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**Welcome from the Leadership Team**

In a year marked by adaptation to the stresses of the global pandemic and reckoning for our country’s long history of racial bias, an understanding of the brain became more important than ever. The Duke Institute for Brain Sciences actively adapted to changes in our work environment, while supporting our suddenly isolated and anxious community by offering our expertise in changes in the brain caused by these stresses.

Through it all, the DIBS mission was accomplished. An excellent slate of seed grants were funded: four **Incubator Awards** (up to $100,000) and one **Germinator Award** ($25,000) will jump-start new research collaborations for cutting-edge brain science. Learners at the undergraduate, graduate, and post-doctoral levels were supported by our programs and workshops. We shared our enthusiasm for brain science with the local community here in Durham and around the state of North Carolina, in some ways more effectively than ever due to remote access. We continued to bring the Duke neuroscience community together for seminars, workshops and colloquia, albeit in virtual formats. **Our attendance numbers rose**.

DIBS continued its long-running **Inclusion and Power Dynamics** workshop series, with a deep focus on supporting our colleagues through pandemic- and society-related stresses. We initiated a **new program** to welcome **high schoolers** from under-represented backgrounds into neuroscience labs, and planned two programs to increase diversity at the graduate and undergraduate levels.

At the end of the fiscal year, we bid a fond farewell to Director Geraldine Dawson and welcomed **new Director Alison Adcock**.

The challenges presented by this year have strengthened our commitment to the important work of **connecting minds, advancing neuroscience, and improving lives**.

We invite you to enjoy this summary of a most extraordinary year.

*The DIBS Leadership Team*
RESEARCH

Each year, DIBS awards seed funding in amounts ranging from $25,000-$100,000 to projects that are significant to advancing the brain sciences, interdisciplinary, and highly collaborative. Below are this year’s awardees, and an update on a past project.

2020 INCUBATOR AND GERMINATOR AWARDS

- **DIBS External Advisory Board Incubator Awardee**
  “Parkinson’s Advance with DART and DANNCE”
  Timothy Dunn, PhD Neurosurgery School of Medicine and Michael Tadross, PhD, Biomedical Engineering, Pratt School of Engineering

- **Other Incubator Awardees**
  Timothy Faw, PhD Orthopaedic Surgery School of Medicine, Daniel T. Laskowitz, MD, MHS, Neurology; Muhammad Abd-El-Barr, MD, PhD, Neurosurgery; Haichen Wang, MD, Neurology, School of Medicine

  “Neural Mechanisms Underlying Tobacco Withdrawal-Induced Hyperalgesia” Maggie Sweitzer, PhD Psychiatry & Behavioral Sciences, School of Medicine; Katherine Martucci, PhD, Anesthesiology; F. Joseph McClernon, PhD,; and Alison Adcock, MD, PhD, Psychiatry & Behavioral Sciences, School of Medicine

  “Gut-to-Brain Sensory Conduction in Zebrafish” Eva Naumann, PhD Neurobiology School of Medicine John F. Rawls, PhD, Molecular Genetics and Microbiology, School of Medicine

- **Germinator Awardee**
  “Neural Correlates of Multi-toxicant Exposure in Preschool-age Children” Carina Fowler, Graduate Student, Psychology & Neuroscience, Trinity College of Arts & Sciences; Michael Gaffrey, PhD, and Aaron Reuben, PhD, Psychology & Neuroscience

**INCUBATOR SPOTLIGHT: NEURAL PROSTHESES FOR SPEECH AND LANGUAGE PROCESSING, AWARDED IN 2019**

What if you knew what you wanted to say, but your muscles wouldn’t form the words? The famous physicist Stephen Hawking, rendered speechless by Amyotrophic Lateral Sclerosis (ALS), used a device that responded to twitches of his cheek muscles. Each twitch selected a letter as he spelled words for a speech generator. That technology was groundbreaking for its time, but scientists at Duke hope to take the process to a new level: the speech generator will skip the cheek-muscle “middleman,” and statements will be communicated directly from the brain to the speech generator.

A group led by Dr. Gregory Cogan in the Department of Neurosurgery is working toward that ambitious goal. Using intracranial electrode technology, the researchers can measure the activity of many neurons from multiple brain regions at the same time. They have trained a computer algorithm to recognize the basic phonemes of our speech (sounds made by vowels and consonants) with 57% accuracy.

Their work has been performed thus far in volunteers who are able to speak, so that the researchers can check the accuracy of their predictions. This work has the potential to transform the lives of people with speech-impairing neuromuscular disorders. It also has the potential to transform our understanding of the uniquely human process of speech and language. This work would not have been possible without the multidisciplinary expertise of the team comprised of neurosurgeons, a neurologist, an engineer and a computational expert, and the collaborative spirit of a DIBS Incubator Award.
The Cognitive Neuroscience Admitting Program (CNAP) has been DIBS’ primary graduate education initiative since 2005. This unique program admits approximately five stellar candidates per year from a pool of about 100 applicants. The two-year curriculum of research rotations and cognitive neuroscience coursework allows students to explore several laboratories from more than 40 training faculty, and ultimately select their future PhD co-advisors. After the first two years, these students complete PhD requirements in their degree-granting home department, typically either the Department of Psychology & Neuroscience in Trinity College of Arts & Sciences or the Department of Neurobiology in the School of Medicine.

This year, the program undertook a rigorous self-evaluation process to identify strengths and growth opportunities. We were pleased to learn that CNAP has been highly successful in launching graduate students on multi-mentor, multi-disciplinary brain research trajectories at Duke. The program consistently attracts some of the most competitive applicants among Duke graduate programs, and CNAP alumni have landed tenure-track faculty positions at a rate of about ten times the national average for PhD programs. Graduates pursuing non-academic careers typically fill senior data scientist-style positions in the tech sector, healthcare industry, and non-profit institutions. The survey found high overall program satisfaction among CNAP alumni.

Some challenges identified by the self-evaluation were the need for enhanced quantitative training, continued diversification of the applicant pool, and access to high-quality neuroimaging facilities.

Program leaders are pursuing initiatives to address each of these challenges. We have established a partnership with Duke’s Master’s in Data Science (MiDS) program to increase access to quantitative courses. We have successfully intensified outreach to underrepresented applicants, raising the proportion of applicants from underrepresented groups from 4% to more than 20% over the past four years. We anticipate an additional boost to the diversity and inclusion of the program based on an ambitious training grant application (the “Impact Neuroscience” Program) under revision with the NIH at the time of this report. Impact Neuroscience will focus on creating a supportive environment in which all students can thrive, as a way to retain the top-notch students we recruit. Finally, CNAP, CCN, and DIBS leadership are actively organizing stakeholders and seeking funding for a research- and training-specific Duke neuroimaging center that would connect human and animal neuroimaging and computational tools. This proposed center would substantially enhance future trainees’ opportunities for cutting-edge training.
GOING VIRTUAL WITH THE SUMMER NEUROSCIENCE PROGRAM

Our Summer Neuroscience Program (SNP) focuses on rising junior and senior undergraduate neuroscience majors. The majority of these undergraduates have the goal of pursuing Graduation with Distinction when they become seniors. SNP enables each student the opportunity to work one-on-one with their mentors for the summer while they collect data that could eventually lead to a thesis in the spring of their senior year. In the summer of 2020, we hosted 17 SNP participants in research labs across campus, in the medical school and Trinity College of Arts and Sciences.

When COVID forced SNP to go virtual for the duration of the program in June and July 2020, participants and mentors navigated new approaches to online learning and data collection together. Some students prepared literature reviews, allowing a deep-dive into the background of their research. Some analyzed pre-existing data sets, while learning valuable statistical techniques. Faculty leader Dr. Thomas Newpher and program coordinator Tyler Lee hosted a Tuesday morning Zoom series, featuring speakers on topics related to careers in neuroscience, including everything from defining a career path based on values and skills to becoming better public speakers and creating effective scientific posters, as well as sessions on self-efficacy and science communication. Other meetings addressed topics such as research ethics, mentoring younger lab members, and tips on medical and graduate school admissions.

“I had a great experience with the mentorship and learning opportunities within SNP,” said Carolyn Huynh, who worked in Dr. Staci Bilbo’s lab in the Department of Psychology & Neuroscience. “Despite having to operate virtually due to COVID, Dr. Newpher and Ms. Lee ensured that we would still be able to connect with mentors and were always available to answer our questions. I particularly enjoyed our mentorship session on public speaking. The science communication skills I learned during the session were helpful as I prepared to give my oral thesis defense.”

SNP is a success in supporting our upper-level neuroscience majors as they become true colleagues in the practice of neuroscience research. The summer program allows them to hone skills in the lab and acquire other skills necessary for success. Of the 2020 group, 15 of 17 participants went on to earn the prestigious “Graduation with Distinction” honor in the Neuroscience major. All of them are now valued colleagues.
BASS CONNECTIONS TEAM SUPPORTS MENTAL HEALTH THROUGH ON-DEMAND PEER SUPPORT

The Bass Connections team entitled “DukeLine: Peer Mental Health Support for Graduate Students,” led by Drs. Nancy Zucker, Talita Ahmed, Savannah Erwin, Sarah Gaither, and Guillermo Sapiro has been working to improve the mental health of Duke students. They knew stigma and shame are major reasons why people in need of mental health care do not seek it, so they developed an on-demand, anonymous, peer-to-peer, text-based mental health support program. The Bass team envisioned a service that was less formal than a therapy session, provided by peers who are more relatable than a therapist. DukeLine was launched as a text-based peer support program in three Duke dorms in the fall semester of 2020.

To develop DukeLine, the students did an extensive review of all peer support programs across the country. Three important factors stood out from this review. First, the training of students who serve as support coaches was highly variable. The best training programs had peer supporters take a semester-long course with ongoing supervision, so DukeLine emulated that. Second, peer supporters’ shifts were long, often 24 hours, and utilization of the services was often very low. The DukeLine team hypothesized that a rapid response from alert, well-trained coaches would create a more effective program. They set up shorter shifts, in hopes of building a positive reputation for the program. Third, none of the other programs collected mental health data on the coaches themselves.

Psychologists know that we have to take care of people that are trying to take care of others, so this team took the innovative step of monitoring the coaches’ mental health throughout the semester. Faculty sponsors are readily available for added student support. DukeLine coaches were also encouraged to be eminently human: being honest about their own experiences with mental health struggles is a way to help others.

From the initial pilot launch, 5% of students in the three dorms used the program, 30% of the students who used it were repeat users (a testament to how helpful they found it), and 90% of students who used the service were very or extremely satisfied.

The DukeLine team has important plans for the future. They will expand to nine dorms in the fall semester of 2021. They will also advertise their services with the student counseling center so students can use DukeLine between counseling sessions or while on the waiting list. To improve the effectiveness of their services, they will explore using natural language processing and machine learning to train the coaches. The ultimate goal of the DukeLine team is to help build a Duke community where all students are looking out for each other and ready to offer support, and they are well on their way to this goal.
The DIBS postdoctoral consortium gives post-docs a chance to come together to share their science and support each other in what is, by definition, a transitional time in their careers. Many post-docs are looking to learn a new skill or add to their scientific portfolio during a typical 2- to 4-year appointment to enhance their pursuit of a permanent position. In that spirit, the DIBS postdoctoral consortium met monthly during academic year 2020-2021. Most post-docs Zoomed-in from home or from labs that were under-populated due to COVID-19 work restrictions. The Zoom sessions were therefore a chance to connect over science, but also to support each other. The year opened with a discussion led by Dr. Nicole Schramm-Sapyta, faculty sponsor of the group, on a recent article in Nature, “Post-Docs in Crisis: Science Cannot Risk Losing the Next Generation.” This article spoke to the difficulties that COVID-19 had presented or exacerbated among post-docs, and recommended both practical and philosophical advice. Taking stock around the group, DIBS post-docs were mostly concerned about what happens after the pandemic ends. “Will I be able to get a job with this period of reduced productivity on my resume?” “How can I make the most of this down-time?” The group offered support for each other and practical advice.

For the rest of the year, the post-docs took turns presenting their research. Topics ranged from adolescent alcohol exposure to the building of photoreceptor cells; from neurotoxicants to sex difference in pain processing; from learning to reward. Topics were approached from basic, computational, and clinical perspectives. Dr. Anne Draelos from the Pearson lab asked fellow post-docs to help her find the best way to explain a very complicated mathematical modeling project.

Dr. Andrew Hawkey made us aware of the slow-growing effects of environmental neurotoxins, whose effects often appear long after the initial exposure, and after the dangerous substances have been outlawed. Dr. Anne Baker delved into the nuances of sex differences in pain perception, busting myths on both sides of the debate over which sex can handle greater pain.

The post-docs' varying disciplinary perspectives added to the richness of the conversations. “In our own scientific fields, our perspectives can gain a sort of tunnel vision, but the diversity of this group helped broaden my perspective of how the brain is a multifaceted network,” said Dr. Kati Healey, post-doc in the Swartzwelder Lab in the Department of Psychiatry and Behavioral Sciences. “From presenting to this group, I received invaluable feedback that challenged my data interpretation and helped guide me in new directions.”

This image shows greater activation in the VTA when people experience high curiosity, which corresponds to better memory formation.
COMMUNITY OUTREACH

OUR EFFORTS TO PROMOTE AWARENESS OF BRAIN SCIENCE THROUGHOUT THE DURHAM COMMUNITY WERE FORCED TO GOVIRTUAL AS WELL, BUT THE IMPACT WAS STILL POWERFUL.

DIBS CENTER ON ADDICTION AND BEHAVIOR CHANGE HOSTED “SUBSTANCE USE PREVENTION WITH EQUITY: A COMMUNITY AND NEUROSCIENCE-BASED APPROACH.”

In September 2020, the DIBS Center on Addiction and Behavior Change, in collaboration with Dr. Wanda Boone, founder and CEO of Together for Resilient Youth (TRY), presented “Substance Use Prevention with Equity: A community and neuroscience-based approach.” This day-long event welcomed over 220 registrants and featured speakers on topics ranging from adolescent brain development to social stress and from biological mechanisms of resilience to public health approaches. In each section, a neuroscience researcher was paired with a community-based expert, so each topic was discussed from both a theoretical and practical perspective. NC Attorney General Josh Stein kicked off the event, highlighting the importance of community prevention and outlining state-level policies that his office has worked on. One key take-away from the day was the importance of addressing basic human needs to prevent drug use. Suzanne Porter, Executive Director of the United Way of Rutherford County, summed it up: “If we’re not looking at disparities in housing, education, health care, insurance...and working with partners to address those disparities, then we’re spinning our wheels.” A similar event is planned for February 2022, focusing on marijuana’s impacts on communities.

FOSTERING MENTAL HEALTH AND CRIMINAL JUSTICE REFORM IN DURHAM

In a year marked by intense discussion about policing and criminal justice reform, a team of students led by Drs. Nicole Schramm-Sapyta and Maria Tackett was at the center of the conversation. “Mental Health and the Justice System in Durham County” is a Bass Connections Brain and Society team, one of 10 managed by DIBS, and also Data Plus team, managed by the Rhodes Information Initiative.

The team has collaborated for many years with Durham’s Crisis Intervention Team and Stepping Up Initiative. These two community groups focus on ways to improve interactions between law enforcement, the criminal justice system, and people with mental illness and substance addictions.

The Bass Connections team focuses on data analysis to understand what is working and where the county can most efficiently direct resources. Combining data from the Durham County Detention Facility and Duke Health, the team has demonstrated that approximately 20% of those detained in the detention facility have a serious mental illness. The DIBS team showed that there is significant overlap between patients seen frequently in the Duke Emergency Department and those frequently re-arrested. These data were shared with Durham city and county leaders as part of their budgetary discussions for the upcoming fiscal year. Moving forward, the team aims to find ways to help people move out of crisis mode and into stable mental health care.

Wider than the Sky by Morgan Biele
The aim of this painting was to comment on the range of capacities of the brain- to hold skies, contain them, understand them, write them, paint them.
DUKE CENTER FOR AUTISM STAYS CLOSELY CONNECTED TO OUR COMMUNITY

Even in the “year of social distancing,” the Duke Center for Autism and Brain Development stayed closely connected to our community partners and to the autism community, coordinating popular public events and special programs.

The Center brought its public events to the virtual platform, including Music 2 the Max! 2020, attended by more than 250 people across the globe. In collaboration with Duke Arts & Health, the Center coordinated the free, month-long event featuring two live and three video episodes. Viewers participated in sing-alongs, learned the “science of sound,” and made musical instruments with common household items.

Two highlights of the year occurred in April, during the United Nations Autism Awareness/Acceptance Month. At our featured event, Morénike Giwa Onaiwu inspired hundreds of participants with her deeply personal story, sharing her experience as a Black autistic woman, global activist, teacher, and mother of autistic children. Ms. Onaiwu encouraged her audience to embrace the diversity of the autism community, explaining, “All autism is ‘real’ autism. Autism is a spectrum, and there is always more than one story to tell.” Also in April, the Duke Center for Autism staff and faculty shared their expertise and advice across multiple community events and national news platforms. The video “What is Autism,” produced by Duke University Communications in collaboration with the Duke Center for Autism, was featured by the YouTube platform on World Autism Day, April 2nd, and has been viewed more than 300,000 times to date.
SCIENTIFIC COMMUNITY BUILDING

A MAJOR COMPONENT OF THE DIBS MISSION IS TO BRING TOGETHER THE BRAIN SCIENCE COMMUNITY AND PROMOTE COLLABORATION. DIBS ACHIEVES THIS GOAL BY SUPPORTING MANY INTERDISCIPLINARY CENTERS AND RESEARCH GROUPS, AND BY PROVIDING LOGISTICAL SUPPORT FOR SEMINARS AND WORKSHOPS ON TOPICS PUT FORWARD BY DUKE FACULTY AND TRAINEES. BELOW IS A SUMMARY OF THIS YEAR’S HIGHLIGHTS.

DIBS SUPPORTS 5 INTERDISCIPLINARY CENTERS:

- Center for Cognitive Neuroscience
- Center for Neural Engineering & Neurotechnology
- Center on Addiction & Behavior Change
- Duke Center for Autism & Brain Development
- Duke Center for Interdisciplinary Decision Sciences

DIBS SUPPORTS 5 INTERDISCIPLINARY RESEARCH GROUPS:

- Cognitive, Auditory, & Neural Bases of Language & Speech
- Computational and Theoretical Neuroscience
- Neurohumanities Research Group
- Neuroimmunology & Glia Group
- Philosophy and Neuroscience Journal Club

TYPES OF DIBS-SPONSORED EVENTS, 2020-2021

SPOTLIGHT: NEUROIMMUNOLOGY AND GLIA GROUP ANNUAL RETREAT: “GLIA CAMP”

Glia Camp is the annual retreat and the highlight of the year for the DIBS Neuroimmunology and Glia Group (NGG). After cancelling the event in 2020 due to the COVID-19 pandemic, NGG adapted to a virtual environment and held an overwhelmingly successful virtual event on April 28, 2021. Although we would have preferred to be in person, the pandemic allowed us to reach a broader audience. More than 150 individuals registered for the event, spanning eight states and eight countries. **Keynote speakers were world-renowned neuroimmunologists** Drs. Robyn Klein and Isaac Chiu. In addition to keynote talks, there were eight trainee talks and 19 posters spanning topics in neurophysiology, autism spectrum disorders, Alzheimer’s disease, glioblastoma, and more. The talks were presented over Zoom and posters were presented using the Gathertown platform which gave us all the opportunity to virtually interact. The pandemic presented challenges, but the NGG adapted, and had a stronger event as a result.
VISIONFEST: AN INTERDEPARTMENTAL DISCUSSION AND COLLABORATION FOR SCIENTISTS & CLINICIANS STUDYING THE VISUAL SYSTEM

In September of 2019, after attending a Cold Spring Harbor Laboratory course and inspired by the diverse group of clinical and basic researchers they met, two Duke postdoctoral fellows, Drs. Miranda Scalabrino and Cameron Prigge, created Duke VisionFest. The pair designed the day-long event to foster collaboration between Duke basic scientists and clinicians studying the visual system. After a year of planning, Duke VisionFest 2020 had over 100 people in attendance. Originally planned as a campus event, it was moved to a virtual format due to COVID-19 restrictions, allowing non-Duke participants to attend. The symposium featured keynote speaker Dr. Joseph Carroll from the Medical College of Wisconsin, as well as research talks, lightning talks, and panel discussions. Participants included clinical and research faculty, postdocs, graduate students, staff, medical students, and residents. Drs. Prigge and Scalabrino obtained financial and in-kind support from DIBS, Duke School of Medicine, and Duke Neurobiology Department, as well as corporate sponsorship from Atsena Therapeutics, a Durham-based biotech company. Twelve different speakers from six Duke departments gave research talks on subjects such as how photosensitive cells work, visual system development, biomarkers of blinding diseases, and visual-motor learning. The symposium also featured a lightning talk contest in which 14 trainee presenters gave three-minute, one-slide overviews of their research with prizes awarded to the top presenters. Attendees and participants offered highly positive feedback, saying that they enjoyed the format and opportunity to share their research.

In October of 2020, DIBS, the Duke Medical School Department of Head and Neck Surgery & Communication Sciences (HNSCS), and the Duke MEDx Program convened a virtual conference to discuss applications of artificial intelligence in otolaryngology & the communication sciences with approximately 360 registrants and 170 attendees. Howard Francis, Chair of the Department of HNSCS, and Geri Dawson, Director of DIBS, introduced the conference featuring eight speakers including Edward F. Chang, Professor and Chair of Neurological Surgery at UCSF. Blake S. Wilson, Director of the Duke Hearing Center and Debara L. Tucci, Director of the NIDCD and Adjunct Professor in Duke’s Department of HNSCS, served as the Co-Chairs for the conference. Along with Dr. Wilson, Geoffrey S. Ginsburg, Professor of Medicine at Duke and Director of the MEDx Program, served as moderators. The conference was highly interactive and clearly indicated the power of AI in applications in otolaryngology & the communication sciences.
“We are in the middle of our launch of the Duke Science and Technology Initiative and one of the themes is resilience of the body and brain. Nothing could illustrate that better than the symposium today,” said Provost Kornbluth.

Dr. Alison Adcock, then-Associate Director of DIBS and Director of the Center for Cognitive Neuroscience, moderated a series of TED-style talks from three Duke faculty: Nicole Calakos, PhD, Professor of Neurobiology and Neurology; Michael Tadross, PhD, Assistant Professor of Biomedical Engineering and Neurobiology; and Pelin Volkan, Associate Professor of Biology and Neurobiology. Each offered an overview of their neural-circuit-based research, then the three speakers came together for an interactive panel discussion.

School of Medicine Dean Mary Klotman introduced the keynote lecturer, Dr. Eve Marder from Brandeis University whom she called “one of the most influential neuroscientists of her generation.” In addition to sharing her research, Dr. Marder reiterated the importance of trainee development throughout her talk. “I’ve had the extraordinary privilege of working with a tremendous number of very, very talented people and I would just like to make the point that I think a really good PI is someone who actually recognizes the genius and the creativity of the people in the lab. Every really important or good thing we’ve done is because someone in the lab did something, thought something, and then brought it to me, and I was smart enough to realize they had done something really wonderful that I never would have thought of myself.”

Following Dr. Marder’s keynote, there was a robust question and answer session driven by the curiosity and enthusiasm among all the participants, including speakers. The intriguing conversation truly exemplified the interdisciplinary nature of neuroscience.

Following the poster session, then-DIBS Director Geraldine Dawson introduced Provost Sally Kornbluth who welcomed more than 325 attendees to the symposium.

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DIVERSITY & INCLUSION AT DIBS

DIBS WORKS TO DIVERSIFY THE BRAIN SCIENCES AT DUKE BY EDUCATING THE BROADER UNIVERSITY COMMUNITY ON HOW TO CREATE A WELCOMING RESEARCH WORK ENVIRONMENT AND BY CREATING A MORE DIVERSE NEUROSCIENCE WORKFORCE.

DUKE UNIVERSITY NEUROSCIENCE EXPERIENCE (DUNE) LAUNCHES

In the summer of 2020, a group of graduate students led by CNAP/Neurobiology PhD candidate Divya Subramanian and Neurobiology PhD Candidate Kirill Chesov brainstormed a program that would invite enthusiastic high school students from underrepresented and socioeconomically disadvantaged backgrounds to work in Duke Neuroscience labs. Their goals were to introduce students to exciting neuroscience research, foster mentoring relationships, and encourage the students to see themselves in a research setting. Students would have a chance to learn firsthand what it means to be a neuroscientist and have an experience that will show that it is a realistic career pathway for them.

Duke graduate students from labs in Neurobiology, Psychology & Neuroscience and CNAP took their idea to DIBS Associate Director Len White who encouraged them to craft a proposal outlining what the program would look like, and accounting for how it would be launched in a virtual environment due to COVID restrictions. That proposal was presented to the DIBS External Advisory Board and earned the enthusiastic support of EAB member George Lamb, who generously funded the pilot cohort of five students for the summer of 2021. Each high school student received a stipend and computer to use during the summer.

After careful consideration utilizing a holistic review rubric, the committee selected five students from a highly competitive pool of 86 applications from local rising sophomores, juniors and seniors.

The program ran for eight weeks in summer 2021, and allowed students to work on specific projects alongside graduate students, postdocs and faculty in the Bilbo, ElMallah, Eroglu, Moore and Naumann labs. They also participated in weekly professional and career development activities on topics such as getting into college, scientific communication, career advice, and “how I became a scientist” lectures from faculty. At the end of the program, students presented a virtual poster session, sharing the results of the work they completed.

Graduate students, mentors and faculty agreed that the program was beneficial for both the high school students and the graduate students, who developed valuable mentoring skills.

DUNE INAGURAL Planning Committee

15 particpants
- 15 faculty
- 15 postdocs
- 15 graduate students
- 15 staff

DUNE MENTORS

6 technicians
4 graduate students
2 postdocs
1 faculty

DUNE MENTORS
DIBS HOSTS SUCCESSFUL INCLUSION AND POWER DYNAMICS SERIES

DIBS Diversity, Equity, and Inclusion efforts exhibited great flexibility in a year marked by constant change and stresses. As everyone, our community scrambled to deal with the stresses brought on by COVID-19. In the summer of 2020, the Inclusion & Power Dynamics team quickly went into action, hosting five events, for both small and large groups, specifically addressing coping with the stresses of COVID. In the spring of 2021, once everyone had a chance to get used to the “new normal,” DIBS hosted two meetings aimed toward faculty as leaders in their labs. We hosted a panel discussion, “Leadership in the Pandemic: Lessons Learned,” by faculty who have been thriving despite pandemic stresses. In the session, attendees got confirmation they were not alone. Even panelists who seemed to be highly successful shared periods of deep darkness and lack of productivity. One attendee summed it up perfectly in the evaluation: “I’d say that the most useful piece of information was that everyone is in this together. I was being extra auto-critical during this pandemic season. Being in this conversation it was clear to me that I may need to impart in a bit more of auto-compassion. Barriers are everywhere and I may want to be less critical.”

The stresses brought on by a national dialogue around systemic racism also affected many members of our community. The Inclusion & Power Dynamics workshop series responded with seven small-group offerings to allow the community to discuss difficult topics in a thoughtful way.

Across the three years of the DIBS Inclusion and Power Dynamics workshop series, our work has consistently found that most difficulties in the research workplace result from a lack of understanding of the principles of leadership, and the impact that power dynamics can have on already-marginalized populations. Thus, we have consistently sought to support our faculty in their roles as leaders, whether that be in their own labs, in the classroom, or in graduate programs. In addition to the support for leadership, we add awareness of the specific issues of racism, sexism, homophobia, and other specific biases. This results, we hope, in a cadre of scientists who are compassionate in their leadership and who have enough knowledge of history and research on racism, sexism, and bias to support all members of their teams.

A NEW NIH (T34) GRANT TO SUPPORT UNDER-REPRESENTED UNDERGRADUATES IN NEUROSCIENCE

In the spring of 2021, a proposal developed by Drs. Len White and Ornit Chiba-Falek was chosen from a competitive pool of Duke applicants to apply for major funding opportunity from the NIH-NICMS (National Institute of General Medical Sciences) under their “Maximizing Access to Research Careers (MARC)” program.

The goal of this grant is to increase the pool of well-trained undergraduates from historically underrepresented communities who aspire to research careers in neuroscience. MARC will encourage and support underrepresented Duke undergraduates to complete a major or minor in Neuroscience and then compete successfully for admission into a research-focused higher degree programs (PhD or MD/PhD).

This program is unique in the way that it merges research and clinical experiences, allowing our students to better understand how research is translated into healthcare practice and how brain diseases impact patients.

We eagerly await review of this proposal and a funding decision from NIH-NIGMS sometime in the fall of 2021.

By encouraging students at the high school (DUNE), undergraduate (MARC@Duke) and graduate level (CNAP), DIBS is actively working to welcome students of all backgrounds into the fascinating world of brain science.
LEADERSHIP & GOVERNANCE

LEADERSHIP IN FY 2020-2021

Geraldine Dawson, PhD, Director
Alison Adcock, MD, PhD, Associate Director
Samantha Bowen, PhD, Associate Director
Nicole Schramm-Sapyta, PhD, Associate Director
Leonard E. White, PhD, Associate Director

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Nicole Schramm-Sapyta, PhD, Associate Professor of the Practice and Associate Director, Duke Institute for Brain Sciences
Walter Sinnott-Armstrong, PhD, Chauncey Stillman Professor of Practical Ethics and Professor of Philosophy and Psychology & Neuroscience
Leonard E. White, PhD, Associate Professor of Neurology and Associate Director, Duke Institute for Brain Sciences
BY THE NUMBERS

192 FACULTY in DIBS Faculty Network
200 POST DOCS in Postdoctoral Consortium
250 GRADUATE STUDENTS in Graduate Consortium

UNDERGRADUATE EDUCATION
RESEARCH FOR CREDIT

86 students took part in Research Independent Study
11 students took part in Research Practica
3 students took part in Independent Scholarship
17 students participated in the Summer Neuroscience Program; 15 of whom earned Graduation with Distinction honors
93 students on Bass Connections Brain & Society teams

DEPARTMENTS REPRESENTED AMONG DIBS INCUBATOR AND GERMINATOR Awardees, 2020

- Anesthesiology 19%
- Biomedical Engineering 6%
- Molecular Genetics and Microbiology 6%
- Neurobiology 13%
- Neurology 13%
- Psychiatry & Behavioral Sciences 19%
- Psychology & Neuroscience 19%
- Orthopaedic Surgery 6%
- Environmental Sciences and Policy 6%

DEPARTMENTS IN WHICH UNDERGRADUATE NEUROSCIENCE INDEPENDENT STUDY OR PRACTICUM CREDIT WAS EARNED

- Anesthesiology 30
- Biology 8
- Bioinformatics and Biostatistics 8
- Biomedical Engineering 7
- Evolutionary Anthropology 3
- Medicine 2
- Molecular Genetics and Microbiology 3
- Neurobiology 2
- Neurology 2
- Neuroscience 22
- Ophthalmology 21
- Psychology & Neuroscience 2
- Pediatrics 1
- Pharmacology & Cancer Biology 1
- Philosophy 1
- Psychiatry & Behavioral Sciences 1
- Radiology 1
- Science & Society 1
- Slavic & Eurasian Studies 1