J.P. Morgan 2022 Healthcare Conference

Michel Vounatsos, Chief Executive Officer

January 10, 2022
Forward-looking statements

This presentation and the discussions during this conference call contain forward-looking statements, including statements made pursuant to the safe harbor provisions of the Private Securities Litigation Reform Act of 1995, relating to: our strategy and plans; potential of, and expectations for, our commercial business and pipeline programs; capital allocation and investment strategy; clinical development programs, clinical trials, and data readouts and presentations; risks and uncertainties associated with drug development and commercialization; regulatory discussions, submissions, filings, and approvals and the timing thereof; the potential benefits, safety, and efficacy of our and our collaboration partners’ products and investigational therapies; the anticipated benefits and potential of investments, collaborations, and business development activities; our future financial and operating results; 2021 financial guidance; plans relating to share repurchases. These forward-looking statements may be accompanied by such words as “aim,” “anticipate,” “believe,” “could,” “estimate,” “expect,” “forecast,” “goal,” “intend,” “may,” “plan,” “potential,” “possible,” “prospect,” “will,” “would,” and other words and terms of similar meaning. Drug development and commercialization involve a high degree of risk, and only a small number of research and development programs result in commercialization of a product. Results in early-stage clinical trials may not be indicative of full results or results from later stage or larger scale clinical trials and do not ensure regulatory approval. You should not place undue reliance on these statements or the scientific data presented.

These statements involve risks and uncertainties that could cause actual results to differ materially from those reflected in such statements, including: our dependence on sales from our products; uncertainty of long-term success in developing, licensing, or acquiring other product candidates or additional indications for existing products; failure to compete effectively due to significant product competition in the markets for our products; failure to successfully execute or realize the anticipated benefits of our strategic and growth initiatives; difficulties in obtaining and maintaining adequate coverage, pricing, and reimbursement for our products; our dependence on collaborators, joint venture partners, and other third parties for the development, regulatory approval, and commercialization of products and other aspects of our business, which are outside of our full control; risks associated with current and potential future healthcare reforms; risks related to commercialization of biosimilars; failure to obtain, protect, and enforce our data, intellectual property, and other proprietary rights and the risks and uncertainties relating to intellectual property claims and challenges; the risk that positive results in a clinical trial may not be replicated in subsequent or confirmatory trials or success in early stage clinical trials may not be predictive of results in later stage or large scale clinical trials or trials in other potential indications; risks associated with clinical trials, including our ability to adequately manage clinical activities, unexpected concerns that may arise from additional data or analysis obtained during clinical trials, regulatory authorities may require additional information or further studies, or may fail to approve or may delay approval of our drug candidates; the occurrence of adverse safety events, restrictions on use with our products, or product liability claims; risks relating to the distribution and sale by third parties of counterfeit or unfit versions of our products; risks relating to the use of social media for our business; risks relating to technology failures or breaches; risks relating to management and key personnel changes, including attracting and retaining key personnel; failure to comply with legal and regulatory requirements; the risks of doing business internationally, including currency exchange rate fluctuations; risks relating to investment in our manufacturing capacity; problems with our manufacturing processes; fluctuations in our effective tax rate; the direct and indirect impacts of the ongoing COVID-19 pandemic on our business, results of operations, and financial condition; fluctuations in our operating results; risks related to investment in properties; the market, interest, and credit risks associated with our investment portfolio; risks relating to share repurchase programs; risks relating to access to capital and credit markets; risks related to indebtedness; change in control provisions in certain of our collaboration agreements; environmental risks; and any other risks and uncertainties that are described in other reports we have filed with the U.S. Securities and Exchange Commission (SEC).

These statements are based on our current beliefs and expectations and speak only as of the date of this presentation. We do not undertake any obligation to publicly update any forward-looking statements.
ADUHELM (aducanumab–avwa) indication and safety statement

ADUHELM is indicated for the treatment of Alzheimer’s disease. Treatment with ADUHELM should be initiated in patients with mild cognitive impairment or mild dementia stage of disease, the population in which treatment was initiated in clinical trials. There are no safety or effectiveness data on initiating treatment at earlier or later stages of the disease than were studied. This indication is approved under accelerated approval based on reduction in amyloid beta plaques observed in patients treated with ADUHELM. Continued approval for this indication may be contingent upon verification of clinical benefit in a confirmatory trial or trials.

ADUHELM can cause serious side effects including amyloid related imaging abnormalities or ARIA. ARIA is a common side effect that does not usually cause any symptoms but can be serious. ADUHELM can cause serious allergic reactions. The most common side effects include ARIA, headache and fall.

Please see the full prescribing information and patient medication guide including warnings and precautions at ADUHELM.com.
BUILDING NEW FRANCHISES

EXECUTING ON BASE BUSINESS

STRONG FINANCIAL POSITION
Positioned to enter *two new large markets* with high unmet need

### ALZHEIMER'S DISEASE

<table>
<thead>
<tr>
<th>30 Million</th>
<th>6th</th>
<th>Leading cause of death in the U.S.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individuals impacted by Alzheimer's disease worldwide</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### DEPRESSION

<table>
<thead>
<tr>
<th>280 Million</th>
<th>&gt;700k</th>
</tr>
</thead>
<tbody>
<tr>
<td>People suffering from depression worldwide</td>
<td>Suicides annually</td>
</tr>
</tbody>
</table>

### Other Conditions

| Multiple Sclerosis | >1M treated patients, but no ability to completely halt or reverse disease progression |
| Spinal Muscular Atrophy | A leading genetic cause of infant mortality |
| Stroke | 2nd leading cause of death worldwide |
| ALS | <5 years average life expectancy |
| Parkinson's Disease | #2 neurodegenerative disease with ~10M patients worldwide |
| Lupus | ~4M people with SLE and ~2M with CLE worldwide; disproportionately impacts people of color |

Biogen is advancing an industry leading Alzheimer’s portfolio

<table>
<thead>
<tr>
<th>Program</th>
<th>Target</th>
<th>Modality</th>
<th>Preclinical</th>
<th>Phase 1</th>
<th>Phase 2</th>
<th>Phase 3</th>
<th>Marketed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aducanumab (ADUHELM™)*</td>
<td>Amyloid-β</td>
<td>mAb</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lecanemab/BAN2401*</td>
<td>Amyloid-β</td>
<td>mAb</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>BIIB080#</td>
<td>Tau</td>
<td>ASO</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Phase 2 start anticipated in mid-2022</td>
</tr>
<tr>
<td>BIIB076##</td>
<td>Tau</td>
<td>mAb</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Phase 1 start anticipated in Q1 2022</td>
</tr>
<tr>
<td>Undisclosed asset</td>
<td>Tau</td>
<td>Small molecule</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Undisclosed asset</td>
<td>Amyloid-β</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Undisclosed assets</td>
<td>Amyloid-β</td>
<td>mAb</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ATV-Amyloid-β**</td>
<td>Amyloid-β</td>
<td>mAb</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AAV-ZFP-MAPT^</td>
<td>Tau</td>
<td>GTx</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Undisclosed assets</td>
<td>Genetically defined populations and genetically linked targets</td>
<td>mAb</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Undisclosed asset</td>
<td>Small molecule</td>
<td></td>
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</tr>
</tbody>
</table>

*collaboration with Eisai; **collaboration with Denali; †collaboration with Ionis; ‡collaboration with Neurimmune; *collaboration with Sangamo
ADUHELM is the first and only FDA-approved therapy to address a defining pathology of Alzheimer’s disease\(^1\)

ADUHELM targets toxic aggregated forms of amyloid and impacts downstream tau biology in the brain

**ADUHELM**

Lecanemab

Anti-amyloid

**BIIB080**

Anti-tau

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Note: Aducanumab and lecanemab are being developed in collaboration with Eisai Co., Ltd.

\(^1\)ADUHELM Prescribing Information. Cambridge, MA: Biogen; \(^2\)Representative subject from PRIME study; \(^3\)Representative subject from EMERGE study

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**ADUHELM efficacy and safety evaluated in over 3,000 patients**

**Phase 3 EMERGE Study**
Study met its pre-specified primary and secondary endpoints showing a significant reduction in clinical decline.

**Phase 3 ENGAGE Study**
Study did not meet its primary endpoint, but analyses for both EMERGE and ENGAGE demonstrated that higher exposures to ADUHELM were associated with greater reduction in clinical decline.

**Phase 1b PRIME Study**
Exploratory efficacy assessments were directionally aligned with the positive EMERGE study.
Continued focus on three strategic launch priorities in the U.S.

**Improve the Community’s Understanding of our Clinical Data**
- Recent Phase 3 data at CTAD demonstrated **effect on plasma phospho-tau was correlated with change in amyloid beta plaque and reduced cognitive and functional decline**\(^1\)
- First patient of Phase 4 confirmatory study anticipated to be screened in May 2022 with primary completion expected ~4 years after study start
- **Phase 3 primary manuscript currently under review** at a top-tier scientific journal
- Phase 3 ARIA findings published in *JAMA Neurology*

**Support Development of System Infrastructure**
- Approximately **220 sites now treating patients** with ADUHELM
- **Continued increase in utilization** of Biogen’s Aβ CSF testing program

**Clarify Reimbursement**
- Reduced price for ADUHELM to improve access for patients
- Permanent **J-code now active** for ADUHELM
- Final Medicare **National Coverage Determination on antibodies directed against amyloid expected in April 2022** with draft decision in January 2022

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**Note:** Aducanumab and lecanemab are being developed in collaboration with Eisai Co., Ltd

\(^1\) CTAD 2021; CSF = cerebrospinal fluid; ARIA = amyloid-induced imaging abnormalities; JAMA = Journal of the American Medical Association
Lecanemab is an anti-amyloid antibody that targets toxic aggregated forms of amyloid in the brain.

**Asset Profile and Data**

- No titration period
- Phase 2 data demonstrates ~80% of patients were amyloid negative by 12 – 18 months of treatment\(^1\)
- Incidence of ARIA-E was 9.9% for highest treatment dose group in Phase 2 core study and 8.9% for patients who transitioned from placebo to the highest treatment dose in the OLE\(^1\)

**Future Milestones**

- Breakthrough designation in the U.S. with a rolling submission for accelerated approval expected to complete in H1 2022*\(^\)\(^1\)
- Phase 3 readout anticipated in H2 2022 with potential to be the first anti-amyloid antibody with full approval in Alzheimer’s disease
- AHEAD 3-45 trial, designed to evaluate whether lecanemab may benefit people with early pathology of Alzheimer’s and before cognitive impairment

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*Note: Aducanumab and lecanemab are being developed in collaboration with Eisai Co., Ltd\(^1\)*

\(^1\) Swanson et al., CTAD 2021; *Eisai Co., Ltd responsible for lecanemab regulatory filing; OLE = open label extension
BIIB080 is an anti-sense oligonucleotide that directly targets tau mRNA and aims to reduce all forms of tau.

- BIIB080 resulted in a time and dose-dependent reduction in the concentration of CSF total and phospho-tau\(^1\).
- Phase 2 study start for BIIB080 in Alzheimer’s disease anticipated in mid-2022.

Effect of BIIB080 in CSF Concentrations of Total Tau and Phospho-Tau Protein

\(^1\) Ratti et al., AAIC 2021
Zuranolone clinical development program provides multiple opportunities across the depression landscape

Potential first-in-class, oral GABA_A receptor PAM with demonstrated rapid onset of action in MDD and PPD and ‘as-needed’ treatment paradigm

~19 million adults affected by depression in the U.S.¹

- Current standard of care must be taken chronically, is slow acting and results in unwanted side effects

Zuranolone as a monotherapy or adjunctive to stable ADT in MDD

- 3 positive clinical studies - demonstrated rapid onset of action and a consistent safety profile
- Demonstrated durability of effect in the Phase 3 SHORELINE naturalistic study
- New Drug Application in MDD to the FDA planned in H2 2022, with rolling submission expected to start in early 2022

Zuranolone with simultaneous start with ADT

- CORAL Phase 3 study expected to readout in early 2022

¹ National Institute of Mental Health, 2021; ADT = antidepressant therapy; GABA_A = gamma aminobutyric acid type A; PAM = positive allosteric modulator; MDD = major depressive disorder; PPD = postpartum depression
Zuranolone clinical development program provides multiple opportunities across the depression landscape

Potential first-in-class, oral GABA$_A$ receptor PAM with demonstrated rapid onset of action in MDD and PPD and ‘as-needed’ treatment paradigm

**Approximately 1 in 8 new mothers affected by postpartum depression in the U.S.$^1$ with ~500,000 cases annually$^2$**

- Potential for an effective, out-patient treatment option to become new standard of care in PPD

**Positive ROBIN Phase 3 study published in JAMA Psychiatry$^3$**

**SKYLARK Phase 3 study in PPD expected to read out in mid-2022 with regulatory filing anticipated in the first half of 2023**

1 Bauman et al., 2020; 2 Martin et al., 2019; 3 Deligiannidis et al., 2021; GABA$_A$ = gamma aminobutyric acid type A; JAMA = Journal of the American Medical Association; PAM = positive allosteric modulator; PPD = postpartum depression
Four pillars to drive growth and long-term shareholder value

Neurology
Expanding on Biogen’s leadership in neuroscience with **25 programs** across a diversified pipeline

Specialized Immunology
**Two Phase 3 programs** in lupus representing potential first-in-class and best-in-class therapies

Biosimilars
Potential expansion of our biosimilars portfolio from **three assets to six**

Digital Health
Accelerating efforts to build complementary digital solutions and technologies to potentially **predict, measure and prevent** disease
Two potential waves of growth to build a multi-franchise portfolio

**Wave 1**
- **Multiple Sclerosis**
  - YESTERDAY
  - 2016-2020
- **Biosimilars**
- **Spinal Muscular Atrophy**
- **Multiple Sclerosis**

**Wave 2**
- **Genetic Neurodevelopmental**
- **Parkinson’s Disease / Movement Disorders**
- **Lupus**
- **Stroke**
- **Depression**
- **Alzheimer’s**
- **Expanded Biosimilars**
- **Neuromuscular**
- **Neuropsychiatry**
- **Alzheimer’s**
- **Expanded Biosimilars**
- **Neuromuscular**
- **Multiple Sclerosis**

**Digital Health**

**Early-Mid 2020s**

**Mid-Late 2020s**
## Potential breakthrough therapies to drive a second wave of growth

### Epidemiology

**STROKE**

- 5th leading cause of mortality in the U.S. caused by AIS
- 10 - 15% of all AIS cases are LHI

**LUPUS**

- ∼4M people impacted by SLE worldwide
- ∼2M people affected by CLE globally

**PARKINSON’S DISEASE / MD**

- 2nd most common neurodegenerative disease - Parkinson’s disease
- ∼7M adults living with essential tremor in the U.S.

### Unmet Need

**STROKE**

- Only ∼27% of patients eligible to receive current SoC pharmacological thrombolytics

**LUPUS**

- Suboptimal efficacy, toxicities and/or increased risk of infection limit use of current SoC
- No targeted therapies

**PARKINSON’S DISEASE / MD**

- No disease modifying therapy
- ∼50% of people treated do not respond or have sub-optimal response to SoC

### Pipeline

**STROKE**

- BIIB093 – Ph 3 for LHI; complementary for use with current SoC
- BIIB131 – Ph 2 results demonstrated positive impacts on blood vessel reopening and patient functional recovery

**LUPUS**

- Dapirolizumab Pegol – Ph 3 in SLE, a potential first-in-class CD40L infusion
- BIIB059 – Potential first-in-class anti-BDCA2 subcutaneous injection; Ph 3 in SLE ongoing with planned pivotal study start in CLE in 2022

**PARKINSON’S DISEASE / MD**

- BIIB122** – Ph 1b data showed target and pathway engagement in Parkinson’s patients
- BIIB124 / SAGE-324# – Ph 2b study currently enrolling

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* Collaboration with UCB; ** Collaboration with Denali Therapeutics; # Collaboration with Sage Therapeutics, Inc.
1 Biogen data on file; 2 Louis and Ottman, 2014; 3 Hedera, 2017; AIS = acute ischemic stroke; LHI = large hemispheric infarction; MD = movement disorders; SLE = systemic lupus erythematosus; CLE = cutaneous lupus erythematosus; SoC = standard of care
**Leading in neuroscience with a robust and diversified portfolio**

<table>
<thead>
<tr>
<th>Phase 1</th>
<th>Phase 2</th>
<th>Phase 3</th>
<th>Approved</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Multiple Sclerosis</strong></td>
<td>Orelabrutinib</td>
<td>BIIB061</td>
<td>BIIB091</td>
</tr>
<tr>
<td><strong>Alzheimer’s Disease and Dementia</strong></td>
<td>Aducanumab</td>
<td>BIIB100</td>
<td>BIIB080</td>
</tr>
<tr>
<td><strong>Neuromuscular Disorders including SMA and ALS</strong></td>
<td>Lecanemab</td>
<td>BIIB118</td>
<td>BIIB106</td>
</tr>
<tr>
<td><strong>Parkinson’s Disease and Movement Disorders</strong></td>
<td>Tofersen</td>
<td>BIIB094</td>
<td>BIIB122</td>
</tr>
<tr>
<td><strong>Neuropsychiatry</strong></td>
<td>BIIB094</td>
<td>BIIB101</td>
<td>BIIB104</td>
</tr>
<tr>
<td><strong>Neurovascular</strong></td>
<td>BIIB094</td>
<td>BIIB104</td>
<td></td>
</tr>
<tr>
<td><strong>Neuropathic Pain</strong></td>
<td>BIIB094</td>
<td>BIIB104</td>
<td></td>
</tr>
<tr>
<td><strong>Specialized Immunology</strong></td>
<td>BIIB094</td>
<td>BIIB104</td>
<td></td>
</tr>
<tr>
<td><strong>Biosimilars</strong></td>
<td>BYOOVIZ</td>
<td>SB15</td>
<td>BIIB800</td>
</tr>
</tbody>
</table>

*Not yet commercially available; ALS = amyotrophic lateral sclerosis; LHI = large hemispheric infarction; MDD = major depressive disorder; MS = multiple sclerosis; PPD = postpartum depression; SLE = systemic lupus erythematosus; CLE = cutaneous lupus erythematosus; SMA = spinal muscular atrophy.*

| 31 | Clinical programs today |
| 10 | Programs in Phase 3 or filed today |
| 22 | New clinical programs since 2017 |
| > 30 | Business development deals since 2017 |
**Strong focus on execution with key expected milestones in 2022**

<table>
<thead>
<tr>
<th>Product Launches</th>
<th>2022 H1</th>
<th>2022 H2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ADUHELM – Ongoing</strong></td>
<td></td>
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<tr>
<td><strong>VUMERITY – E.U. Launch (~20 Countries)</strong></td>
<td></td>
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<tr>
<td><strong>BYOOVIZ – U.S. Launch (mid-year)</strong></td>
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</tbody>
</table>

### Regulatory Filings

<table>
<thead>
<tr>
<th>Product</th>
<th>2022 H1</th>
<th>2022 H2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lecanemab* in Alzheimer’s disease – U.S. Filing</td>
<td></td>
<td>H1</td>
</tr>
<tr>
<td>Zuranolone* in MDD – U.S. Filing</td>
<td></td>
<td>H2</td>
</tr>
</tbody>
</table>

### Data Readouts

<table>
<thead>
<tr>
<th>Product</th>
<th>2022 H1</th>
<th>2022 H2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zuranolone* – Phase 3 in MDD#</td>
<td>Early</td>
<td>Mid-year</td>
</tr>
<tr>
<td>Zuranolone* – Phase 3 in PPD</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lecanemab## – Phase 3 in Alzheimer’s disease</td>
<td></td>
<td>H2</td>
</tr>
<tr>
<td>BIIB104 – Phase 2 in CIAS</td>
<td></td>
<td>Mid-year</td>
</tr>
<tr>
<td>BIIB078^ – Phase 1 in C9Orf72 ALS</td>
<td></td>
<td>H1</td>
</tr>
</tbody>
</table>

**Note:** Aducanumab and lecanemab are being developed in collaboration with Eisai Co., Ltd. Collaboration program; # Data from the CORAL Study; * Option agreement; ** Eisai responsible for lecanemab regulatory filing; ALS = amyotrophic lateral sclerosis; CIAS = cognitive impairment associated with schizophrenia; MDD = major depressive disorder; PPD = postpartum depression.
BUILDING NEW FRANCHISES

EXECUTING ON BASE BUSINESS

STRONG FINANCIAL POSITION
## Financial performance

<table>
<thead>
<tr>
<th>Year</th>
<th>Revenue ($B)</th>
<th>YTD¹ 2021</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>$12.3</td>
<td></td>
</tr>
<tr>
<td>2018</td>
<td>$13.5</td>
<td></td>
</tr>
<tr>
<td>2019</td>
<td>$14.4</td>
<td>$8.2B</td>
</tr>
<tr>
<td>2020</td>
<td>$13.4</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year</th>
<th>Non-GAAP diluted EPS</th>
<th>YTD¹ 2021</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>$21.81</td>
<td></td>
</tr>
<tr>
<td>2018</td>
<td>$25.58</td>
<td>$15.79</td>
</tr>
<tr>
<td>2019</td>
<td>$33.57</td>
<td></td>
</tr>
<tr>
<td>2020</td>
<td>$24.13</td>
<td></td>
</tr>
</tbody>
</table>

Our GAAP financial measures and a reconciliation of GAAP to Non-GAAP financial results are at the end of this presentation.

¹YTD = last 9 months prepared of reported amounts for the nine months ended September 30, 2021.

²Beginning in the second quarter of 2021 material upfront payments and premiums paid on the acquisition of common stock associated with significant collaboration and licensing arrangements along with the related transaction costs incurred are no longer excluded from Non-GAAP R&D and SG&A expenses. Prior period Non-GAAP results have been updated to reflect this change.
Continued leadership with a resilient multiple sclerosis business

**MS Patients**

- 2017: 343k
- 2018: 346k
- 2019: 357k
- 2020: 342k
- Q3’21: 341k

**Highlights**

- **LTM¹ revenue of $7.1 billion**
- **VUMERITY (diroximel fumarate) continuing to grow**
  - U.S. revenue Q4’20 $39M, Q1’21 $74M, Q2’21 $91M, Q3’21 $121M
  - E.U. approval obtained in Q4 2021 with planned launches across ~20 markets in 2022
- **Intramuscular PLEGRIDY launched in both the U.S. and E.U.**
- **Subcutaneous TYSABRI launched in the E.U. in 2021**
- **Continuing to pursue new treatment options**
  - InnoCare collaboration executed in Q2 2021

Note: Patient numbers represent estimated ending patient count as of December 31st of each year except for 2021, which represents patients as of September 30, 2021.

¹LTM = last 12 months prepared based upon the sum of reported amounts for the nine months ended September 30, 2021, and three months ended December 31, 2020. Includes royalties on the sales of OCREVUS.
Continued leadership position in SMA

SPINRAZA Patients

<table>
<thead>
<tr>
<th>Year</th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
<th>Q3'21</th>
</tr>
</thead>
<tbody>
<tr>
<td>Count</td>
<td>3,230</td>
<td>6,220</td>
<td>10,000</td>
<td>11,140</td>
<td>11,740</td>
</tr>
</tbody>
</table>

### Highlights

- **LTM\(^1\)** revenue of $2.0 billion
- **Over 11,000 patients** on therapy\(^2\)
  - Over 60,000 SMA patients in markets where Biogen expects to commercialize SPINRAZA\(^3\)
- Proven efficacy across all patient types and a well characterized safety profile
- Obtained reimbursement for SPINRAZA in China
- **Strengthening our competitive positioning in SMA, pursuing:**
  - New ASO that may have the potential for extended dosing intervals
  - Additional analyses on real-world evidence confirming efficacy in adults
  - Higher dose for even greater efficacy
  - Potential benefit following sub-optimal response to competitor’s gene therapy and oral treatments

\(^1\) LTM = last 12 months prepared based upon the sum of reported amounts for the nine months ended September 30, 2021, and three months ended December 31, 2020.

\(^2\) Total patients across the post-marketing setting, the Expanded Access Program, and clinical trials.

\(^3\) Biogen data on file.
Expanding our biosimilars business

Biosimilars Patients

<table>
<thead>
<tr>
<th>Year</th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
<th>Q3'21</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patients</td>
<td>75k</td>
<td>123k</td>
<td>209k</td>
<td>243k</td>
<td>244k</td>
</tr>
</tbody>
</table>

Commercialization of anti-TNFs in Europe

- Market-leading anti-TNF* portfolio in the E.U. with LTM\(^1\) revenue of $808 million
- Biogen contributed > €2 billion of healthcare savings in 2021 across Europe\(^2\)

Pursuing potential new biosimilars

- Biogen to commercialize potential ophthalmology biosimilars referencing LUCENTIS and EYLEA in the U.S., Canada, Europe, Japan, and Australia
  - Global market of ~$13 billion in 2021\(^1,3\)
- Positive Phase 3 data for BIIB800 referencing ACTEMRA
  - Global sales of ACTEMRA in 2020 were ~$3 Billion

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\(^*\)Source: IQVIA / MIDAS, WHO-DDD.
\(^1\)LTM = last 12 months prepared based upon the sum of reported amounts for the nine months ended September 30, 2021, and three months ended December 31, 2020.
\(^2\)Biogen estimate, data on file.
\(^3\)Company reported sales, EvaluatePharma. BYOOVIZ is being developed with Samsung Bioepis Co., Ltd.; BIIB800 is being developed with BioThera Solutions, Ltd.
BUILDING NEW FRANCHISES

EXECUTING ON BASE BUSINESS

STRONG FINANCIAL POSITION
### Balance Sheet (at end of Q3 2021)

- **Cash and marketable securities**: $3.9B
- **Debt**: $7.3B
- **Net debt**: $3.3B

### Cash Flow (YTD\(^1\))

- **Cash flow from operations**: $2.8B
- **Capital expenditures**: $0.2B
- **Free cash flow\(^*\)**: $2.6B

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*Free cash flow is defined as net cash flow from operations less capital expenditures.
\(^1\)YTD = reported amounts for the nine months ended September 30, 2021.
Environment

1st Fortune 500 to commit to go fossil fuel free with Healthy Climate, Healthy Lives

- Forming Scientific Advisory Council to advance research on air pollution and brain health
- Sustained 100% renewable electricity to power operations and expanded electric vehicle fleet to 13 countries

Social

Advance a healthier, more sustainable and equitable world

- Strengthening diverse talent pipeline with Morehouse School of Medicine with Health Equity Summer Fellowship Program
- Working with Harvard and Americares to help under-resourced clinics manage climate risks to improve patient health outcomes

Governance

Maintain oversight and improve ESG transparency and disclosure

- Published Biogen’s 1st DE&I Report, detailing aspirations and bolstering transparency
- Tied a portion of employees’ and executive officers’ compensation to advancing our ESG strategy
Significant opportunity for value creation

Building New Franchises

- Diversifying to create a multi-franchise portfolio with two potential waves of growth, initially driven by Alzheimer’s and depression
  - With ADUHELM and lecanemab, Biogen has the potential to bring two of the four anti-amyloid antibodies to market and provide options to patients
  - Positive Phase 3 data for zuranolone, a potential “as-needed” therapy in depression with planned regulatory filing in 2022
- Executing on multiple near-term value creation opportunities in 2022 including global drug launches, regulatory filings and pivotal data readouts

Executing on Base Business

- Continued leadership position in MS, SMA, and E.U. anti-TNF biosimilars
- Continuing to launch VUMERITY globally and expected U.S. launch of BYOOVIZ (LUCENTIS biosimilar) mid-2022

Strong Financial Position

- Strong balance sheet
- Significant cash flow with flexibility to allocate capital

Note: Aducanumab is being developed in collaboration with Eisai Co., Ltd.; Zuranolone is being developed in collaboration with Sage Therapeutics
Non-GAAP financial information

This presentation includes certain financial measures that were not prepared in accordance with accounting principles generally accepted in the U.S. (GAAP), including adjusted net income, adjusted diluted earnings per share, revenue growth at constant currency, which excludes the impact of changes in foreign exchange rates and hedging gains or losses, and free cash flow, which is defined as net flow from operations less capital expenditures. We believe that these and other Non-GAAP financial measures provide additional insight into the ongoing economics of our business and reflect how we manage our business internally, set operational goals, and form the basis of our management incentive programs. Non-GAAP financial measures are in addition to, not a substitute for, or superior to, measures of financial performance prepared in accordance with GAAP.

We do not provide guidance for GAAP reported financial measures (other than revenue) or a reconciliation of forward-looking Non-GAAP financial measures to the most directly comparable GAAP reported financial measures because we are unable to predict with reasonable certainty the financial impact of items such as the transaction, integration, and certain other costs related to acquisitions or large business development transactions; unusual gains and losses; potential future asset impairments; gains and losses from our equity security investments; and the ultimate outcome of pending significant litigation without unreasonable effort. These items are uncertain, depend on various factors, and could have a material impact on GAAP reported results for the guidance period. For the same reasons, we are unable to address the significance of the unavailable information, which could be material to future results.

Note regarding trademarks: AVONEX®, PLEGRIDY®, RITUXAN®, SPINRAZA®, TECFİDERA®, TYSABRI®, and VUMERITY® are registered trademarks of Biogen. ADUHELMTM, BENEPALITM, FLIXABITM, IMRALDTM, and BYO-OVIZTM are trademarks of Biogen. The following are trademarks of the respective companies listed: GAZYVA® and OCREVUS® – Genentech, Inc. Other trademarks referenced in this presentation are the property of their respective owners.
GAAP to Non-GAAP reconciliation

Diluted EPS and Net Income to Biogen Inc.
(Unaudited, $ in millions, except per share amounts)

<table>
<thead>
<tr>
<th></th>
<th>FY 2017</th>
<th>FY 2018*</th>
<th>FY 2019</th>
<th>FY 2020*</th>
<th>YTD 2021**</th>
</tr>
</thead>
<tbody>
<tr>
<td>GAAP EPS - Diluted</td>
<td>$11.92</td>
<td>$21.58</td>
<td>$31.42</td>
<td>$24.80</td>
<td>$7.90</td>
</tr>
<tr>
<td>Adjustment to net income attributable to Biogen Inc. (see below)</td>
<td>9.89</td>
<td>4.00</td>
<td>2.15</td>
<td>(0.67)</td>
<td>7.80</td>
</tr>
<tr>
<td>Non-GAAP EPS - Diluted</td>
<td>$21.81</td>
<td>$25.58</td>
<td>$33.57</td>
<td>$24.13</td>
<td>$16.70</td>
</tr>
</tbody>
</table>

| GAAP Net Income Attributable to Biogen Inc. | $2,539 | $4,431 | $5,889 | $4,001 | $1,188 |
| Amortization and impairment of acquired intangible assets | 815    | 747    | 490    | 465    | 806    |
| Acquired in process research and development | 120    | 113    | -      | 75     | 18     |
| Acquisition-related transaction and integration costs | -      | -      | 28     | -      | -      |
| (Gain) loss on fair value remeasurement of contingent consideration | 63     | (12)   | (64)   | (86)   | (49)   |
| Loss on divestiture of Hilrem, Denmark manufacturing operations | -      | -      | 55     | (93)   | -      |
| (Gain) loss on equity security investments | (126)  | (200)  | (94)   | 70     | -      |
| Premium paid on early debt redemption or debt exchange | -      | -      | -      | 9      | 10     |
| Net distribution to noncontrolling interests | 132    | 44     | -      | -      | (4)     |
| Restructuring, business transformation and other cost saving initiatives | 19     | 23     | 5      | 3      | 5      |
| Other reconciling items | 19     | 10     | 33     | 1      | -       |
| Income tax effect related to reconciling items | (236)  | (112)  | 31     | 81      | (335)   |
| Elimination of deferred tax asset/Valuation allowance associated with deferred tax assets | -      | 11     | -      | 90      | -       |
| Swiss tax reform | -      | -      | (54)   | -      | -       |
| U.S. tax reform | 1,174  | 125    | -      | -      | -       |
| Amortization included in equity in loss of investee, net of tax | -58    | -78    | -40    | -51     | -       |
| Non-GAAP Net Income Attributable to Biogen Inc. | $4,645 | $5,250 | $6,291 | $3,892 | $2,375 |

Numbers may not foot due to rounding.

* Beginning in the second quarter of 2021 material upfront payments and premiums paid on the acquisition of common stock associated with significant collaboration and licensing arrangements along with the related transaction costs incurred are no longer excluded from Non-GAAP R&D and SG&A expenses. Prior period Non-GAAP results have been updated to reflect this change.

** YTD = reported amounts for the nine months ended September 30, 2021.

Use of Non-GAAP Financial Measures

We supplement our GAAP consolidated financial statements and GAAP financial measures with other financial measures, such as adjusted net income and adjusted diluted earnings per share. We believe that these and other Non-GAAP financial measures provide additional insight into the ongoing economics of our business and reflect how we manage our business internally, set operational goals and form the basis of our management incentive programs. Non-GAAP financial measures are in addition to, not a substitute for, or superior to, measures of financial performance prepared in accordance with GAAP.

Our “Non-GAAP net income attributable to Biogen Inc.” and “Non-GAAP earnings per share - Diluted” financial measures exclude the following items from “GAAP net income attributable to Biogen Inc.” and “GAAP earnings per share - Diluted”:

1. Acquisitions and divestitures
   We exclude transaction, integration and certain other costs related to the acquisition and divestiture of businesses, the acquisitions of assets and items associated with the initial consolidation or deconsolidation of variable interest entities. These adjustments include, but are not limited to, charges for in-process research and development and certain milestones, the amortization of impairment of intangible assets, charges or credits from the fair value remeasurement of our contingent consideration obligations and losses on assets and liabilities held for sale.

2. Restructuring, business transformation and other cost saving initiatives
   We exclude costs associated with our execution of certain strategies and initiatives to streamline operations, achieve targeted cost reductions, rationalize manufacturing facilities or refocus research and development activities. These costs may include employee separation costs, retention bonuses, facility closing and exit costs, asset impairment charges or additional depreciation when the expected useful life of certain assets have been shortened due to changes in anticipated usage and other costs or credits that management believes do not have a direct correlation to our ongoing or future business operations.

3. (Gain) loss on equity security investments
   We exclude unrealized and realized gains and losses and discounts or premiums on our equity security investments as we do not believe that these components of income or expense have a direct correlation to our ongoing or future business operations.

4. Other items
   We evaluate other items of income and expense on an individual basis and consider both the quantitative and qualitative aspects of the item, including (i) its size and nature, (ii) whether or not it relates to our ongoing business operations and (iii) whether or not we expect it to occur as part of our normal business on a regular basis. We also include an adjustment to reflect the related tax effect of all reconciling items within our reconciliation of our GAAP to Non-GAAP net income attributable to Biogen Inc. and earnings per share - diluted.
Amortization and impairment of acquired intangible assets for the nine months ended September 30, 2021, reflect the impact of impairment charges recorded related to BIIB111 and BIIB112, which were obtained as part of the Nightstar Therapeutics plc acquisition. During the second quarter of 2021 we announced that our Phase 3 STAR study of BIIB111 and our Phase 2/3 XIRIUS study of BIIB112 did not meet their primary endpoints. In the third quarter of 2021 we suspended further development on these programs based on the decision by management as part of its strategic review process. During the nine months ended September 30, 2021, we recorded impairment charges of $365.0 million related to BIIB111 and $220.0 million related to BIIB112.
Questions & Answers