of disability in older adults, military service personnel, and athletes. Repeated concussions may lead to increased risk for dementia, but biomarkers which are both diagnostic of mTBI and prognostic for AD have not been identified. The current project is focused on identifying targets for drug development and novel biomarkers for this condition.

**TODD BLANKENSHIP & DINAH LOERKE**

*Control of Cell Ratcheting During Epithelial Morphogenesis*
*National Institutes of Health, $1.18m*

The pulsed nature of cytoskeletal forces implies that there must be cellular processes to extract unidirectional changes that drive processive transformations in cell shape. In the proposed studies, we will examine the upstream signals that engage ratcheting and direct Sbf/Rab35 compartmental behaviors to contracting interfaces or cell apices, and identify the fundamental changes in oscillatory durations, amplitudes, frequencies, and/or directionality that lead to contractile processivity.

**MARY CLARK, ANNA SHER; CORINNE LENGSFELD; KRISTIN DEAL & DEB ORTEGA**

*Adaptation: DU MERISTEM - Mobilizing Equity to Raise Inclusivity in STEM*
*National Science Foundation, $990k*

This program will implement systemic change to promote equity in hiring, promotion, and retention of Historically Excluded Faculty (HEF) in the STEM fields. The work to rectify both poor representation and marginalization of HEF at DU will be supported by transdisciplinary research and analyses concerning issues of inclusion and exclusion in institutions of higher education.
KATY BARS, GSPP

The Strengthening Bridges of Care Project
Caring for Denver Foundation, $750k

The Sturm Center and CUB Clinic see a need to integrate services, training, and outreach across populations served. Strengthening Bridges of Care is timely due to negative impacts of COVID-19 Pandemic, events in Afghanistan, and overall unrest negatively affecting our clients.

ERIC CHESS, KIHA

SilverBills: A Financial and Legal Tech Tool for Caregivers
SilverBills, $662k

This project will address the lack of financial management and legal support for caregivers of PwD by building features on our SilverBills product that simplify financial management, provide a supportive communication tool and a vault for critical legal documents. Using proprietary technology, SilverBills receives, scrutinizes, stores, and pays bills on behalf of clients. SilverBills intends to use the NIH grant to further develop its technology and tailor capabilities to specifically address the needs of Caregivers.

NICHOLAS PERRY, CAHSS

Evaluation of Responding to Relationships
Washington Park Research & Evaluation, $615k

The Research Scientists and Project Coordinators will support WPRE’s independent evaluation of Responding to Relationships to assess program performance, and provide a final, summative evaluative judgement that synthesizes our findings into a final report.

MARTIN MARGITTAI, NSM

Tau Pathology in Down Syndrome and Alzheimer’s
National Institutes of Health, $538k

Down syndrome (DS) is a genetic condition that occurs in 1 out of 700 births with more than 350,000 Americans affected. Although Alzheimer's disease (AD) occurs with high penetrance in DS, few treatment options are available. The current project is focused on discovery-based research of the tau protein, a major component of Alzheimer pathology and associated dementia seen in DS.
Even through the continued COVID-19 pandemic, the University of Denver supported a large number of graduate and undergraduate students through funding for research and scholarship. DU contributed grant funding, supporting 647 students and resulting in 20.8% of all students paid on campus being supported by grants. Additionally, the number of graduate assistantships are on the rise, more than doubling from FY 2010 to present.

While no international travel grants or graduate student conference travel grants were awarded in FY 2022, DU students still shined brightly. 2,808 Master’s degrees and 387 Doctoral degrees were awarded to graduate students. The Graduate Research Fellowships Program (GRFP) awarded 2 DU graduate students in FY 2022 and 35 undergraduates received Undergraduate Summer Research Grants.

In its second year, the Undergraduate Research Journal published two complete issues, featuring 17 articles, biographies, and interviews, all authored and peer reviewed by DU undergraduate students.
AWARD RECIPIENTS:
DEBORAH HAN
NATHALIE DIEUJUSTE

GRFP AWARDS
AWARD RECIPIENTS:
DEBORAH HAN
NATHALIE DIEUJUSTE

UNDERGRADUATE SCHOLAR TRAVEL FUND GRANTS
AWARDED IN FY 2022 TOTALING $6,636

UNDERGRADUATE SUMMER RESEARCH GRANTS
AWARDED IN FY 2022 TOTALING $117,116

UNDERGRADUATE PARTNERS IN SCHOLARSHIP (PINS) GRANTS
AWARDED IN FY 2022 TOTALING $32,400

MASTER'S DEGREES
AWARDED IN FY 2022

DOCTORAL DEGREES
AWARDED IN FY 2022

8
UNDERGRADUATE SCHOLAR TRAVEL FUND GRANTS
AWARDED IN FY 2022 TOTALING $6,636

35
UNDERGRADUATE SUMMER RESEARCH GRANTS
AWARDED IN FY 2022 TOTALING $117,116

2,808
MASTER'S DEGREES
AWARDED IN FY 2022

2
GRFP AWARDS
AWARD RECIPIENTS:
DEBORAH HAN
NATHALIE DIEUJUSTE

387
DOCTORAL DEGREES
AWARDED IN FY 2022

2
GRFP AWARDS
AWARD RECIPIENTS:
DEBORAH HAN
NATHALIE DIEUJUSTE

23
UNDERGRADUATE PARTNERS IN SCHOLARSHIP (PINS) GRANTS
AWARDED IN FY 2022 TOTALING $32,400

387
DOCTORAL DEGREES
AWARDED IN FY 2022
For the third year, the DU Research & Scholarship Showcase was hosted on an online platform, allowing presenters to showcase their work, even in the midst of a pandemic.

70 students participated in the 2022 Research & Scholarship Showcase.

The University of Denver's Research & Scholarship showcase welcomes DU community members to join in admiration of the exemplary scholarship of our graduate and undergraduate students. With the COVID-19 pandemic ongoing, the annual showcase was held as a Zoom conference. Presenters crafted engaging visual presentations, sharing their research and findings. Event attendees were able to view presentations, ask questions, and leave comments for presenters during the sessions. All research presentations are available upon request via e-mail at uap-researchshowcase@du.edu.
The Office of Research Integrity & Education (ORIE) continued to expand its presence to investigators by introducing a new website format, a research blog, and online training videos. To support our ongoing commitment to research integrity and compliance, Post Approval Monitoring (PAM) programs are integrated into human subjects protection, animal welfare, and biosafety research, with our team conducting 42 PAM reviews with investigators. The DU Animal Welfare Program was recognized as an exceptional program by AAALAC during the recent accreditation visit this spring. Obtaining this type of accreditation confirmed DU’s strong commitment to the responsible care and use of animals in science.

When DU was classified as an R1 university in December 2021, DU was recognized as a very high research-focused university. The number of submissions increased from our faculty, staff, and student investigators from an average of 77 monthly submissions in FY21 to 183 monthly submissions in FY22.

1000+ active IRB protocols
2200 FY 22 submissions to IRB
42% of IRB protocols are by student investigators
11 active IACUC protocols
32 active IBC protocols
The research and technology transfer enterprise at the University of Denver has continued to break records in FY 22. The Office of Intellectual Property & Technology Transfer (OIPTT) has managed an unprecedented number of active agreements, continuing a growth trend evidenced over the past four years that demonstrates the determination and resiliency of the DU research community. This year, OIPTT oversaw property rights protection activities associated with nine active US patent applications and one foreign patent application, 24 issued patents currently in maintenance, and a variety of activities related to trademark, copyright, trade secrets, and other IP rights. The office has continued to provide on-demand service to researchers and units across the campus regarding IP, tech transfer, commercialization, and partnership questions and needs.

As administrative, legal, and operational demands increase with DU’s achievement of R1 status, OIPTT has begun to actively partner with individual faculty, divisional and university-wide groups, and external partners to drive efforts to streamline processes, scale operations, and identify growth opportunities.